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## United Nations-Ecowas Intervention in Mali- Guinea Bissau: Geo-Economic and Strategic Analysis

By Barrister Okeke, Vincent Onyekwelu Sunday, Oji & Richard Okechukwu

*Nambra State University, Nigeria*

*Abstract-* Intervention in terms of international law, is the term for the use of force by one country or sovereign state in the internal or external affairs of another. In most cases, intervention is considered to be an unlawful. Oppenheim (1992) defines intervention as a forcible or dictorial interference by a State in the affairs of another State calculated to impose certain conduct or consequences on that other State. The military intervention by ECOWAS has not been totally successful in quelling conflicts, crisis of regime change and political succession and military intervention into politics in the West African sub-region and the Africa generally. Intervention can be done by various means, e.g. military, subversive, economic, or diplomatic. The latest of these conflicts in the sub-region which ECOWAS has intervened are Mali and Guinea Bissau in 2012. The objective has been to restore democracy by forcing the military back to the barracks or restricting it to the constitutional role of protecting the territorial integrity from internal insurrection and external aggression. But the root causes of military intervention into politics and crisis of regime change or political succession are yet to be adequately addressed by the ECOWAS, for example, issues of legitimacy crisis, poor governance, bad leadership, political leadership failure, political corruption, electoral crisis and political violence have been largely left unattended or ignored.

*Keywords:* united nations, ecowas. intervention, mali, guinea bissau, geo-economic and strategic analysis.

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# United Nations-Ecowas Intervention in Mali-Guinea Bissau: Geo-Economic and Strategic Analysis

Barrister Okeke <sup>α</sup>, Vincent Onyekwelu Sunday <sup>σ</sup>, Oji <sup>ρ</sup> & Richard Okechukwu <sup>ω</sup>

**Abstract-** Intervention in terms of international law, is the term for the use of force by one country or sovereign state in the internal or external affairs of another. In most cases, intervention is considered to be an unlawful. Oppenheim (1992) defines intervention as a forcible or dictatorial interference by a State in the affairs of another State calculated to impose certain conduct or consequences on that other State. The military intervention by ECOWAS has not been totally successful in quelling conflicts, crisis of regime change and political succession and military intervention into politics in the West African sub-region and the Africa generally. Intervention can be done by various means, e.g. military, subversive, economic, or diplomatic. The latest of these conflicts in the sub-region which ECOWAS has intervened are Mali and Guinea Bissau in 2012. The objective has been to restore democracy by forcing the military back to the barracks or restricting it to the constitutional role of protecting the territorial integrity from internal insurrection and external aggression. But the root causes of military intervention into politics and crisis of regime change or political succession are yet to be adequately addressed by the ECOWAS, for example, issues of legitimacy crisis, poor governance, bad leadership, political leadership failure, political corruption, electoral crisis and political violence have been largely left unattended or ignored. The political conditions in most of the countries in the sub-region and indeed Africa as a whole are not democracy friendly or unsuitable for democratization and flourishing of democracy or demilitarization (Aning and Bah, 2010; Sperling, 2011). Most scholars like Nowrot and Schabacker (1998) focus on the legality of ECOWAS intervention while the likes of Olonisakan (2010) concentrates on the effectiveness of the military intervention in quelling conflicts in the West African sub-region. Despite the fact that peacekeeping partnerships are yet to mature, the general consensus is that the world is headed towards greater integration between the UN and regional arrangements such as Ecowas. Such institutions play an important role, especially in a world with power imbalances, distrust and unrest. Cooperation among states towards peacekeeping mechanisms gives birth to opportunities for burden sharing, balancing power, pursuing self-interest and generally preventing the collapse of world order as it stands. In light of the changing security dynamics, peace operations have become both all the more complex and important. Bringing together regional arrangements allows flexibility for political manoeuvring and unity vis-à-vis mission mandate and implementation. Still in its infancy, peacekeeping alliances should be viewed as a means to an end rather than an end

unto itself. It is impossible to obtain a foolproof hybrid operation. But with each step forward, finding common ground for joint preparation mechanisms becomes all the more easier. This paper titled "UN-ECOWAS intervention in Mali: Geo-Economic and Strategic Analysis". The study is basically a qualitative research method relying mainly on secondary sources of data from internet source, official documents and country websites as the method of data collection. We made use of qualitative – descriptive analysis as our method of data analysis, that is, documentary studies of official document and other materials in analyzing the secondary data. The major purpose of embarking on this research is to examine the geo-economic and strategic implications of UN-ECOWAS intervention in Mali. Thus, we were able to make the following principal findings that, one, the delayed UN backed ECOWAS humanitarian intervention deepened the crisis in Mali. Two, that the poorly funded UN supported ECOWAS peacekeeping intervention worsened the terrorist attack in Mali. On the basis of this, we recommend, one, that UN and ECOWAS should evolve a rapid and quick deployment of humanitarian intervention forces in order to lesson crisis. Two, that UN and ECOWAS should adequately fund peacekeeping intervention forces in order to reduce terrorist attack.

**Keywords:** *united nations, ecowas. intervention, mali, guinea bissau, geo-economic and strategic analysis.*

## I. INTRODUCTION

Economic Community of West African States (ECOWAS) was established in 1975 primarily to facilitate economic integration and development in West African sub-region. But over the years, the regional economic organization evolved into regional security organization through its military intervention in the conflict situations in the member states and as well created a new organ, ECOWAS Ceasefire Monitoring Group (ECOMOG). The peacekeeping intervention began with Liberian civil in 1989 to Sierra Leone in 1997, Guinea Bissau in 1998, Liberian Second Civil War in 1999, Cote d'Ivoire in 2002, Second Cote d'Ivoire Civil War in 2011, and Mali in 2012 and Second Guinea Bissau crisis in 2012 (Agyapong, 2005; Belmakki, 2005; Levitt, 2008; Francis, 2009; Olonisakin, 2010; Yabi, 2010; Kabia, 2011). The ECOWAS recognizes the fact that no meaningful economic integration and development will be possible under conditions of conflicts as the sub-region was fast assuming the status of conflict region. Prior to the military intervention, ECOWAS had always relied on traditional method of

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conflict resolution as a result of widespread conflict and instability in the sub-region in the 1990s and early 2000s, the leaders came to the realization that economic prosperity cannot be achieved in the absence of peace and security. For example before the Liberian conflict in 1989, the ECOWAS relied on traditional conflict resolution mechanisms like mediation in Niger and other cases in the sub-region (Agyapong, 2005; Francis, 2009). ECOWAS is becoming more a regional security organization. But that does not mean total jettisoning of traditional conflict resolution mechanisms as the cases in Togo in 2005 where democracy was restored after military coups, demonstrated. Even in the cases of military intervention, traditional methods of imposing sanctions and encouraging dialogue with the regimes were exhausted (Suifon, 2005; Levitt, 2008).

However, the military intervention by ECOWAS has not been totally successful in quelling conflicts, crisis of regime change and political succession and military intervention into politics in the West African sub-region and the Africa generally. The latest of these conflicts in the sub-region which ECOWAS has intervened are Mali and Guinea Bissau in 2012. The objective has been to restore democracy by forcing the military back to the barracks or restricting it to the constitutional role of protecting the territorial integrity from internal insurrection and external aggression. But the root causes of military intervention into politics and crisis of regime change or political succession are yet to be adequately addressed by the ECOWAS, for example, issues of legitimacy crisis, poor governance, bad leadership, political leadership failure, political corruption, electoral crisis and political violence have been largely left unattended or ignored. The political conditions in most of the countries in the sub-region and indeed Africa as a whole are not democracy friendly or unsuitable for democratization and flourishing of democracy or demilitarization (Aning and Bah, 2010; Sperling, 2011). Most scholars like Nowrot and Schabacker (1998) focus on the legality of ECOWAS intervention while the likes of Olonisakan (2010) concentrates on the

a) *The Role of ECOWAS in Conflict Prevention, Resolution, Management and Military Intervention*

At the time of the establishment of ECOWAS in 1975, its main objective was the economic integration of its Member states. To achieve this objective, to a large extent hampered by political crises in the region and rivalries between heads of state for the leadership of the regional organization, there was the need to gradually attach greater importance to peace, defence and security issues. The decade of the 1990s has been particularly decisive for ECOWAS' evolution into an organization capable of managing conflicts. The 1990 decade saw ECOWAS, spurred by its most powerful

member country by far, Nigeria, intervene beyond the conventional diplomatic field by sending thousands of soldiers to try to restore peace in Liberia, then in Sierra Leone and more modestly in Guinea Bissau. The assessment of these military interventions decided by the Assembly of Heads of State and Government, the highest decision making body of ECOWAS and implemented by the Executive Secretariat has been the subject of many studies and has generated intense debates twenty year after the establishment of the ECOWAS Monitoring Group, ECOMOG, the peacekeeping force of the organization. What seems undeniable is that ECOWAS indeed faced enormous difficulties in achieving its objectives of restoring peace where it intervened but its military and diplomatic engagement contributed immensely to the international effort which finally helped in ending conflicts that devastated the Mano River Basin region between 1990 and 2003. ECOWAS interventions in the 1990s were, first and foremost, geared towards ending civil wars involving one or several armed rebel groups and the government of legally recognized Member State. The Assembly of Heads of State and Government were going to the rescue of one of its members facing armed rebellion. The aim was indeed to defend the legality embodied by a sitting president and government and not necessarily to defend the political standards adopted by the community like the respect of specific democratic principles or human rights. When Nigeria decided that ECOMOG should intervene in Liberia a few months after Charles Taylor's rebel movement attacked the government of Samuel Doe, neither the victim of the attack nor the Nigerian government could be described as models of democracy and respect for human rights; intervening diplomatically and militarily in cases of serious threats to the security of a Member State and within the community space in general. ECOWAS consequently played a key role in the arduous resolution of protracted and devastating civil wars in Liberia (1990-1997 and 2003-2007) and Sierra Leone (1991-2002) which sometimes spilled over into Guinea and threatened to cause unrest in the entire West African region.

ECOWAS then intervened on the diplomatic front through its mediation organs comprising Heads of State and Government of a core of Member States, and militarily by sending thousands of soldiers of the ECOWAS Ceasefire Monitoring Group drawn from the Nigerian Federal Army and other Member States of the organization. It was after several years of ECOMOG's military presence under extremely difficult material and security conditions and at the instigation of the regional military power, Nigeria that Sierra Leone and Liberia received United Nations Peacekeeping Operations. ECOMOG was indeed accused of behaving as a warring party to the conflict in Liberia and Sierra Leone or as an occupation force. However, its presence at the

height of the fighting and chaos in these two countries, when there was no peace to be maintained, played a major role in the stabilisation of the Mano River Basin region. ECOWAS was led to intervene vigorously in the management of conflict in the 1990s before establishing the institutional and operational basis of a regional mechanism for peace and security supported by the texts of the organization. Although the primary objective for the creation of ECOWAS was the attainment of regional economic development, the challenges of regional security threats have been a constant concern of ECOWAS countries. The domestic and external threats to state security and regime survival led to the signing of the 1978 Protocol on Non-Aggression and the 1981 Protocol on Mutual Assistance in Defence. Political leaders such as Leopold Sedar Senghor of Senegal had argued that 'development cannot be secured in a climate of insecurity' and that hence there was the imperative that 'we must among ourselves, establish a genuine West African solidarity pact to guard against external aggression' (Adebi, 2002:115). It was recognition of the link between regional peace, security and development that led to the establishment of the Francophone mutual defence pact, the Accord de Non-Aggression et d'Assistance en Matières de Défense (ANAD). An additional problem is that security was perceived by ECOWAS leaders in the traditional framework of military, national level-oriented, external security threats. This traditional conception of security perceived in external terms only focused on armed activities and the use, or threat of the use, of military force engineered and actively supported from outside the region, and with the potential to endanger regional peace and security. Domestic security threats from ethno-religious conflicts, bad governance, political repression and insecurity created by the states' military and security apparatus, were never considered as part of the threats to national and regional security. In effect, both the 1978 and 1981 defence and military protocols were merely 'regime protection' strategies to serve the interests of ECOWAS leaders and to 'insure' them against both external and internal security threats. These defence protocols, therefore, provided a window of opportunity to clamp down, with military assistance from Community members, on internal opposition and coup attempts and to deal with political instability or support for political dissidents in neighbouring countries. Though the case could be made that the defence protocols created the basis for ECOWAS to take on regional collective security and peacekeeping capability, it was in reality a mechanism for regime security and survival. It is in this context of external aggression and internal instability that ECOWAS leaders moved to adopt measures that will safeguard the sub-region's security. The organisation's gradual movement into security started in 1978 when ECOWAS adopted the Non-aggression Treaty which called on member states to

"refrain from the threat and use of force or aggression" against each other (ECOWAS, 1978). Critics regard this protocol as merely idealistic as it failed to provide an institutionalised response mechanism in the case of a breach. In recognition of this weakness, West African leaders ratified the Mutual Assistance on Defence (MAD) Protocol at the 1981 Summit in Freetown, Sierra Leone and it came into force in September, 1986. This protocol committed member states to 'give mutual aid and assistance for defence against any armed threat or aggression' directed at a member state and considered them to constitute 'a threat or aggression against the entire community' (ECOWAS, 1981). The protocol spelt out the circumstances requiring action. These include cases of armed conflict between two or more member states after the failure of peaceful means, and in the case of conflict within a state 'engineered and supported from outside'. It created response mechanisms which include a Defence Council, Defence Committee and a sub-regional intervention force: the Allied Armed Forces of the Community (AAFC).

However, this protocol have been criticised for its lack of effective conflict prevention, management and resolution mechanisms. Moreover it focused heavily on external threats and did not envisage a role for the regional body in the coups that destabilised the sub-region in the 1970s and 1980s, and the internal conflicts that swept through West Africa in the 1990s. Critics regard this as regime protection strategies meant to serve the interest of leaders. In addition to these limitations, the institutions provided for in this protocol were never established. A possible reason responsible for the non-implementation of this protocol lies in Francophone suspicions of Nigerian hegemonic ambitions. These suspicions were further deepened by the protocol's call for the withdrawal of foreign troops from all member states. With strong military ties with France, most of the Francophone West African states depended on their former colonial power for defence and security (Dokken, 2002).

ECOWAS Ceasefire Monitoring Group (ECOMOG) as an intervention force was established in August 1990 as a result of the Liberia conflict. The conflict started with an invasion by rebels in December 1989 and quickly spread through the entire country. By August 1990, the main rebel movement, the National Patriotic Front of Liberia (NPFL) under the leadership of Charles McArthur Ghankay Taylor, was controlling about 90 percent of the country (Scheepers 1999). It was during this time that the Liberian President Samuel K. Doe, who came to power through a military coup in 1980, called on ECOWAS to assist him to restore normalcy to his country. This request initially divided ECOWAS between its Anglophone and Francophone factions (Berman and Sam 2000). Whilst President Doe was a good friend to Nigerian President General Ibrahim Babangida, he was not on good terms with President

Houphouet Boigny of Côte d'Ivoire. What compounded the issue further was that Charles Taylor, the leader of the main rebel group (NPFL) was Houphouet Boigny's son-in-law and obviously had the support of the Ivorian president. Subsequently, during early August 1990, as mayhem loomed in Liberia, the Anglophone members of ECOWAS, under the auspices of ECOWAS Standing Mediation Committee, met in Banjul, the capital of Gambia, and decided to send a military force to intervene in the conflict in Liberia (Berman and Sam 2000, 85).

On August 7, 1990, the ECOWAS Standing Mediation Commission ("Commission") agreed to establish an ECOWAS Ceasefire Monitoring Group (ECOMOG) in Liberia to halt the "wanton destruction of human life and property and massive damage being caused by the armed conflict to the stability and survival of the entire Liberian nation." ECOMOG was mandated to "restore law and order to create the necessary conditions for free and fair elections." On August 24, ECOMOG entered Liberia to forestall the killing, restore law and order, and prevent the state from descending into further anarchy. The NPFL, which by then controlled approximately 90 percent of the country, abducted and attacked ECOMOG forces upon their entry into the country.

ECOWAS Mechanisms for Conflict Prevention, Resolution and Management in West Africa Sub-region  
It was in 1999 in Lome that the Heads of State and Government of ECOWAS adopted the Protocol relating to the Mechanism for Conflict Prevention, Management and Resolution, Peacekeeping and Security. According to the Protocol "the Assembly of Heads of States shall be the highest decision making body on issues relating to conflict prevention, management and resolution, peacekeeping and security, humanitarian support, peace building, control of cross-border crime, proliferation of small arms as well as other issues covered by the provisions of the Mechanism". But the Assembly shall delegate to the Mediation and Security Council the power to take on its behalf decision for the appropriate implementation of the provisions of the Mechanism". The Mediation and Security Council (MSC) comprises nine member states with seven elected by the Assembly, and the two other members being the current chairperson and the immediate past chairman. Members of the MSC can serve for a two-year renewable term.

The Council of Elders is made up of eminent personalities who can, on behalf of ECOWAS, use their good offices and experience to play the role of mediators, conciliators and facilitators. These personalities "coming from various segments of society, including women, political, traditional and religious leaders" are proposed on a list approved by Mediation and Security Council at the level of Heads of State and Government. These personalities are called upon when

the need arises by the Executive Secretary or the MSC to deal with a given conflict situation.

With regard to ECOMOG, it is a structure made up of several multi-purpose units (civilian and military) on stand-by in their country of origin and ready to be deployed in due course. ECOMOG conducts among others observation and peace monitoring missions, peacekeeping and restoration operations, humanitarian action support missions, missions to monitor the enforcement of sanctions, including embargos, preventive deployments, peace building operations, disarmament and demobilization, policing activities to fight fraud and organized crime and any other operations that may be ordered by the CMS.

The ECOWAS Mechanism includes finally a sub regional peace and security observation system known as "early warning" or "the system". This system is made up of an observation and monitoring system based at the headquarters of ECOWAS as well as monitoring and observation zones. Information gathered in each of these zones are transmitted to the observation and monitoring centre in Abuja to enable the Department of Political Affairs Peace and Security to anticipate and react promptly to potential crisis situations.

ECOWAS has shown its determination to increasingly guide its member states through new political and institutional standards aimed at promoting peace, security and stability in the region by formulating the "Supplementary Protocol on Democracy and Good Governance to the Mechanism for Conflict Prevention, Management and Resolution of Conflicts, Peacekeeping and Security". Adopted by the Heads of States and Government on 21st December 2001, the Supplementary Protocol is meant to complement that of 20th December 1999 on "internal crisis prevention, democracy, good governance, rule of law and individual rights" and bring the necessary improvements to the Mechanism. This Protocol establishes therefore a clear and direct link between the observance of democratic and good governance standards in member states and peace as well as security prospects, which is undeniably an improvement in the security culture within the West African community space.

The Protocol defines the constitutional principles common to all member states of ECOWAS, including the separation of executive, legislative and judiciary powers; empowerment and strengthening of Parliaments; independence of the judiciary; prohibition of any unconstitutional change as well as any undemocratic mode of acceding to, and maintaining power. The Supplementary Protocol also defines a series of principles concerning elections in member states as well as the observation and support role of ECOWAS during elections.

The Mechanism for Conflict Prevention, Management and Resolution, Peacekeeping and Security as defined by the initial Protocol of December

1999 and complemented and amended by the Supplementary Protocol of 2001 enabled ECOWAS to legitimize and further structure its interventions in emerging or existing political crisis in member states. ECOWAS at the level of the Assembly of Heads of State and Government and also at the level of the Executive Secretariat (now the Commission) had to make pronouncements on the quality of electoral processes in a number of member countries as well as unconstitutional means of accession to power in a number of countries like the situation in Togo after the demise of President Gnassingbe Eyadema (2005).

The armed conflict in Cote d'Ivoire, the second economic power in the community (September 2002), the return of the civil war in Liberia before Charles Taylor's exile in August 2003, the search for stabilisation in Sierra Leone, the deterioration of the political and economic situation in Guinea, the 2005 elections in Guinea Bissau as well as permanent political and military tensions in this country against the backdrop of rising international drug trafficking, hardly gave a respite to ECOWAS organs and immediately put to test the ambitions of the Mechanism. The need for coordination of the Mechanisms for conflict prevention and resolution between ECOWAS and the AU, which is undergoing fundamental changes, and the UN present through its peacekeeping and peace building missions and its Office for Africa, has become evident. The transformation of the Executive Secretariat into ECOWAS Commission came into effect in January 2007 and has strengthened the visibility and supranational character of the organization.

While there are reasons to question how effectively ECOWAS' stated principles translate from theory to action, ECOWAS has undeniably been very active in promoting regional security. Since the adoption of the Protocol, ECOWAS has overturned military coups in Sierra Leone (1998), Guinea-Bissau (2003), and Togo (2005), and negotiated the departure of Charles Taylor from Liberia. Operationally, ECOWAS has deployed two peace operations: the ECOWAS Mission in Côte d'Ivoire (2003) and the ECOWAS Mission in Liberia (2003).

## II. THEORETICAL FRAMEWORK

This study is essentially anchored on neo-functionalism. Neo-functionalism of Ernst B. Haas unlike functionalism of David Mitrany is non-normative and describes or explains the process of regional integration based on empirical data. Aside being empirical, neo-functionalism unlike functional theory does not focus primarily on global integration rather its primary concern is on regional integration. In other words, functionalism and neo-functionalism are both theories of supranationalism, but while the former emphasizes global supranationalism, the latter reifies regional supranationalism (Echezona, 1998; Burchill & Linklater, 2005).

Neo-functionalism is a theory of regional integration in which integration is considered to be an inevitable process, rather than a desirable state of affairs that could be introduced by the political or technocratic elites of the involved states.

There are three main principles of neo-functionalism;

1. The principle of positive spillover effects states that integration between states in one sector, that is, economic sector will eventually ramify into integration or co-operation in other sectors such as political, socio-cultural, security, etc.
2. The mechanism of a transfer in domestic allegiance which assumes that as the process of integration gathers momentum in an increasingly pluralistic domestic society of each state; interest groups and other associations will transfer their allegiance or loyalty away from national institutions towards the supranational institution(s) when they begin to realize that their material interests or well being can be better pursued through supranational institution(s) than the pre-existing national institutions; and
3. Principle of technocratic automaticity which states that as integration hastens the supranational institution(s) will take the lead in fostering further integration as they become more powerful and more autonomous of the member states (Echezona, 1998; Haas, 1970).

These three main principles of neo-functionalism embody John Galtung's Staircase Hypothesis/Strategy which involves the process of beginning with limited domain (or memberships) and limited scope (or sectors or area of cooperation) and gradually deepening the scope before extending the domain. Deepening the scope means moving from the initial areas of cooperation to other areas of cooperation or bringing in new sectors, whereas, extending the domain means admitting new memberships.

### a) *Background to ECOWAS Intervention in Mali*

When a State interferes in the political affairs of another State by invitation, or on request, it cannot be considered as an unlawful act. Interference of a State can never be unlawful if it is for the sake of humanity. It is necessary that the two States agree on the matter of intervention through a treaty. A request for assistance is not an unlawful act. Intervention can be done by various means, e.g. military, subversive, economic, or diplomatically. ECOMOG as an intervention force was established in August 1990 as a fallout of Liberian conflict. It should be noted that ECOWAS in its origin was meant to foster economic integration, and only became involved in conflict resolution and peacekeeping interventions by default. Thus, in the last two decades, ECOWAS has played a significant role in resolving

conflicts in the region (Olonisikan, 2010). The Economic Community of West African States (ECOWAS) has emerged as the most developed and complex sub-regional organization in Africa. It was originally established as a regional integration and cooperation grouping on May 28, 1975 with customs union and common market objectives. ECOWAS comprises fifteen countries at different levels of development and at diverse stages of state formation and nation building which includes Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Guinea, Guinea Bissau, Ghana, Niger, Nigeria, Senegal, Sierra Leone, Liberia, Mali and Togo. Although the primarily objective for the establishment of ECOWAS was the attainment of regional economic integration and development, the challenges of regional security threats have been a constant concern of ECOWAS countries. Perhaps in recognition of the domestic and external threats to state security and regime survival, and the link between regional peace, security and development that some member countries signed the 1978 Protocol in Non-Aggression and 1981 Protocol on Mutual Assistance in Defence. It has been argued that development cannot be secured (Francis, 2009). Yet these two protocols mainly addressed matters of inter-state conflicts and empower ECOWAS to intervene only in cases of externally aggression (Suifon, 2005; Levitt, 2008). However, the Liberian crisis which began in 1989 represents a critical stage in ECOWAS' transition into regional security organization. Confronted with unprecedented scale of human suffering and international disengagement from African conflicts in the post-Cold War era, and with no international organization to respond rapidly to the conflict, ECOWAS was forced to device ad hoc security mechanisms. In May 1990, ECOWAS established a Standing Mediation Committee (SMS) charged with the responsibility of peacefully resolving the conflict. The SMS was to later create a body for peacemaking mission into Liberia known as ECOWAS Ceasefire Monitoring Group (ECOMOG), and thus, approved military intervention into Liberian Civil War (Kabia, 2011).

Subsequently, ECOMOG was instrumental in implementing ECOWAS military intervention in the 1990s; and 2000s, over two decades of peacekeeping and military intervention in the West African sub-region (Agypong, 2005). Going by the treaty which establishment ECOWAS in 1975, the main aim was to spur economic integration and development in West Africa. Regional security was an important but not as vital or primary concern. Neither the treaty nor the protocols empowered it to launch peacekeeping missions or intervene militarily in internal affairs or conflicts of member countries. But owing to international inaction, ECOWAS intervened unilaterally without UNSC's authorization in Liberian Civil War to halt the conflict (Levitt, 2008). ECOWAS which was founded in 1975 as an economic umbrella organization for

economic development and integration, had to grapple with the plethora of conflicts in the sub-region in the 1990s and 2000s, which have sapped its energy and resources meant for economic integration and development. On May 9, 1990, ECOWAS went ahead to set up a Five-Member Consultative Group on Liberia, appointed as Standing Mediation Committee (SMS) made up of four Anglophone countries, Ghana, Nigeria, Sierra Leone and Gambia and one Francophone country, Guinea, and Chaired by Gambia. The Consultative Group was further charged with the task of maintaining peace and security in the sub-region a mandate that transcended the Liberian conflict. The SMC held their first meeting with the Liberian warring factions in Freetown in July 1990. Due to collapse peace talks, the final communiqué of the Summit of Heads of State and Government resulted in the creation of ECOWAS Monitoring Group (ECOMOG) in August 1990 (Suifon, 2005). On March 21, 2012, the Malian coup d'état began when mutinying Malian soldiers displeased with the management of the Tuareg rebellion attacked several locations in Bamako including the presidential palace, state television, and military barracks. The soldiers who claimed they had turned the National Committee for the Restoration of Democracy and State, declared the following day that they had overthrown the government of Amadou Toumain Toure forcing him into hiding. The coup was followed by spectre of international condemnation, harsh sanctions by Mali's neighbours and the swift loss of Northern Mali to Tuareg forces. On April 6, 2012, the junta agreed with ECOWAS negotiators that they would step down from power in return for the end of sanctions, to give power to transitional government led by parliament Speaker Dioncounda Traore. In the following days, both Toure and coup leader Amadou Sanago formally resigned, however, as of May 16, 2012, the junta was still widely believed to maintain overall control. On March 23, 2012, the African Union (AU) suspended Mali, which would remain until "effective restoration of constitutional order is achieved without delay". On this day, a joint African Union and ECOWAS diplomatic mission met representatives of the junta for talks and negotiations. On March 26, 2012, the President of United States, Barrack Obama, formally suspended aid the Mali, stating that it would only resume when democracy was restored. The next day, March 27, 2012, the Ivorian President Alassane Quattara called on an ECOWAS meeting in Abidjan to send a "strong signal" to the mutinous soldiers that democracy must be restored, and return to democracy as non-negotiable. Even Kadre Desire Quedraogo, the head of the ECOWAS Commission, described the coup as a "threat to entire region". Following the meeting, ECOWAS placed peacekeeping troops on standby, hinting a possible military intervention. On March 29, 2012, ECOWAS announced that the junta had 72 hours to return power

to constitutional authorities, or Mali would face the closure of its land borders and freezing of its assets in ECOWAS member countries. On March 30, 2012, Sanogo reiterated his promise to hold elections in response to ECOWAS position but refuses to release a timetable. On April 1, 2012, Sanogo in trying to meet one of the ECOWAS demands, announced that the CNRDR would reinstate Mali's previous constitution and begin to organize free, open and democratic elections which the junta will not participate in. On April 2, 2012 after the junta failed to meet the ECOWAS deadline for relinquishing power, severe sanctions against Mali began. For example, the Mali's accounts in the Central Banks of West African states were frozen and Mali's land borders were closed. On April 3, 2012, the UN Security Council began work on a resolution backing the ECOWAS sanctions against the junta. The US and the African Union joined ECOWAS in announcing travel ban on the coupists. Sanogo stated that a "national meeting" would be held on April 5 to decide "what will be the best for the country in a consensual democratic fashion" On April 4, 2012, the UNSC made strong condemnation of the forcible seizure of power from the democratically elected government and again called for the immediate restoration of constitutional democracy and for the preservation of the electoral process. The ECOWAS began planning of a military intervention against junta and the Tuareg rebels the following day, April 5, 2012. France declared its support for military intervention by ECOWAS pledging to help on logistics. On April 6, 2012, the MNLA or the Tuareg rebels "irrevocably" the independence of Azawad from Mali. The African Union (AU) and the European Union (EU) condemned the declaration, the former declaring it "null and of no value whatsoever". Later in the day, ECOWAS and the coup leaders reached an agreement on a transition of power and lifting of sanction, under which National Assembly of Mali Speaker Dioncounda Traore would become interim president and oversee new elections. Under the terms of the agreement, the mutinying soldiers will be given amnesty for their participation in the coup. On April 8, 2012, Amadou Toumani submitted his formal resignation from the presidency to ECOWAS mediators and Amadou Sanogo resigned shortly after. On April 9, 2012, Mali's constitutional court met to determine the interim president, announcing that Dioncounda Traore can assume the presidency for up to 40 days in order to organize elections. On April 12, 2012, the coup leaders formally handed power to Traore, and the imprisoned ministers and aides from Toure's Administration were released. On his inauguration, Traore pledged to "wage a total and relentless war" against the Tuareg rebels unless they surrendered their control of Northern Malian cities. On April 17, 2012 it was announced that Cheick Modibo Diarra has been appointed interim prime minister to help restore civilian rule. The new civilian government comprising 24 ministers was announced

on April 25, 2012, three of which defence, interior and internal security are form military and considered to be close to the coup leaders. Sanogo stated that the junta would continue to play a supervisory role in the transition. On April 29, 2012 ECOWAS announced a deadline of a 12 month transition until presidential and legislative elections, and that ECOMOG troops would be deployed to Mali to ensure a peaceful transition. Sanogo stated that his government would reject both decisions. On April 30, 2012, following the report that the leaders of the presidential guard would be arrested by the junta, they assaulted OTRM offices and other locations in Mali in an apparent attempt at counter coup, exchanging fire with junta soldiers. The junta seized control of the primary base of anti-junta soldiers, effectively ending the counter coup. On May 15, 2012, ECOWAS released a statement accusing the junta of blocking the return to civilian rule and threatening to re-impose sanctions. On May 21, 2012, soldiers allowed a group of pro-coup demonstrators into Traore's office in Bamako who attacked and knocked him unconscious (Akuetteh, 2012; Charbonneau, 2012; Control Risks, 2012; UN Integrated Regional Information Networks, 2012; Sanders, 2012; Sneider, 2012).

#### b) *Background to ECOWAS Intervention in Guinea Bissau*

The 2012 ECOWAS intervention into the conflict in Guinea Bissau is not the first time ECOWAS is intervening in Guinea Bissau. In 1998, ECOWAS or rather ECOMOG intervened in Guinea Bissau to quell the rebellion and restore power to the President Bernardo Vieira (Agyapong, 2005). It is important to state the intervention was at the request of the president (Levitt, 2008; Francis, 2009; Olunisakin, 2010; Yabi, 2010).

However, following the military unrest in 2010 and a failed coup attempt in 2011 due to infighting in the military between the Navy and the Army, the country was once again plugged into political instability. After the death of Malam Bacai Sanha on January 9, 2012, a new presidential election was scheduled to be held within 90 days in line with the constitution. Despite a peaceful campaign there were fears of possible violence or a coup d'etat if the army did not approve of the winner. On April 12, 2012 following the first round of a presidential election, elements of the armed forces staged a coup d'etat in Guinea Bissau, just over two weeks before the second round between Carlos Gomes Junior and Mohamed lala Embalo.

On April 15, 2012, an agreement was reached to set up an interim National Transitional Council with a majority of opposition parties and the military. On April 12, 2012, gunfire was initially reported in the night as mutinous troops attempted to overthrow the government by seizing control of the entire capital, and heavy automatic gunfire and mortar explosions. The former

prime minister and presidential candidate Carlos Gomes Junior and interim President Raimundo Perreira were feared or reported missing. The mutineers or coupists seized control of the offices of the incumbent PAIGC and radio stations as well as fighting police officers loyal to the government who were forced to retreat. The soldiers also blocked the roads into and out of the capital city and the national radio and television was taken off air by the night of the same day.

The main target was reportedly Gomes Junior's residence which was surrounded by troops. Gomes house was attacked by grenades with gunfire reportedly occurring nearby. The soldiers also looted the house of the head of the national election commission, Desejado Lima da Costa. The soldiers sealed off the embassies to prevent government officials from fleeing and hiding with foreign diplomats, and several politicians were arrested. At dawn, people began to venture out of their home and there appeared to be little or no presence of soldiers on the streets. Still an "unusual" quiet was reported in the capital city, either the government or the coup leaders. Soldiers were however, reported to be standing guard outside radio and television stations in the Bissau including the state-run television office and the presidential offices. An overnight curfew was imposed the following day with orders for the members of the civilian government to turn themselves over to the army. Private radio stations or media houses had also been shut down.

The coupists formed the "Military Command" under the leadership of the army's vice chief of staff, General Mamadu Toure Kuruma and put forth conditions for a national unity government after announcing the ouster of Gomes Junior along with the interim president Raimundo Pereira and the army's chief-of-staff, General Antonio Indjai. Senior officers of the army subsequently met the leaders of the political parties and called on them to form the transitional government, but added that the army would control the defence and interior ministries. The meeting was attended by Antonio Indjai, Ture Kuruma, the heads of the army, air force and navy, the army's spokesman, lieutenant Colonel Daha Bana na Walna and four colonels, but no one from the incumbent PAIGC attended. The army's chief-of-staff, General Antonio Indjai was later arrested after attending the meeting.

The five leading opposition candidates including lala Embalo, announced at a joint news conference that the boycott of the second round of the election was in the name "justice". Agnela Regalla Regala of Union for Change, one of the attendees said that "the military chiefs suggested the idea of new presidential and legislative elections". The spokesman for the coalition of opposition parties, Fernando Vaz, said that discussion continued for a third day and the PAIGC has been invited to participate. After the meeting the coalition had said it agreed upon a set of proposals

to put forward to the Military Command for a transitional unity government.

The PAIGC reportedly rejected the transitional unity government and any anti-constitutional or anti-democratic proposal of a solution to the crisis, while also calling for the release of the detainees. On April 15, 2012, a demonstration of about 30 people at the National Assembly, where talks on a transitional government were ongoing, was dispersed by soldiers. The National Union of Workers of Guinea Bissau, which has a membership of about 8,000 mostly civil servants, called a general strike the next day.

On April 16, 2012, an agreement, which deliberately excluded PAIGC, was reached with 22 of the 35 opposition parties to set up a National Transition Council. The composition and mandate period was to be determined the next day in concert with the Military Command. The existing institutions were also to be dissolved, and in their place two committees would run the country, one would manage foreign affairs and the other would handle social affairs. Thereafter, it was agreed that the transitional civilian government will rule for about two years before new elections will be held. The National Assembly Speaker, Manuel Serifo Nhamadjo, who had previously rejected the office of president in April 2012, was again selected as an interim president on May 11, 2012, only for one year.

ECOWAS formally condemned the coup in Guinea Bissau and described the coup as unacceptable. According to statement issued by the President of ECOWAS Commission, Kadre Desire Ouedraogo read: "The Commission firmly denounces this latest incursion by the military into politics and unreservedly condemns the irresponsible act, which has once more demonstrated their penchant to maintain Guinea Bissau as a failed state". ECOWAS later decided to send a military contingent to provide security for the run-off election or second round of the election which it insisted must go ahead.

The ECOWAS has imposed diplomatic, economic and financial sanctions on Guinea Bissau after talks in Banjul between foreign ministers of the regional Contact Group and Guinea Bissau's political stakeholders failed to reach an arrangement to return the country to the path of constitutional and democratic rule within a year. The sanctions which became effective also target member of the junta that seized power on April 12, 2012 and their associates or cronies. The coup disrupted the political process to elect a replacement for the late president, Bacai Sanha who died in January 2012.

The Seven-Nation Contact Group of Benin, Cape Verde, Gambia, Guinea, Senegal and Togo chaired by Nigeria was set up by the extraordinary summit of regional leaders on April 26, 2012 in Abidjan, Cote d'Ivoire to follow up the decisions of the summit in resolving the current political impasse in Guinea Bissau.

The Abidjan extraordinary summit denounced the coup the attempt by the Military Command to foist a political arrangement on the country through the formation of a National Transition Council which the regional leaders condemned as unconstitutional and vowed not to recognize it in line with the region's zero tolerance for unconstitutional accession to power.

The Summit also authorized the deployment of a contingent of regional Standby Force to replace Angolan troops in Guinea Bissau. The Summit thereafter issued a 72-hour ultimatum to the junta to submit a mediation process for a consensual transition arrangement that will result in restoration of constitutional democracy. The Contact Group concludes that "it was fruitless to continue as it become obvious that the head of the military junta was not willing to negotiate and clearly prefers to face the consequences".

c) *Legitimacy Crises and ECOWAS Intervention in Mali and Guinea Bissau*

The ECOWAS Authority of Heads of State and Government in its Extraordinary Session held in Dakar, Senegal on May 3, 2012 under the Chairmanship of Alassane Quattara, President of the Republic of Cote d'Ivoire and Chairman of the Authority strongly condemns the clashes that began on April 30, 2012 in Bamako, and deplores their adverse impact on life and security of the Malian population. In the communiqué, the Summit requests the transitional authority to expedite action on the development of the roadmap for the transition, with set timelines for activities such as adoption of legislative organizational and operational measures. All these leading to the holding of presidential elections and full restoration of constitutional order including the establishment of a consultative framework on critical issues relating to the implementation of the transition with the facilitation of the mediator. The Authority renews its call on the Malian Armed forces to dedicate themselves to the republican responsibility of protecting the territorial integrity of the country and the population. It reminds all the parties that any attempt from any quarters to destabilize the transition process shall be liable to targeted sanctions as set out in the Summit Decisions of March 29, 2012. The Authority instructs the ECOWAS Commission to transmit this Decision to the Peace and Security Council of the African Union, the UN Security Council, and other partners to seek their support on the matter. The Authority, in the Summit, instructs the Commission to hold the ECOWAS Standby Force (ESF) in readiness for immediate deployment as soon as the Malian authorities make the relevant request. In line with this, Authority instructs the Commission to define the modalities for military cooperation between the Malian Army and ESF in view of the deployment. Authority as well instructs the Commission to establish contact with all development partners to ensure their participation in the effective and

rapid financing of the intervention. In the case of Guinea Bissau, the Authority commends the release of the Prime Minister, Carlos Gomes Junior and the Interim President Raimundo Pereira on April 27, 2012, and demands that the Military Command release all other personalities still detained illegally. The Authority reiterates its firm condemnation of the coup d'etat on April 12, 2012 and recalls its principle of "zero tolerance" for power obtained or maintained by unconstitutional means. Thus, the Summit reiterates its demand for an immediate return to constitutional order. The Authority confirms its previous decision to establish a twelve-month transition during which the following measures shall be taken with the assistance of ECOWAS. A review of legal texts such as constitution, electoral act, etc, to achieve greater efficiency; the reform of the defence and security sector and other reforms with a view to preparing the ground for the holding of fresh elections to choose a substantive president by the end of the transition. The Authority recommends that to conduct the transition within the framework of the constitution, the National Assembly renews its leadership through vote, whereby the new Speaker of the National Assembly thus elected shall assume the responsibility of Interim President. The new Deputy Speaker thus elected shall become the Speaker of the National Assembly. A consensual Prime Minister with full powers shall be designated to lead a broad-based government that shall lead the transition to its conclusion. The Interim President and the transitional Prime Minister shall not be eligible to contest in the envisaged presidential election. The tenure of the members of the National Assembly shall be extended through the appropriate mechanisms to cover the transitional period. Authority decides that the ECOWAS Standby Force (ESF) in line with the new approved mandate shall be deployed to secure the withdrawal of the Angolan Technical Assistance Mission (MISSANG); to ensure the security of the transition, and help in the implementation of the Defence and Security Reform programme The Authority directs the ECOWAS Commission to seek the assistance of the African Union (AU) and the international community for the implementation of the measures to be taken in Guinea Bissau. The Summit also decides to maintain the sanctions imposed until such time that all the protagonists or dramatic personae accept the modalities for a return to constitutional order. The Authority, thus, mandates the regional Contact Group to take on its behalf, all urgent necessary measures for the application of its decision (ECOWAS, 2012). Yet despite these interventions from ECOWAS in Mali and Guinea Bissau, the crises are not resolved. These have been evidence of supports from the people or pro-junta demonstrations. The military intervenes mainly because of the mis-governance of the civilian democratic government. The result of these bad leaderships or poor

governance or political leadership failure is crises of legitimacy.

We thus, conclude that the legitimacy crises suffered by the ousted democratic governments hinders ECOWAS intervention for democratization in Mali and Guinea Bissau.

d) *Militarization, Poor Governance and ECOWAS Intervention in Mali and Guinea Bissau*

The militarization in Africa, West Africa and Mali and Guinea Bissau to be specific is as a result of many years of failure of political leadership and misgovernance by the political class. Right from the independence, politics in most African states including Mali and Guinea Bissau have been characterized by poor governance, bad leadership, political succession crisis, legitimacy crisis, electoral and political violence. The result of these is the militarization of the society through military foray or incursion into politics and consequently political crisis and instability.

Expectedly too, these African states inducing Mali and Guinea Bissau have not fared well in economy either. Poor or weak economy plundered by many years of political corruption, embezzlement, mismanagement and misappropriation of public fund or commonwealth has resulted to poor human development indexes, low life expectancy, low literacy, high mortality rate, poor standard of living, low per capital income, mass unemployment, abject poverty, low GDP, etc .

Due to crisis of legitimacy, there had been little or no resistance from the populace in the military incursion into politics. Some saw it as relief while others saw it as better alternative. The people have not enjoyed any viable or meaningful democracy dividend from civilian government and have been disenfranchised through electoral rigging and malpractices. In most cases like in the cases of Mali and Guinea Bissau, the military intervene whenever there is unresolved electoral contest or election leading to electoral and political violence in form of pre-election, election and post-election violence.

It is this excessive militarization coupled with legitimacy crisis or lack of confidence on the democratic process that frustrates ECOWAS efforts to demilitarize and democratize Mali and Guinea Bissau. People have lost faith in their political leaders and the political elites. The military has ended up being worse than the civilians they ousted from power. The people do not know whom to trust anymore. In fact they do not know the difference between the two. The common thing between the two is bad leadership or poor governance. The political leadership has failed to unite the people but rather exploit and emphasize their divisions leading to ethnic and religious conflicts.

The military intervention by ECOWAS has not been totally successful in quelling conflicts, crisis of regime change and political succession and military

intervention into politics in the West African sub-region and the Africa generally. The latest of these conflicts in the sub-region which ECOWAS has intervened are Mali and Guinea Bissau in 2012. The objective has been to restore democracy by forcing the military back to the barracks or restricting it to the constitutional role of protecting the territorial integrity from internal insurrection and external aggression.

But the root causes of military intervention into politics and crisis of regime change or political succession are yet to be adequately addressed by the ECOWAS, for example, issues of legitimacy crisis, poor governance, bad leadership, political leadership failure, political corruption, electoral crisis and political violence have been largely left unattended or ignored. The political conditions in most of the countries in the sub-region and indeed Africa as a whole are not democracy friendly or unsuitable for democratization and flourishing of democracy or demilitarization (Aning and Bah, 2010; Sperling, 2011).

e) *ECOWAS Intervention and Demilitarization in Mali and Guinea Bissau*

ECOWAS promptly intervened in the conflicts in Mali and Guinea Bissau with little or no success. The fact remains that the political elites in those two countries have long alienated their people. They have not only alienated their people, but have also used ethnic and religious sentiments to make themselves relevant in politics and in some cases perpetrate themselves in political offices. The incursion or meddling of military into politics has not helped matters, but rather militarized the society the more. Guinea Bissau particularly had endured many years of political instability owing to excessive militarization.

The point is that poor governance or bad political leadership by the ousted democratic regimes in Mali and Guinea Bissau resulted to excessive militarization when the military decided to intervene into politics. ECOWAS intervened to restore democracy by demanding the military to withdraw to the barracks for a transition programme into democracy. The processes of democratization and demilitarization are not, totally or completely successful. Thus, militarization resulting from poor governance of the ousted democratic governments impeded or constrained ECOWAS intervention for demilitarization of Mali and Guinea Bissau.

### III. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

a) *The Summary*

We started by dwelling on all the technically in the chapter one, where we posed four research questions, stated four specific objectives, and four research hypotheses. We, also, demonstrated the theoretical and empirical relevance or justifications of this study. The issues, time frame and subjects covered

by the study were also highlighted. The main concepts or terms used in this study were operationalized or defined as they are applied or used in this study.

In the chapter two, we reviewed the related extent and relevant literature concerning the role of ECOWAS in conflict prevention, resolution, management and military intervention; and ECOWAS mechanisms for conflict prevention, resolution and management in West Africa sub-region. We also predicated the study on neo-functionalism. In Chapter Three, we looked into background to legitimacy crisis and ECOWAS intervention in Mali and Guinea Bissau like background to ECOWAS intervention in Mali; background to ECOWAS intervention in Guinea Bissau; and legitimacy crises and ECOWAS intervention in Mali and Guinea Bissau.

Whilst, in Chapter Four we examined militarization and ECOWAS intervention in Mali and Guinea Bissau like militarization, poor governance and ECOWAS intervention in Mali and Guinea Bissau; and ECOWAS intervention and demilitarization in Mali and Guinea Bissau. Lastly, in Chapter Five, we summarized the entire work and drew some conclusions on the basis of which we made some recommendations.

#### b) *Conclusions*

In the course of this study, we reach the following conclusions:

1. That the legitimacy crisis suffered by the ousted democratic regimes hinders ECOWAS intervention for democratization in Mali and Guinea Bissau.
2. That the militarization resulting from poor governance of ousted democratic governments impedes ECOWAS intervention for demilitarization of Mali and Guinea Bissau.

#### c) *Recommendations*

In the course of this study therefore, we recommend the following:

1. That there is need for confidence building measures to enhance ECOWAS intervention for democratization in Mali and Guinea Bissau
2. That there is need for public enlightenment to achieve successful demilitarization of Mali and Guinea Bissau by ECOWAS.

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## Carbon Emission and Economic Growth of SAARC Countries: A Vector Autoregressive (VAR) Analysis

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*Abstract-* This paper examines the causal relationship between carbon ( $\text{CO}_2$ ) emissions and economic growth in seven SAARC countries using time series data for the period from 1972-2012. We applied Vector Error Correction Modeling (VECM) approach. We have also applied Augmented DickeyFuller (ADF) and Phillips-Perron (P.P) test and Johansen's cointegration approach to check time series properties and cointegration relationship of the variables. Results exhibit a cointegration relationship between environmental pollution and economic growth. Results also show that the estimated coefficients of ( $\text{CO}_2$ ) emissions have positive and significant impacts on GDP in the long run. These results will help the environmental authorities to understand the effects of economic growth on environment for degradation and manage the environmental problems using macroeconomic methods.

*Keywords:* SAARC, emission, GDP, causality, VECM.

*GJHSS-E Classification :* FOR Code: 910103



*Strictly as per the compliance and regulations of:*



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# Carbon Emission and Economic Growth of SAARC Countries: A Vector Autoregressive (VAR) Analysis

Mirza Md. Moyen Uddin <sup>α</sup> & Dr. Md. Abdul Wadud <sup>σ</sup>

**Abstract-** This paper examines the causal relationship between carbon ( $CO_2$ ) emissions and economic growth in seven SAARC countries using time series data for the period from 1972-2012. We applied Vector Error Correction Modeling (VECM) approach. We have also applied Augmented Dickey-Fuller (ADF) and Phillips-Perron (P.P) test and Johansen's cointegration approach to check time series properties and cointegration relationship of the variables. Results exhibit a cointegration relationship between environmental pollution and economic growth. Results also show that the estimated coefficients of  $CO_2$  emissions have positive and significant impacts on GDP in the long run. These results will help the environmental authorities to understand the effects of economic growth on environment for degradation and manage the environmental problems using macroeconomic methods.

**Keywords:** SAARC, emission, GDP, causality, VECM.

## I. INTRODUCTION

South Asian Association for Regional Cooperation (SAARC) consists of eight countries<sup>1</sup> which are characterized by relatively high densities of population, low per capita income and literacy rate, and unplanned use of technology in various sectors that causes environmental degradation. Conventional wisdom is that higher economic growth requires huge energy consumption which causes emission of higher level of  $CO_2$  and this in turn deteriorates environmental pollution and threatens the sustainability of environment. Now a day's climate change and global warming have attracted considerable attention worldwide.

Many scholars carried out theoretical and empirical researches on relationship between carbon dioxide emissions and economic growth from the view of EKC hypothesis and decoupling theory. This article will focus on relationship between SAARC carbon dioxide emissions and economic growth during the period of 1972-2012, mean while applying Vector Auto

Regression (VAR) theory to analyze changes of SAARC environmental pressures in the process of economic growth.

Emissions account for the largest share of total greenhouse gas emissions which are most largely generated by human activities (World Bank, 2007). Rapid increase of emissions is mainly the results of human activities due to the development and industrialization over the last decades. It is highly dependent to the energy consumption which is inevitable for economic growth.

Chebbi and Boujelbene (2008), Hatzigeorgiou et al. (2013), Shaari et al. (2012), Ozturk and uddin (2011), Boopen and Harris (2012), Ong and sek (2013), Tiari (2011), Böhm (2011), Wahid et al. (2013), Dantama and Inuwa (2012), Amin (2012), Nain (2013), Dhungel (2008), Muhammad and smile (2012), Jinke and Zhongxue (2011), Noor and Siddiqi (2010), found causal relationship between energy consumption,  $CO_2$  emission and economic growth by applying cointegration and vector error correction econometric model.

McKinesy Global Institute, (2008) analyzed that the successful actions on solving climate change problems should meet at least two conditions, (i) curb the increase of global carbon emissions effectively and (ii) this actions of solving global warming problem should not at the expense of declining economic development and people's living standard. Kaplan et al.(2011) found that the coefficients of the ECT terms for all models are statistically significant implying the long-run bi-directional causal relationship between energy and GDP shows that the higher the level of economic activity the higher the energy consumption and vice versa. The intergovernmental panel on climate change (IPCC, 2007) reported a 1.1 to 6.4 c increase of the global temperatures and a rise in sea level of about 16.5 to 53.8 cm by 2100. This would have tremendous negative impact on half of the world's population lives in coastal zones (Lau et al., 2009). In this respect most of the SAARC countries situated in coastal areas and for the global warming it has the vast and negative impact of climate change on SAARC countries.

One of the crucial elements for continuous economic growth, it needed to consumption of more

<sup>1</sup> These countries are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

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energy that generates huge amounts of  $CO_2$ . Several studies emerged in this regard. Bloch, et al. (2012) found that there is a unidirectional causality running from coal consumption to GDP both in short and long run under supply side analysis and bi-directional causality under demand side analysis between the variables in China. Jalil and Mahmud (2009) found a unidirectional causality running from economic growth to  $CO_2$  emissions in China. Andreoni, and Galmarini (2012) researched the decoupling relationship between economic growth and carbon dioxide ( $CO_2$ ) emissions in Italian by the way of making a decomposition analysis of Italian energy consumption. Holtz-Eakim and Selden (1995) found that there is a diminishing marginal propensity to emit as economies develop. Bhattacharyya and Ghoshal (2009) analyzed that the inter relationship between the growth rates of  $CO_2$  emissions and economic development is mostly significant for countries that have a high level of  $CO_2$  emissions and pollution. Asafu-Adjaye (2010) found in a study on economic growth and energy consumption in four Asian developing economies that a combination of unidirectional and bidirectional causality between the variables. Hye and Mashkour (2010) found bidirectional causality between economic growth and environmental sustainability. Apergis and Payne (2009) examined the relationship between  $CO_2$  emissions, energy consumption and output in Central America and they found unidirectional causality from energy consumption and real output to emissions in the short run but there appears bi-directional causality between the variable in the long run.

This study designed to evaluate the causal relationship between  $CO_2$  Emission and GDP growth in SAARC countries applying vector error correction modeling approach covering a period of data from 1972-2012 and suggest some policies to policy makers.

## II. DATA AND THEORETICAL ISSUES

### a) Data

This paper uses annual time series data of real per capita GDP and  $CO_2$  emissions covering the period from 1972 to 2012 for the seven SAARC countries-Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. Real per capita GDP is taken as US dollar (\$) and  $CO_2$  emissions variable is metric tons per capita. The data have been obtained from online version of World Development Indicators, the World Bank.

### b) Theoretical Issues

This paper analyses the relationship between the long run causal relationships of economic growth

and  $CO_2$  emission in SAARC countries. The hypothesis tests in this paper is whether  $CO_2$  Emission is related to the economic growth. We can express the relationship applying the following functional form between  $CO_2$  emission and economic growth (GDP) as follows:

$$CO_2 = f(GDP) \quad (1)$$

$CO_2$  emission and economic growth are likely to have four types long run relationships as

1. Economic growth can cause  $CO_2$  emission,
2.  $CO_2$  emission can cause economic growth,
3.  $CO_2$  emission and economic growth can simultaneously cause each other and
4. Finally  $CO_2$  emission may neither causes economic growth nor does economic growth cause  $CO_2$  emission.

## III. METHODOLOGY

Assessment of Granger causality between the variables and the direction of their causality in a vector error correction framework requires three steps. The first step is to test the nonstationarity property and determine order of integration of the variables, the second step is to detect the existence of long run relationship and the third step is check the direction of causality between the variables.

### a) Testing for Nonstationarity Property and Order of Integration

Examining the time series properties or nonstationarity properties of the variables is imperative as regression with nonstationary variables provides spurious results. Therefore, before moving further variables must be made stationary. This study applies two unit root tests-the Augmented Dickey Fuller test (Dickey & Fuller, 1979) and Phillips-Perron (Phillips-Perron, 1988) to test whether the variables are nonstationary and if nonstationary the order of integration is the same or not.

### b) Augmented Dickey Fuller (ADF) Test

The Augmented Dickey-Fuller (ADF) test is used to test for the existence of unit roots and determine the order of integration of the variables. The ADF test requires the equations as follows

$$\Delta y_t = \alpha_0 + \alpha_1 t + \theta y_{t-1} + \sum_{i=1}^m w_i \Delta y_{t-i} + \varepsilon_t \quad (2)$$

Where,  $\Delta$  is the difference operator,  $y$  is the series being tested,  $m$  is the number of lagged differences and  $\varepsilon$  is the error term.

c) *Phillips-Perron (P.P) Test*

Phillips-Perron (1988) test deals with serial correlation and heteroscedasticity. Phillips and Perron use non parametric statistical methods to take care of serial correlation in the terms with adding lagged difference terms. Phillips-Perron test detects the presence of a unit root in a series. Suppose, is estimating as

$$\Delta y_t = \alpha + \beta t + \rho^* y_{t-1} + u_t \quad (3)$$

Where, the P.P test is the t value associated with the estimated co-efficient of  $\rho^*$ . The series is stationary if  $\rho^*$  is negative and significant. The test is performed for all the variables where both the original series and the difference of the series are tested for stationary.

d) *Cointegration*

We apply Johansen and Juselius (1990) and Johansen (1988) maximum likelihood method to test for cointegration between the series of carbon emission and economic growth. This method provides a framework for testing of cointegration in the context of Vector Autoregressive (VAR) error correction models. The method is reliable for small sample properties and suitable for several cointegration relationships. The cointegration technique uses two tests-the maximum Eigen value statistics and trace statistics in estimating the number of cointegration vectors. The trace statistic evaluates the null hypothesis that there are at most r cointegrating vectors whereas the maximal Eigen value test evaluates the null hypothesis that there are exactly r cointegrating vectors. Let us assume that follows I(1) process, it is an nX1 vector of variables with a sample of t. Deriving the number of cointegrating vector involves estimation of the vector error correction representation:

$$\Delta y_t = \mu_0 + \Pi y_{t-m} + \sum_{i=1}^m \mu_i \Delta y_{t-i} + \varepsilon_t \quad (4)$$

The long run equilibrium is determined by the rank of  $\Pi$ . The matrix  $\Pi$  contains the information on long run relationship between variables, that is if the rank of  $\Pi=0$ , the variables are not cointegrated. On the other hand if rank (usually denoted by r) is equal to one, there exists one cointegrating vector and finally if  $1 < r < n$ , there are multiple cointegrating vectors and there are nXr matrices of  $\alpha$  and such that  $\Pi = \alpha\beta'$ , where the strength of cointegration relationship is measured by  $\alpha$ ,  $\beta$  is the cointegrating vector and  $\beta' y_t$ .

The tests given by Johansen and Juselius (1990) are expressed as follows. The maximum Eigenvalue statistic is expressed as:

$$\lambda_{\max} = -T \ln(1 - \hat{\lambda}_{(r+1)}) \quad (5)$$

While the trace statistic is written as follows:

$$\lambda_{\text{trace}}(r) = -T \sum_{i=r+1}^k \ln(1 - \hat{\lambda}_i) \quad (6)$$

Where, r is the number of cointegrating vectors

under the null hypothesis and  $\hat{\lambda}_i$  is the estimated value for the ith ordered eigenvalue from the matrix  $\Pi$ . To determine the rank of matrix  $\Pi$ , the test values obtained from the two test statistics are compared with the critical value from Mackinnon-Haug-Michelis (1999). For both tests, if the test statistic value is greater than the critical value, the null hypothesis of r cointegrating vectors is rejected in favor of the corresponding alternative hypothesis.

e) *Error Correction Mechanism*

The direction of the causality of long run cointegrating vectors in a vector error correction framework can be conducted once the long run causal relationship between the variables is established. Assuming that the variables are integrated of the same order and cointegrated, the following Granger causality test with an error correction term can be formulated:

$$\Delta Ep_t = \eta_0 + \sum_{i=1}^n \alpha_i \Delta Ep_{t-i} + \sum_{j=1}^m \beta_j \Delta GDP_{t-j} + \delta ECT_{t-1} + \varepsilon_t \quad (7)$$

$$\Delta GDP_t = \mu_0 + \sum_{i=1}^n \gamma_i \Delta GDP_{t-i} + \sum_{j=1}^m \lambda_j \Delta Ep_{t-j} + \delta ECT_{t-1} + \varepsilon_t \quad (8)$$

Where, ECT is error correction term. This provides the long run and short run dynamics of cointegrated variables towards the long run equilibrium. The coefficient of error correction term shows the long term effect and the estimated coefficient of lagged variables shows the short term effect between the variables.

IV. EMPIRICAL RESULTS

a) *Results of Unit Root Test*

The results of the Augmented Dickey Fuller (1981), ADF Stationarity test in levels show that some variables are stationary and some are non-stationary in level form. In the next step of difference form it is found that all the variables are stationary. The results of the stationarity test in levels and in difference form in shown is Table 1.

Table 1 : Augmented Dickey-Fuller Unit Root Test Results

		Level Form			Difference Form			
Variable	With Constant and Trend				With Constant and Trend			
	Statistics	Critical Values			Statistics	Critical Values		
		1%	5%	10%		1%	5%	10%
<b>Bangladesh</b>								
$CO_2$	-	-4.211868	-3.529758	-3.196411	-9.783222	-4.211868*	-3.529758**	-3.196411***
GDP	4.257990	-	-3.526609**	-3.196411***	-0.876964	-4.243644	-3.544284	-3.204699
<b>Bhutan</b>								
$CO_2$	-	-4.205004	-3.526609	-3.196411	-5.813915	-4.211868*	-3.529758**	-3.196411***
GDP	0.813214	-4.219126	-3.533083	-3.198312	-7.749178	-4.211868*	-3.529758**	-3.196411***
<b>India</b>								
$CO_2$	1.023785	-4.211868	-3.529758	-3.196411	-3.665813	-4.211868	-3.529758**	-3.196411***
GDP	2.950238	-4.205004	-3.526609	-3.196411	-5.102512	-4.211868*	-3.529758**	-3.196411***
<b>Maldives</b>								
$CO_2$	-	-4.234972	-3.540328	-3.202445	-5.095165	-4.234972*	-3.540328**	-3.202445***
GDP	-	-4.226815	-3.536601	-3.200320	-6.657349	-4.226815*	-3.536601**	-3.200320***
<b>Nepal</b>								
$CO_2$	-	-4.234972	-3.540328	-3.202445	-7.441555	-4.211868*	-3.529758**	-3.196411***
GDP	-	-4.219126	-3.533083	-3.198312	-6.560995	-4.219126*	-3.533083**	-3.198312***
<b>Pakistan</b>								
$CO_2$	-	-4.205004	-3.526609	-3.196411	-8.443667	-4.211868*	-3.529758**	-3.196411***
GDP	-	-4.211868	-3.529758	-3.196411	-4.285085	-4.211868*	-3.529758**	-3.196411***
<b>Sri Lanka</b>								
$CO_2$	-	-4.205004	-3.526609	-3.196411	-6.999085	-4.211868*	-3.529758**	-3.196411***
GDP	4.919949	-	-3.526609**	-3.196411***	-3.712592	-4.211868	-3.529758**	-3.196411***
		4.205004*						

The test is conducted using Eviews 7.1

Note: On the base of critical value in Table 1, the \* denotes that the rejection of null hypothesis of unit root at 1%, \*\*denotes that the rejection of null hypothesis of unit root at 5% and \*\*\* denotes that the rejection of null hypothesis of unit root at 10% level of significance. Here we consider the variables with constant and trend both in level and first difference form.

It is evident from Table that the calculated ADF statistics in respect of Bangladesh  $CO_2$  and GDP are greater than their critical values (denoted by asterisks) in difference form respectively. So in this case the null hypothesis can be rejected. In respect of Bhutan  $CO_2$  and GDP, we found that the calculated ADF statistic is greater than their critical value both in difference and level form respectively. So, null hypothesis can be rejected. For the Indian side we see that the Indian and  $CO_2$  GDP calculated ADF are greater than their critical value both in difference and level form. So, null

hypothesis rejected here and so on for Maldives, Nepal, Pakistan and Sri Lanka, it shows that the calculated ADF statistics are greater than their critical value. So, the null hypothesis is rejected and the variables are stationary.

Table 2 : Results of Phillips-Perron (P.P) Test

Variables	Level form				Difference Form			
	Statistics	Critical Values			Statistics	Critical Values		
	With Constant and trend	1%	5%	10%	With Constant and trend	1%	5%	10%
<b>Bangladesh</b>								
$CO_2$	-1.723054	-4.211868	-3.529758	-3.196411	-13.90476	-4.211868*	-3.529758**	-3.196411***
GDP	6.026398	-4.205004*	-4.205004**	-3.196411***	-5.186016	-4.211868*	-3.529758**	-3.196411***
<b>Bhutan</b>								
$CO_2$	-1.475181	-4.205004	-3.526609	-3.194611	-5.799355	-4.211868*	-3.529758**	-3.196411***
GDP	0.813214	-4.219126	-3.533083	-3.198312	-7.848361	-4.211868*	-3.529758**	-3.196411***
<b>India</b>								
$CO_2$	1.023785	-4.211868	-3.529758	-3.196411	-3.705744	-4.211868*	-3.529758**	-3.196411***
IGDP	4.425492	-4.205004*	-3.526609**	-3.196411***	-5.145096	-4.211868*	-3.529758**	-3.196411***
<b>Maldives</b>								
$CO_2$	-0.571652	-4.234972	-3.540328	-3.202445	-25.76413	-4.211868*	-3.529758**	-3.196411***
GDP	-1.687696	-4.226815	-3.536601	-3.200320	-14.22380	-4.211868*	-3.529758**	-3.196411***
<b>Nepal</b>								
$CO_2$	-2.849825	-4.234972	-3.540328	-3.202445	-7.410771	-4.211868*	-3.529758**	-3.196411***
GDP	-1.680807	-4.219126	-3.533083	-3.198312	-8.621159	-4.211868*	-3.529758**	-3.196411***
<b>Pakistan</b>								
$CO_2$	-2.701688	-4.205004	-3.526609	-3.194611	-8.470362	-4.211868*	-3.529758**	-3.196411***
GDP	-2.243989	-4.211868	-3.529758	-3.196411	-4.285085	-4.211868*	-3.529758**	-3.196411***
<b>Sri Lanka</b>								
$CO_2$	-2.116680	-4.205004	-3.526609	-3.194611	-6.955575	-4.211868*	-3.529758**	-3.196411***
GDP	6.686738	-4.205004*	-3.526609**	-3.194611***	-3.653982	-4.211868	-3.529758**	-3.196411***

The test is conducted using Eviews 7.1

Note: On the base of critical value in Table 2, the \* denotes that the rejection of null hypothesis of unit root at 1%, \*\*denotes that the rejection of null hypothesis of unit root at 5% and \*\*\* denotes that the rejection of null hypothesis of unit root at 10% level of significance. Here we consider the variables with constant and trend both in level and first difference form.

Phillips-Perron Test used to non parametric statistical methods to take care of the serial correlation in the terms without adding lagged difference terms.

Table 2 shows the Phillips-Perron (1988) tests results.

It is evident from Table 2 that the calculated Phillip-Perron (P.P.) statistics in respect of Bangladesh  $CO_2$  and GDP are greater than their critical values

(denoted by asterisks) both in difference and level form. In respect of Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, we see that the calculated P.P statistics in respect of  $CO_2$  and GDP are greater than their critical value. So, the null hypothesis can be rejected and the data series are stationary.

b) *Cointegration Results*

Cointegration test clarifies that the existence of long run equilibrium relationship among the variables. The cointegration technique is meant to calculate two statistics: Trace ( $\lambda_{trace}$ ) statistics and the Maximum Eigen value ( $\lambda_{max}$ ) statistics. The estimated results, particularly Maximum Eigen value and Trace statistics are presented in the Table 3 which indicates that the statistics value is greater than the critical value. This means that the hypothesis of no cointegration is rejected and hence they are cointegrated. The Trace statistics and Maximum Eigen value tests indicate that there is one cointegration eqn(s) at 5% level. This means that the variables among environmental pollution (i.e.  $CO_2$  emission) and economic growth (i.e. GDP) have the long run relationships. So, it is clear that there is one linear cointegration eqn(s) for each of the variables that there is one long run relationship and liner deterministic trend among the variables.

More specifically, Table 3 shows that at 5 percent level of significance the likelihood ratios (trace

statistics) for the null hypothesis having one ( $r=1$ ) cointegration (Bangladesh 52.09660, Bhutan 20.14684, India 31.24033, Maldives 30.52002, Nepal 26.51150, Pakistan 35.34613 and Sri Lanka 27.80299) are higher than their respective critical values (Bangladesh 15.49471, Bhutan 15.49471, India 25.87211, Maldives 25.87211, Nepal 25.87211, Pakistan 25.87211 and Sri Lanka 15.49471). At 5% level of significance, the maximum eigenvalue statistics for the null hypothesis having one cointegration (Bangladesh 50.89387, Bhutan 19.79190, India 26.51020, Maldives 21.64308, Nepal 21.65528, Pakistan 31.54539 and Sri Lanka 25.86416) are higher than their respective critical values (Bangladesh 14.26460, Bhutan 14.26460, India 19.38704, Maldives 19.38704, Nepal 19.38704, Pakistan 19.38704 and Sri Lanka 14.26460). Hence, according to the likelihood ratio and maximum Eigen value statistics tests, carbon emission and economic growth are cointegrated. Thus, the long run equilibrium relationship among these series is cointegrated.

Table 3 : Co-integration Results

Variable	H0	H1	Trace Statistics	5% Critical value	Max. Eigen value	5% critical value	Hypothesis
<b>Bangladesh</b>							
$CO_2$ GDP	r=0	r=1	52.09660	15.49471	50.89387	14.26460	Ho: Rejected
	r=1	r=2	1.202731	3.841466	1.202731	3.841466	H1: Accepted
<b>Bhutan</b>							
$CO_2$ GDP	r=0	r=1	20.14684	15.49471	19.79190	14.26460	Ho: Rejected
	r=1	r=2	0.354942	3.841466	0.354942	3.841466	H1: Accepted
<b>India</b>							
$CO_2$ GDP	r=0	r=1	31.24033	25.87211	26.51020	19.38704	Ho: Rejected
	r=1	r=2	4.730134	12.51798	4.730134	12.51798	H1: Accepted
<b>Maldives</b>							
$CO_2$ GDP	r=0	r=1	30.52002	25.87211	21.64308	19.38704	Ho: Rejected
	r=1	r=2	8.876940	12.51798	8.876940	12.51798	H1: Accepted
<b>Nepal</b>							
$CO_2$ GDP	r=0	r=1	26.51150	25.87211	21.65528	19.38704	Ho: Rejected
	r=1	r=2	4.856219	12.51798	4.856219	12.51798	H1: Accepted
<b>Pakistan</b>							
$CO_2$ GDP	r=0	r=1	35.34613	25.87211	31.54539	19.38704	Ho: Rejected
	r=1	r=2	3.800743	12.51798	3.800743	12.51798	H1: Accepted
<b>Sri Lanka</b>							
$CO_2$ GDP	r=0	r=1	27.80299	15.49471	25.86416	14.26460	Ho: Rejected
	r=1	r=2	1.938833	3.841466	1.938833	3.841466	H1: Accepted

Note: The Trace and Max. Eigen value test indicates that there is at least one (1) cointegrating eqn(s) at 5% level of significance. Here \*\* denotes the rejection of the hypothesis at 0.05 level.

c) *Results of Error Correction Modeling*

Engle and Granger (1987) showed that, if two variables (say X and Y) are individually integrated of order one [i.e. I (1)] and cointegrated then there is possibility of a causal relationship in at least one direction. That means cointegration with I (1) variables indicate the presence of Granger causality but it does not indicate the direction of causality. The vector error correction model is used to detect the direction of causality of long-run cointegrating vectors. Moreover, Granger Representation Theorem indicates how to model a cointegrated series in a Vector Auto Regressive (VAR) format. VAR can be constructed either in terms of level data or in terms of their first differences [I (0)] with

the addition of an error correction to capture the short run dynamics.

If the two variables are cointegrated, there must exist an error correction mechanism. This implies that error correction model is associated with the cointegration test. The long term effects of the variables can be represented by the estimated cointegration vector. The adjusted coefficient of error correction term shows the long term effect and the estimated coefficient of lagged variables shows the short term effect. Causality test among the variables are based on Error Correction Model with first difference. Table 4 shows the results of error correction model of the variables.

Table 4 : Results of Error Correction Model

	Coefficient	t	F		Coefficient	t	F
<b>Bangladesh</b>							
$GDP = f(CO_2)$	0.012022	[ 0.42823]	1.867654	$CO_2 = f(GDP)$	51.52446**	[ 7.74284]	50.44211
<b>Bhutan</b>							
$GDP = f(CO_2)$	0.002749	[ 0.23656]	0.364334	$CO_2 = f(GDP)$	-22.31243**	[-4.80641]	8.089451
<b>India</b>							
$GDP = f(CO_2)$	-0.002613	[-0.43108]	9.506284	$CO_2 = f(GDP)$	-10.77139**	[-4.42385]	17.17979
<b>Maldives</b>							
$GDP = f(CO_2)$	-0.361661**	[-3.72978]	7.365691	$CO_2 = f(GDP)$	-79.42380	[-0.92433]	5.569285
<b>Nepal</b>							
$GDP = f(CO_2)$	-0.197094	[-1.91152]	1.160219	$CO_2 = f(GDP)$	-106.6725**	[-3.68314]	3.250268
<b>Pakistan</b>							
$GDP = f(CO_2)$	-0.112020	[-0.57248]	4.644593	$CO_2 = f(GDP)$	131.6173	[ 1.47971]	2.041946
<b>Sri Lanka</b>							
$GDP = f(CO_2)$	0.000134	[ 0.06242]	0.656019	$CO_2 = f(GDP)$	-3.472699**	[-3.81311]	16.65960

Note: \*\* denotes the rejection of the hypothesis at 5% level of significance. The \*\* values are statistically significant and shows the estimated coefficient of lagged variables. Values in the third brackets are t-statistics.

Table 4 shows the significance of Error Correction Term (ECT) for carbon dioxide ( $CO_2$ ) emission and economic growth (GDP) of SAARC countries. It is evident from the Table that the error correction term (ECT) is significant for the country Bangladesh, India, Nepal, Bhutan and Sri Lanka in term of GDP, i.e. in these country GDP causes  $CO_2$  for the long term perspective. But in Maldives the ECT is significant in respect of  $CO_2$  emission and for Pakistan we did not find the significance of ECT.

V. CONCLUSION

This paper examines the long-run causal relationships between  $CO_2$  emissions and economic growth in SAARC countries during the period of 1972-2012. We apply cointegration and VECM to evaluate the relationship. Empirical results suggest that a long run relationship exist between  $CO_2$  emissions and economic growth in SAARC countries. The application of the cointegration based Granger Causality test found that there is a long run (short run also) relationship between economic growth and  $CO_2$  emissions that is energy

consumption granger causes  $CO_2$  emissions and economic growth (GDP). Hence, the long run income elasticity of carbon emissions are greater than the short run income elasticity of carbon emissions, which implies that income (GDP) leads to greater carbon dioxide emissions in the SAARC countries. That is why the significant and positive impact of energy consumption is crucial for economic growth, but the rapid pace of  $CO_2$  emissions requires the adoption of environment friendly developed technology or alternative sources of energy for the protection of environment in seven SAARC countries.

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## Health and Nutritional Economic Growth in Pakistan: A Systematic Review

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*Abstract-* In this short report I want to explain about the economic growth in Pakistan. Here I explain the health and nutritional economic growth in Pakistan almost last ten years. Government of Pakistan made different policies for the development of nation. These policies include health policies, medical treatment, HIV control programmes etc. These all policies helps for the prosperity of Pakistan.

*Keywords:* HIV, malaria, development, policies.

*GJHSS-E Classification : FOR Code: 910103*



*Strictly as per the compliance and regulations of:*



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# Health and Nutritional Economic Growth in Pakistan: A Systematic Review

Hafiza Sobia Ramzan

**Abstract-** In this short report I want to explain about the economic growth in Pakistan. Here I explain the health and nutritional economic growth in Pakistan almost last ten years. Government of Pakistan made different policies for the development of nation. These policies include health policies, medical treatment, HIV control programmes etc. These all policies helps for the prosperity of Pakistan.

**Keywords:** HIV, malaria, development, policies.

## I. INTRODUCTION

Most people want to lead healthy lifestyles. There is much that people can do individually to protect their health including driving safely, wearing seatbelts, avoiding tobacco smoke and air pollution, exercising regularly, eating healthy food and having regular checkups. But many health risks are also influenced by community factors, including transportation and land use planning decisions. Health plays the key role in determining the human capital. Better health improves the efficiency and the productivity of the labor force, ultimately contributes the economic growth and leads to human welfare.

Access to good health can contribute positively to the economic and social development of a country. Thus, key issues that impact the health status of people ought to be addressed through a diverse set of policy tools comprising short and long term measures to secure better health outcomes. The people of Pakistan have grown healthier over the past three decades. The vision for the health sector comprises a healthy population with sound health, enjoying good quality of life through the practice of a healthy life style. In order to achieve this vision, significant measures have been taken toward disease prevention, health promotion, and greater coverage of immunization, family planning, and provision of female health worker services.

To attain better, more skillful, efficient and productive human capital resources, governments subsidize the health care facilities for its people. In this regard, the public sector pays whole or some part of the cost of utilising health care services. The size and distribution of these in-kind transfers to health sector differs from country to country but the fundamental question is how much these expenditures are productive and effective? It very much depends on the volume and the distribution of these expenditures among the people of different areas of the country.

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Lamiraud, et al. (2005) argued that social health protection is an important instrument aiming at fair burden sharing and reducing barrier underlining access to health care services. Another good reason for the government spending in delivering basic health care services is to reduce burden of the diseases (BOD) in the productive years of the life. The social rate of return and the BOD force the policy-makers to transfer the public resources towards basic health care facilities.

According to the Economic Survey of Pakistan (2005-06), the government spent 0.75 percent of GDP on health sector in order to make its population more healthy and sturdy. In this regard, a number of vertical and horizontal programmes regarding health facilities are operative in Pakistan. The federally funded vertical programmes include: Lady Health Worker Programme; Malaria Control Programme; Tuberculosis and HIV/AIDS Control Programme; National Maternal and Child Health Programme; the Expanded Programme on Immunisation; Cancer Treatment Programme; Food and Nutrition Programme, and; the Prime Minister Programme for Preventive and Control of Hepatitis A & B. To effectively address the health problems facing Pakistan, a number of policies emphasis better health care services. These include: Health related Millennium Development Goals; Medium Term Development Framework; Poverty Reduction Strategy Papers; National Health Policy, and; Vision 2030. In spite of these policies, to overcome the health related problems in Pakistan seems suspicious and distrustful.

The communicable diseases are still a challenge and the statistics reveal that the nutrition and reproductive health problem in communicable diseases are still liable for the 58 percent of the BOD in Pakistan. Non-communicable diseases (NCD), caused by sedentary life styles, environmental pollution, unhealthy dietary habits, smoking etc. account for almost 10 percent of the BOD in Pakistan.

## II. REVIEW OF LITERATURE

A comprehensive review of literature, research materials, articles and evaluation reports is done to assess the existing situation and policy debate. This includes documents and reports available from World Health Organisation (WHO), United Nations Children's Fund (UNICEF), Asian Development Bank (ADB), Centre for Poverty Reduction and Income Distribution (CRPRID), Poverty Reduction Strategy Papers (PRSP),

Ministry of Health (Islamabad) and Mehbub ul Haq Human Development Centre. A large number of the studies have employed the Benefit Incidence Approach (BIA) on household data for their analysis. Findings reveal that public sector expenditures are either progressive or regressive and the share of the different income group differs depending upon the delivery of the benefits of the public expenditures across region, caste, religions, gender etc., see Christian (2002), Rasmus, et al. (2001), Younger (1999), Jorge (2001), Roberts (2003), Hyun (2006), David, et al. (2000), Gupta, et al. (1998, 2002), Lamiraud, et al. (2005), SPDC (2004), Norman (1985), Castro, et al. (2000), Hamid, et al. (2003), Sakellariou and Patrinos (2004) and Shahin (2001).

The studies which exhibit public sector expenditures are progressive such as Younger (1999), in Ecuador used combination of benefit and behavioural approaches showed that public expenditures improves the health indicators in the developing countries. In cross country analysis, Gupta, et al. (2002) used 56 country data and concluded that the increase in public expenditures on health reduces the mortality rates in infants and children. Study by Toor and Butt (2005) shows that socio-economic factors play an important role in determining the health care expenditure in Pakistan.

The share of health expenditure in total public sector expenditure is the most significant variable affecting health status in a country. Moreover, literacy rate and GDP growth are also essential variables, which illustrate a positive relationship with health care expenditure. Other set of studies that establish the regressiveness of incidence of public sector spending such as Norman (1985) concluded that increased government expenditure on health services eventually benefits more to the upper income than the lower income groups.

Castro-Leal, et al. (2000) analysed the public spending on curative care in several African countries and found that the public sector spending favours mostly the better-off rather than the poor. Hamid, et al. (2003) study covers 56 countries analysis from the period 1960–2000 in which benefit incidence approach (BIA) was used, resulted in, on average spending on health is pro rich particularly in sub-Saharan Africa but is well targeted and progressive only in the western hemisphere. Some points need further consideration; the first point about the impact of the level of public expenditures on human capabilities is a debated point, because not all studies have found an empirical link between the two. The connection between lucratively addressing poverty issues and spending is not first and foremost a function of the percent of GDP that is committed to total spending on health and, but depends on the intra-sectoral allocation to health spending. Evidence shows that infant and child mortality rates

become lowest in countries with high shares of health care spending devoted to primary (preventive) health care facilities. Second, the fiscal policy-makers meet head- on the nature and magnitude of fiscal incidence.

The policy choices necessitate the knowledge about which groups are prone to pay for and which groups are expected to benefit more from public sector expenditure. Policy-makers have many questions concerning how to alleviate the burden of taxation for the poor and about how to increase the efficiency and efficacy of the public sector spending on health? How to target public spending in order to improve the conditions of the poor? The incidence analysis provides some critical information to facilitate policy-makers regarding equal distribution of income and improvement of efficiency and efficacy of the public policy.

Ample literature is available to understand the questions regarding the nature of incidence of the public sector expenditure in developing as well as developed countries. Most of the studies have been conducted on old data-sets taken from household surveys which have not been updated. These studies are deficient in comparisons of incidence among the cross countries on one hand and in-comparability of the cross country results on the other hand. Moreover, the impact on different groups such as gender and region has not been taken into consideration in the case of Pakistan, as emphasised by Seldon and Wasylenko (1992).

Nevertheless, the literature considering the incidence of the public sector expenditure and its distribution in Pakistan is scarcely available. The current study is being initiated to explore the nature of incidence of public sector expenditures in Pakistan on health sector by using the primary data of the Pakistan Social and Living Standards Measurement Survey (PSLM), 2004-05, collected and published by the Federal Bureau of Statistics, Pakistan.

By using current data, the current research highlights the present scenario of incidence of the public spending on health and indirectly provide the guideline to what extent health policy targets have been successfully achieved, who benefit how much, which kind of inequalities exist in distribution of benefits of government expenditure on health, region and income wise. Additionally, by calculating the inequalities in the distribution of the benefits of expenditures, the study provides policy recommendations to enhance the effectiveness and efficacy.

#### a) *Health Indicators*

The most recent data on health performance of other South Asian countries suggest that Pakistan lags behind in infant mortality rate (at 63 per 1000 live births) and the under 5 year's mortality rate (at 86.5 per 1000 live births). These indicators continue to remain high mainly on account of un-healthy dietary habits, water borne diseases, malnutrition and rapid population

growth. However, the average life expectancy at 66 years compares well with India, Nepal and Bangladesh. Pakistan is committed towards achieving the millennium development goals.

Table 0 1

Country	Life expectancy 2011	Mortality rate	Infant mortality rate	Population growth rate (%)
Pakistan	65.99	86.5	63.26	2.03
India	66.80	62.7	47.57	1.34
China	74.68	18.4	16.06	0.49
Indonesia	71.33	35.3	27.95	1.07
Bangladesh	69.75	47.8	50.73	1.57
Sri-lanka	75.33	16.5	9.70	0.93
Malaysia	73.79	6.3	15.02	1.58
Nepal	66.16	49.5	44.54	1.60

Source: World development report 2011

#### b) Health Expenditure

To maintain the expansion of health facilities, the financial allocation for the health sector has been increasing steadily. However, the massive floods of 2010 caused a significant downwards rationalization of health and nutrition expenditures which had to be diverted to the relief and rehabilitation effort. Total health

expenditures (federal and provincial) declined from Rs. 79 billion in 2009-10 to Rs 42 billion in 2010-11. For 2011-12 these have been increased to Rs 55.12 billion; comprising Rs 26.25 billion as development expenditure and Rs 28.87 billion as non-development (current) expenditure. Rs 15.72 billion have been provided in the federal PSDP for 2011-12.

Table 0 2

Fiscal year	Public expenditure	Percentage change	Health expenditure % of GDP
2000-2001	24.28	9.9	0.72
2001-2002	25.41	4.7	0.59
2002-2003	28.81	13.4	0.58
2003-2004	32.81	13.58	0.58
2004-2005	38.00	15.8	0.57
2005-2006	40.00	5.3	0.51
2006-2007	50.00	25.0	0.57
2007-2008	60.00	20.0	0.57
2008-2009	74.00	23.0	0.56
2009-2010	79.00	7.0	0.54
2010-2011	42.00	-47	0.23
2011-2012	55.12	31.24	0.27

Source: Planning & Development Division

#### c) Targets and Achievements during 2011-12

The targets for the health sector during 2011-12 included establishment of 10 rural health centres (RHC), 50 basic health units (BHUs) and renovation of 20 existing RHCs and 50 BHUs. The manpower targets include the addition of 5,000 doctors, 500 dentists, 4,000 nurses, 5,000 paramedics and 550 traditional birth attendants. Under the preventive program, about 7.5 million children were targeted to be immunized and 22 million packets of oral rehydration salt (ORS) were to be distributed during 2011-12.

The achievements in the health sector during 2011- 12 included the establishment of 7 rural health centers (RHCs), 30 basic health units (BHUs) and renovation of 15 existing RHCs and 35 BHUs and

addition of 4,000 hospital beds. The manpower development achievements include entry of 4,300 new doctors, 450 Dentists, 3,000 nurses and completion of training for 9,500 Lady Health Workers (LHWs). 60 percent of the set target was achieved in the case of BHUs and 95 percent in the case of training of Lady Health Workers. Under the preventive program, about 7 million children were immunized and 20 million packets of ORS were distributed till March, 2012.

Table 03 : Physical achievements 2011-2012

Sub-sectors	Targets	Estimated achievements	Achievements %
<b>A. Rural Health Programme</b>			
New BHUs	50	30	60
New RHCs	10	7	70
Strengthening/ Improvement of BHUs	50	35	70
Strengthening/ Improvement of RHCs	20	15	75
<b>B. Hospital Beds</b>	5000	4000	80
<b>C. Health Manpower</b>			
Doctors	5000	4300	86
Dentists	500	450	90
Nurses	4000	3000	75
Paramedics	5000	4500	90
TBAs	550	500	91
Training of LHWs	10000	9500	95
<b>D. Preventive Programme Immunization</b>	7.5	7	93

#### d) Health Programs

In pursuance of the 18th amendment to the constitution of Pakistan, the health sector has been devolved to the provinces and the federal Ministry of Health has been abolished. However, national planning in the health sector and cooperation with the provinces and international development partners is vested with the Planning and Development Division. All the vertical health programs have also been devolved to the provinces. However, upon request of the provinces, the Council of Common Interests (CCI) in its meeting held on 28th April 2011 decided that the federal government (Planning and Development Division) shall fund these programs till currency of the 7th NFC award at a predefined share. Accordingly, the following national health programmes continue to be financed by the federal government in the post devolution scenario till 2014-15.

#### e) Food and Nutrition

The links between malnutrition, ill health and poverty are well known. Disease contributes to poverty due to the costs of illness and reduces earning capacity during and after illness. Good health is a first step towards prosperity and reduction of poverty. It is therefore, critical to move towards a system which will address health challenges and prevent households from falling into poverty due to poor health. In Pakistan, health sector investments are viewed as part of the government's poverty alleviation endeavors.

### III. CONCLUSION

This chapter discussed the state of health and nutrition in Pakistan. An overview of the National Health Policy and its primary objectives are presented, followed by a discussion of the state of health indicators, expenditures, and facilities in Pakistan. The targets and

accomplishments for the 2011-12 are described, followed by a special focus on cancer treatment and the government's response to dengue outbreaks. The chapter highlights the challenges of narcotics trafficking and growing incidence of drug addiction in Pakistani society.

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## Globalization and Poverty: A Divisional Study on Bangladesh (1990-2010)

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*Abstract-* This paper investigates the nexus between economic aspect of globalization and poverty across the six key divisions of Bangladesh. Arguments are based on theories of dualistic development and structural transformation process in low income countries. In this model economic globalization of Bangladesh is measured by three major features which are trade of merchandise and services, FDI and remittance inflow. Additionally a control variable is taken which is population. So for this statistical panel regression is used i.e. fixed-effect model and random-effect model. The lack of data deficiency did not let us execute any statistical procedure to choose any specific model. In this paper both the model have uniform outcome. The empirical findings in both the model are consistent with conventional wisdom for remittance inflow. Population and trade have traditional affiliation with poverty, but statistically insignificant in both model. However the positive FDI link implies that it totally contradicts with normal norm. Then the emphasis is on dummy variable analysis. In the dummy variable analysis Dhaka division is excluded to get rid of the dummy variable trap and to make comparison with five other divisions. Each of the division has directly proportional relationship with poverty. Additionally it was found to be statistically significant apart from Khulna division. To conclude, the fruits from economic globalization are unequally divided across divisions.

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*Strictly as per the compliance and regulations of:*



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# Globalization and Poverty: A Divisional Study on Bangladesh (1990-2010)

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**Abstract-** This paper investigates the nexus between economic aspect of globalization and poverty across the six key divisions of Bangladesh. Arguments are based on theories of dualistic development and structural transformation process in low income countries. In this model economic globalization of Bangladesh is measured by three major features which are trade of merchandise and services, FDI and remittance inflow. Additionally a control variable is taken which is population. So for this statistical panel regression is used i.e. fixed-effect model and random-effect model. The lack of data deficiency did not let us execute any statistical procedure to choose any specific model. In this paper both the model have uniform outcome. The empirical findings in both the model are consistent with conventional wisdom for remittance inflow. Population and trade have traditional affiliation with poverty, but statistically insignificant in both model. However the positive FDI link implies that it totally contradicts with normal norm. Then the emphasis is on dummy variable analysis. In the dummy variable analysis Dhaka division is excluded to get rid of the dummy variable trap and to make comparison with five other divisions. Each of the division has directly proportional relationship with poverty. Additionally it was found to be statistically significant apart from Khulna division. To conclude, the fruits from economic globalization are unequally divided across divisions.

## I. INTRODUCTION

Globalization and poverty both are ubiquitous and ambiguous term (Globalization, Poverty and Inequality, 2003). But it does not mean they are vague issue. However globalization is a multi-dimensional concept (Santarelli and Figini, 2006). Social, political and economic aspects are the central dimension of globalization (Marber, 2004). Additionally there are other numerous aspects of globalization. Likewise, poverty is a complex phenomenon and it arises chiefly from economic, political and environmental factors (Winters, McCulloch and McKay, 2004). Besides there are also several reasons causing poverty. Furthermore there are different dimension of measuring poverty and globalization. Globalization can be measured through globalization index. And it can also be calculated using openness of the economy i.e. trade liberalization process (Bhagwati and Srinivasan, 2002). On the other hand poverty can quantified using health, consumption and income levels. And Todaro and Smith (2009) mention Amartya Sen's view of poverty

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who contemplated as capability to function approach. As a LDC poverty is nothing new in Bangladesh, rather quite prevalent. At the same time globalization is not a new phenomenon in Bangladesh. Bangladesh embraced globalization rigorously during the 1990's despite hesitant commencement in the mid 1980's. This paper is going to focus in the economic aspect of globalization and income perspective of poverty on the chief six regions in Bangladesh.

There are substantial controversy about globalization and poverty nexus in the previous work. This is because the empirical studies are found on both sides. UNCTAD (2002) proved the fact that globalization deteriorates poverty for LDC. Bhagwati and Srinivasan (2002) measured globalization in terms of trade liberalization for India and China. He discussed during the eighties India and China stick to rigorous trade liberalization process. As a result their economy had an extensive economic growth. They achieved economic growth with the help of exporting labor intensive goods. Consequently economic growth had tremendously affected poverty but positively. At the other end, Dollar and Kraay (2002) cross country regression found that trade does not ease poverty over 72 developing countries. His view of globalization was openness of the economy. The main setback here is that globalization does not lead to fairer distribution of income. This is because the prize of globalization is not distributed equally which is economic growth.

The theoretical literature regarding globalization and poverty has worked diversely for different countries. Neo classical theory of growth advocates that free trade and opening up the domestic economy would generate economic growth. This is because each country would be able to specialize in the sector they are efficient. Furthermore the country would be utilizing its abundant factor of production and exporting the goods produced by them. Kuznets (1955) inverted U hypothesis has declared that economic growth would be divided unequally in the initial stage. Later, after a certain point of time it would be distributed equally. Ultimately this would help to ameliorate poverty. However there are empirical evidences attained both for and against on numerous countries.

Bangladesh was basically divided across six major divisions. But after late 2000 one more division was added. The main six divisions are Khulna, Barisal, Chittagong, Sylhet, Dhaka and Rajshahi. These six

divisions incorporate the whole Bangladesh. This study gauged the impact of economic globalization on the six major divisions across Bangladesh. Additionally to get a clearer scenario of reward distribution of economic globalization dummy variable analysis is done across the six divisions. To be precise this analysis has looked into whether the remuneration from economic globalization is distributed across divisions in the form of poverty reduction. Therefore the study has compared Dhaka division with the other five divisions since Dhaka is the capital city and undoubtedly one of the affluent cities in Bangladesh. In the earlier studies related to Bangladesh it showed that economic globalization has followed the ideal wisdom i.e. lowered poverty. But in fact despite of widespread economic globalization poverty has persisted in particular division of Bangladesh. Therefore the government of Bangladesh was not able to take corrective measure in view of the fact that they were unaware. This research will look into each division which is deprived from economic globalization in the form of poverty eradication. This is the reason for giving importance on this division wise research. Previously there have been a lot of investigations on calculating the impact of economic globalization and poverty. Earlier, the studies were on panel studies which are calculating the impact of globalization on all the LDC including Bangladesh. Nevertheless the impact of economic globalization and poverty has been empirically tested on South Asian and Asian countries. Moreover there are time series reports specifically on Bangladesh on poverty and economic globalization. There are reports on the main divisions of Bangladesh regarding the growth, poverty and income inequality. Furthermore very few studies are done on the globalization and poverty divided across six key regions. The study of economic globalization on poverty according to the key six divisions of Bangladesh is the very first time to the best of my knowledge. This was the foremost motivation behind this research topic. This examination would also enlighten the government about certain component of economic globalization acting in favor or against poverty across divisions.

Initially, after the introductory remarks an illustration of the research question and research objective is given in the first section of this study. Then in the second chapter brief background about the globalization, economic globalization and poverty of Bangladesh has been given. The third part consists of investigating the empirical evidences found in the previous literature regarding this topic. Fourthly, the theoretical framework regarding poverty and economic globalization is examined. Section 5 draws up the research design and then interpreting the empirical results found. Finally it discusses about the limitation and gives concluding remarks to finish it off.

#### a) *Research objectives*

- To find what does globalization and economic globalization signify.
- To find what are the different aspects of economic globalization.
- To evaluate the relationship between economic globalization and poverty across the six main divisions of Bangladesh.

#### b) *Research questions*

- What is globalization?
- What is economic globalization?
- What are the main aspects of economic globalization?
- What is poverty?
- What is the network between economic globalization and poverty in the core six divisions of Bangladesh?

## II. BACKGROUND

Globalization is not a new phenomenon. It is prevalent in most of the countries of the world. Globalization has different dimensions. Zhou, Biswas, Bowles and Saunders (2011, 2) mentioned in the economic perspective globalization means liberalization of trade in goods and services and free movement of direct and portfolio capital. He further indicated that apart from the economic point of view “there is no uniquely accepted definition of globalization”. The impacts of globalization can be looked at with different perspectives. Zhou, Biswas, Bowles and Saunders (2011, 2) stated the work of Scholte (2000) in his paper, which identified that there exist at least five broad definition of globalization in the literature. Initially, globalization represents movement of goods and capital from one country to another. This is called internationalization. In the second place globalization is a process of liberalization. The process of liberalization intends to remove barrier and import restriction between countries imposed by government. This is aimed for more accessible and border less world economy. After that globalization represents universalization, this means “the process of spreading various objects and experiences (e.g., a specific television program) to every country”. Then he portrayed globalization as “modernization or westernization, which means the process of spreading various objects and experiences (e.g., a specific television program) to every country”. Lastly he depicted globalization as “deterritorialization, which means reconfiguration of geography so that social space is no longer wholly mapped in terms of territorial places and territorial borders”.

Basically globalization can be measured through globalization index. This is calculated by several intellectual authors and authenticated institutions.

#### a) *Economic globalization*

Todaro and Smith (2003, 510) elucidate globalization in more economic perspective “as the increased openness of economies to international trade, financial flows and foreign direct investment (FDI), rapid growth of knowledge and innovation which seems more visible in the developed countries”. Furthermore Jenkins (2005) defined economic globalization which is quite consistent with Todaro and Smith (2003). He explained it “as increasing integration of a national economy with the world economy through exchange of good and services, capital flows, technology, information, and labor migration”(Jenkins, 2005, 4).

#### b) *Poverty*

Poverty is such a snag which is found in every country of this world. The presence of poverty is inevitable and extent of poverty is dissimilar in different country. Poverty is such a problem which is prevalent in developing countries relative to developed countries. Primarily a person is said to be poor if he or she is unable to fulfill its subsistence living. Subsistence living refer to a situation where a person is just satisfying its basic needs such as shelter, food, clothing, water and other essential things. To be more specific subsistence living imply a situation where it is hardly sufficient to sustain a life. In general, least developed country report (2002, 39) expresses poverty as “a situation in which a major part of the population lives at or below income levels sufficient to meet their basic needs”. Ijaiya and Umar (2004, 3) expressed “poverty as disempowerment viewed from three dimensions: socio-economic, political and psychological”. He elucidated political disempowerment as poor people’s deprivation in the political say and agenda. Moreover “psychological disempowerment refers to poor people’s internalized sense of worthlessness and passive submission to authority”. Lastly socio-economic indicate the lack of access to resources indispensable for their subsistence living.

Basically poverty is a multi-dimensional problem. Correspondingly the problem of poverty arises from several different aspects. Poverty can be measured through dimensions such as nutrition, health, consumption and income levels. So poverty is like hydra that used to have many head. The easiest and simplest among the dimension to measure poverty is the income dimension. Basically if a person is unable to sustain a minimum level of income is said to be poor (Globalization, Growth and Poverty, 2002). And the threshold of that income is called the poverty line. Moreover to make it analogous worldwide there is an international poverty line. Todaro and Smith (2009, 828) explicate international poverty line as “and international real income measure, usually expressed in contrast dollars (e.g. \$1 per day), used as a basis for estimating the proportion of the world’s population that exists at

bare levels of subsistence”. Santarelli and Figini (2002, 4) said

“this threshold is defined relative if it is determined annually with respect to the population's average level of income, absolute if it is determined with respect to the monetary value of a bundle of necessary goods and services, updated every year to take account of the variation in prices and bundle composition”.

Lastly, the measures discussed above have critical defects.

In this paper we concentrate on the economic aspect of globalization on poverty. Therefore the issue of how the globalization has affected poverty in the previous literature is taken up in the next chapters.

### III. EMPIRICAL EVIDENCE

Globalization has many dimensions. But in this paper is based mainly on the economic aspect of globalization and its relationship with poverty. Economic globalization refers to greater economic integration with the rest of the world without any constraint (International Trade Report, 2011a). Additionally the empirical evidences are quite mixed among economic globalization and poverty (Human Development Report, 2011). According to Reuveny and Li (2003), Mahler (2004) and searching the literature we found that there are four major modes of economic globalization.

#### a) *Trade*

Trade refers to the exchange of services and goods of the local economy with the rest of the world. Theoretically the more unrestricted the economy implies vast amount of trading of goods and services of the local economy with the rest of the world. So in this case the Heckscher-Ohlin model is chief to explain the situation. This model of international trade tries to explain that countries will produce those goods in which they have abundant factor of production. Thus it make both the parties well off if they trade with each other.

Reuveny and Li (2003, 579) expressed that “building on this model, Stolper and Samuelson (1941) predicted that trade would raise the incomes of the owners of abundant factors and reduce the incomes of the owners of scarce factors”. Developed countries are bestowed with skilled labor and capital in comparison to developing countries. Moreover developing countries are endowed with unskilled labor. Consequently, export from LDC would benefit its copious factor which is unskilled labor and ameliorate the income inequality of LDC which ultimately reduces the lower income group. Hence, the poverty rate also decelerates. Wood (1994) found evidence on Stolper-Samuelson model and completely consented with the model. Conversely Robbins (1996) found evidence which does not comply with the model.

Bhagwati and Srinivasan (2002) empirically found that freer trade would help the poor countries by exporting labor intensive goods. Besides, it would ultimately lessen the poverty. The main theme is that trade would surge economic growth. And economic growth would diminish poverty. However the major setback arises when the distribution of growth is unevenly distributed. This is how it elevates the poverty population. Therefore Dollar and Kraay (2002) cross country regression found that trade does not ease poverty over 72 developing countries. But Harrison (1996) result was skeptical about trade and poverty.

Nevertheless we got variation in the end result of developed country as well. McMillan and Harrison (2006) got positive and statistically significant relation between high income countries. However Hill and Rapp (2009) verdict was totally opposite. On the contrary Rodriguez and Rodrik (1999) demonstrated skeptical conclusion.

Nonetheless when it comes to Asia the end upshot are quite diversified. Wade (2004) study on East Asian countries resulted in negative relation and statistically significant upshot. Bhattarai (2011) analysis on Bangladesh, Nepal and Pakistan got that trade has increased poverty. But reverse culmination for India and Sri Lanka.

In conclusion, the impact of trade on poverty is not consistent across region. As a result trade has affected poverty distinctly for different countries.

#### b) *Foreign direct investment*

FDI mainly refer to flow of foreign investment into host country as MNE. Foreign firms bring in lots of capital and technology into host country. The injection of capital would work as investment boost into the local economy. And modern technology is a provision to heighten their productivity a step ahead. So, according to neo classical theory both capital and technology would promote economic growth. Kuznets (1955) inverted U hypothesis explains that during the early stages of economic growth the income distribution is very likely to be unequal. Later, the growth would help to contract income inequality and poverty.

Portes (2008) attained reverse acquaintance between poverty and FDI for developed country. Moreover he directed that FDI was made in capital intensive sector and skilled labor. Developed country has abundance of capital and skilled labor compared to developing country. Thus it helped to amplify the income of the lower income group and finally abbreviate poverty. Baddeley (2006) report on the developed economy established that FDI augments poverty. Basically government is deprived from the advantage of FDI for tax holiday and other financial incentive given to the foreign firms. Therefore the reward could not be distributed to the lower income group in developed

country. Besides, Rodrik (1997) was skeptic about the link between FDI and poverty.

De Mello (1997) investigation on developing countries acquired negative bond between poverty and FDI which was also statistically supported. He stated that foreign investor that came into developing country were basically into labor intensive sector. And developing country has overflowing supply of labor compared to developed country. Subsequently the employment rate convalesces and poverty rate drops (Stiglitz, 1998).

According to the Globalization, Growth and Poverty (2002) report it is stated that FDI has alleviated poverty in some of the Asian countries like Malaysia and Taiwan. Whereas, it is also revealed that FDI did not lessened poverty extensively in Asian countries like Bangladesh. The most relevant reason behind poverty could be foreign firms give threat of leaving the host country which lowers the wages of workers (Nafziger, 1997).

Finally to wrap it off, the impact of FDI on poverty is not coherent across region. At the end of the day FDI effect was doubtful toward minimizing poverty.

#### c) *International labor mobility*

Labor mobility in the perspective of globalization is to emigrate from one country to another in search of better jobs. Labor mobility is quite favorable for the developing country due to the fact they have more surplus labor in terms of developed country. It brings in reasonably high amount of foreign revenue known as remittance. Remittance levitates the income of the remittance recipient country. This broadens the horizon of the income and its source. Eventually the poverty rate is dampened.

Jongwanich (2007) study on international migration has an inverse relation as well as econometrical significance with poverty. This is due to labor migration builds up remittance into the home country. Hereafter, this increases the income and smooth's the consumption of the low income group. Stark and Levhari (1982) detected direct relation between poverty and international migration. This shows international migration would not be beneficial to poor. He explained that migration can be costly scheme. It is mainly for the well-off households. And only they are capable of undertaking migration process and later send remittance. For that reason the poor people are neglected from the remittance payment. At the end of the day inequality progresses which tends to exacerbate poverty. UNCTAD (2010) report advocates that there is still a sizable debate on this nexus.

Ahamed and Ehsan (2005) insisted that international labor migration is one of the strategies for dipping poverty in Bangladesh. Hussain, Chaudhary and Hassan (2009) did regression on Pakistan and showed that international migration lessened poverty in

Pakistan. The relation was indirectly proportional and statistically verified. Basically, income soar would make the distribution of income in Pakistan more even or cut down the gap between the rich and poor. Hereafter, the poverty would be eradicated.

In SACEPS paper (2007) it is clearly stated that remittance does reduce poverty an income inequality for South Asian countries to a certain extent. Simultaneously in the World Migration Report (2010) this topic is discussed and said it is still a controversial topic. Conclusively, labor mobility and poverty has abstruse findings. Last of all there are no uniform findings in context of remittance and poverty nexus.

#### d) *Financial capital flow*

Financial flow of capital can only be possible in the event of financial liberalization. Financial liberalization refers to the deregulation of domestic market and capital account. In simpler terms it means opening up the economy financially. Financial liberalization causes the mobilization of savings and allocating saving into investment in the most productive sector. This is how allocation of resources in the productive sector raises productivity. This rise in productivity would react positively into the economy. This is how the economic growth would buildup. And neo classical theory confirms that rise in productivity would proceed to economic growth. Additionally Kuznets (1955) inverted U hypothesis confirm that economic growth would dwindle income inequality and weaken poverty after a certain stage.

Bacchetta and Wincoop (1998) tested the attachment between financial openness and poverty for emerging markets which is adverse and statistically significant. They described financial openness would increase the capital flow into that particular country and consequently investment would stimulate. This stimulation in investment promotes economic growth. And economic growth ultimately assists to drive down poverty. Rodrik (1998) investigated about financial liberalization and poverty on developing country which ended up having a positive correlation between them.

Jalilian and Kirkpatrick (2002) study about financial liberalization and poverty on 16 developed countries lead to indirect relation. In other words the more financially open the economy the lesser would be the extent of poverty. On the other hand Rodrik (1998) result was conflicting from previous one. Arestis and Caner (2004) report represent financial liberalization would hamper the economy through financial crisis. And financial crisis would make the situation of poverty much aggravated.

Contrariwise, Edison et al. (2002) found diverse evidence for East Asian countries. So to finish off, financial liberalization effect on poverty is vague. This is because some of the country has positive influence and some of them had negative influence on poverty.

From the empirical evidence found in the previous literature it can be concluded that the impact of economic globalization on poverty acquired distinguish consequence. There are no consistencies in the findings. Therefore an ambiguous bond between economic globalization and poverty is asserted. The next chapter will build the theory on economic globalization and poverty which might condense the ambiguity confusion.

## IV. THEORETICAL FRAMEWORK

### a) *Kuznets hypothesis*

Kuznets (1955) explained that during the initial stage of economic growth the distribution of income would be highly unequal. It means that a large share of pie would be shared by only a small percentage of population. But at a later stage the fruits from economic growth would be divided equally. The equal distribution of income in the country would cause the gap of rich and poor to squeeze. Henceforth, the poverty rate would go downward.

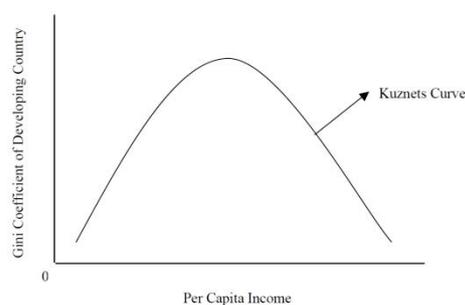


Figure 9 : Kuznets Inverted U hypothesis.

Source: *Todaro and Smith (2009, 227)*

In the diagram above the U-shape illustrates the Kuznets (1955) theory. The vertical axis is labeled as gini coefficient. Gini coefficient is an estimate for measuring income inequality. And the horizontal axis is characterized as per capita income. This is a gauge of income. We can clearly see that in the primary stage it degenerate the income inequality and it carries on. This is how it impairs poverty rates as well. But after a certain point of time the income inequality starts to decelerate and the downturn goes on. In turn, the poverty rate drops down gradually.

Kuznet (1955) hypothesis will not be counted if practically it is not validated. There are lots of authors whose research is consistent with the Kuznets findings for example Adelman and Morris 1973. Barro (2000) findings was similar with Kuznets one. Conversely, Deininger and Squire (1998) outcome contradicted with Kuznets view. The writers above got evidence both from developed and developing countries.

### b) Comparative advantage

Different countries of this world are bestowed with different resources. For instance, Middle East countries like Saudi Arabia and Qatar have oil. Conversely, African countries like South Africa has gold and diamond mine. Therefore different resource endowment reflects that different countries are efficient in producing different product. Basically, a single country cannot produce all the goods efficiently and productively that it requires. Consequently if all countries produce goods in which they have comparative advantage and trade those with each other then each party would be beneficial (Krugman and Obstfeld, 2006). They also proved that if every country work according to the theory of comparative advantage the overall world output would expand. Krugman and Obstfeld (2006, 26) said "a country has a comparative advantage in producing a good if the opportunity cost of producing that good in terms of other goods is lower than it is in other countries". David Ricardo is the mastermind and the inventor of the theory of comparative advantage.

If a country allots all its effort and resources in the sector in which they have comparative advantage then they will be able produce goods further efficiently and productively. As a result, the overall output of the world would upsurge. So now each country would have more goods to trade with each other. As mentioned earlier, one aspect of economic globalization is free trade across nations. Thus globalization would lead to free trade of goods and services. In other words globalization triggers more trade openness and for which movement of goods becomes simpler.

Bhagwati and Srinivasan (2002) discussed about the globalization process during the early 1980's for countries like China and India. He revealed that during the early 1980's India and China was implementing globalization process through opening up their economy to the rest of the world. To be precise, they were implementing trade liberalization policy i.e. free trade. So free trade implies abolishing any type of barriers or restriction related to trade. They stated free trade steered to economic growth during that period in India and China. And economic growth escorted to a massive reduction in poverty rate in that period. UNCTAD (2002) found that trade slashes poverty for least developed country.

Nonetheless, model of comparative advantage encompasses certain glitches. Firstly it does not take into account the notion of transportation cost. Transportation cost is a vital cost in international trade. If the transportation cost is high then it would add to the price of the good. Eventually the price of the goods would be higher. This shatters the cost advantage. Likewise, the comparative advantage theory is a one factor model. The theory assumes that only factor of

production is labor. It neglects other important factor of production such as capital.

In opposition, we also came across a number of negative empirical evidence. Bhattarai (2011) analysis on South Asian countries obtained mixed result. In other words trade aggravated poverty for Bangladesh, Nepal and Pakistan. Harrison (1996) result was skeptical about trade and poverty.

### c) Neo classical theory

Economic growth is prompted by several elements as far as neo classical theory of growth is concerned (Meade, 1961). Firstly by providing training and education to the labor augments the growth process (Meade, 1961). He says this process enhances the productivity of workers which ended up in economic growth. Then accelerating the amount of capital can stimulate growth (Meade, 1961). Moreover capital can be raised by increasing the quantity of savings and investments. Furthermore modern technology can provoke growth (Meade, 1961). And this modern technology is originated from investment in research and development. Lastly larger extent of labor generates economic growth (Meade, 1961). Nevertheless Meade (1961) asserted that neo-classical economists supports the subsequent approaches should be inspired:

1. Completely competitive market.
2. Privatization of state owned enterprises.
3. Opening up the economy from closed to open i.e. more exposed to the rest of the world.
4. Motivating more FDI and unrestricted trade by opening the local economy to the rest of the world.

Perfectly competitive market is a situation where inefficient producer are driven out of the market (Sloman and Wride, 2009). This is because in perfectly competitive market impeccable information and severe competition prevails in the economy. Mosedale (2004) argue that competition is a technique of reducing poverty in least developed country. The situation of stringent competition would encourage efficiency. And efficiency is the main root of higher productivity. The growth of productivity implies higher income. This is how when income rises poverty decays. However Godfrey (2008) was in favor of competition for abating poverty but his main concern was in the competition law and legislation. He claims that LDC law and order system is fairly weak compared to developed country. The competition policy would not be operating properly in the poverty reduction process if the law concerning the competition is not effective.

Usually LDC state owned enterprises are inefficient compared to developed countries one. The privatization of all the state owned enterprise would make the industry further efficient. Consequently improved efficiency would lead to better productivity. Additionally higher productivity denotes excess income. When income rises then less people will fall below under

the poverty line. This is how poverty would be eradicated. Generally, majority of the LDC government employs more employers than needed. Typically, most of the LDC has labor surplus economy. This is the main goal behind hiring additional labor. During the privatization process the extra worker would be sacked. In other words they would make them redundant to become efficient. The redundancy would increase the unemployment rate. And rise in unemployment would exacerbate poverty.

The Heckscher-Ohlin model of international trade is a more dynamic and realistic model than the comparative advantage model. This is due to its assumption. This model emphasizes on the fact that each country should produce those goods in which they have abundant factor of production. Fundamentally, each country is bestowed with different input. For instance, some countries are endowed with labor other with capital. So we can claim developed country has more capital in contrast to LDC. As a result they should produce more capital intensive goods. The purpose behind that is to produce the goods as efficiently as possible. If a country is more capital intensive then the cost of producing the good with profuse factor is relatively economical. Naturally, scarce factor of production would be expensive to engage in the production process. Therefore if each country produces its goods according to its factor endowment then the overall world output would expand. Furthermore if they trade then both countries would be benefited by getting more of the good. For example, if each country produces all the goods it need then they have to devote resource in the production process for which they do not have plentiful input. Thus they would get less of both the good.

However this model is bit unrealistic in the sense that it requires more than two inputs to produce certain good. In addition the theory is based on a given state of economy and with a given production function and does not accept any change.

Romer and Frankel (1999) empirically found that trade is one of the reasons for economic growth. And economic growth would support to wipe out poverty. Additionally the UNCTAD (2002) also proved the fact that trade improves poverty for LDC. However, Dollar and Kraay (2002) cross country regression found that trade does not ease poverty over 72 developing countries. This is because of the unequal distribution of reward from economic growth.

Opening up the economy not only encourages import and export of goods and services, but foreign investment with it as well. Theoretically, Kotrajaras (2010, 13) revealed "there are several ways FDI can facilitate an economic growth". Kotrajaras (2010, 13) said "in neoclassical growth models with diminishing returns to capital, FDI has only a short-run growth effect as countries move towards a new steady state". In this

view, Kotrajaras (2010, 13) said "FDI-related technological spillovers offset the effects of diminishing returns to capital and keep the economy on a long-term growth path". Moreover, he clarified "endogenous growth models imply that FDI can promote long-run growth by augmenting the existing stock of knowledge in the host economy through labor training and skill acquisition". Therefore, with the benefit of knowledge dissemination and increased capital stock, FDI is a gift especially for developing countries. Ultimately, it has a central influence on stimulating economic growth and eventually attenuating poverty. There are lot of empirical evidence found for FDI and poverty in literature such as Stiglitz, 1998; De Mello (1997).

However there is certain empirical evidence which goes against foreign direct investment and poverty. Rodrik (1997) was skeptic about the link between FDI and poverty. Baddeley (2006) report on the developed economy established that FDI augment poverty.

#### d) *Poverty*

Poverty has numerous faces which are caused by several factors and have various repercussions. It has both financial and non-financial dimension. There are many obstacles and barriers which attribute to poverty. Additionally these constraints reinforce each other. In LDC it is primarily characterized by the succeeding characteristics:

- Lack of entitlement or parental asset: In developing country the poor people has less access to resources in comparison to developed country. Land can be used for cultivation or other production services. Land resource can be used as a source of income. This income can act as a dose to exterminate poverty. In LDC people are poor because they do not have the privilege of parental asset. This is because their parents also endured poverty. For which they do not have the capacity to devote land to their children. And those who get the access to land they do not have enough resource to invest for production.
- Trade created poverty: In LDC there exist a lot of infant industries in contrast to developed countries. Infant industries are those which are new and quite inefficient compared to the industries in the developed country. Therefore they have to be protected by the government. Without the government intervention they cannot survive in the market. However trade from other countries would flood LDC with cheaper goods. And the infant industry products would not be able to be price competitive with the foreign goods unless they are highly protected by tariff or non-tariff barrier. As a result, inflow of foreign goods would drive the infant industry out of the market because of weak price competitiveness. Thus it would create a lot of

unemployment for which income falls. This is how poverty will worsen in LDC by trade. But the advantageous thing is that trade would lead LDC the access of cheaper goods.

- Lack of education and training: Illiteracy is quite common in LDC. LDC comprises huge amount of population. And governments of LDC do not have sufficient funds to promote education and training for the mass population. So the illiteracy rate is quite high for LDC which is very unlikely in developed country. The lower literacy rate and lack of training denotes that they cannot get good jobs. In other words their source of revenue further lessens. Lower income mean they cannot satisfy the minimum level of subsistence for living. Hence they are associated in the poverty web. However, there are certain detrimental effects of government providing education and training which is brain drain. Specifically, individuals from LDC migrate to developed country permanently for superior income.
- Failure of public services to reduce poverty: In most of the LDC essential public services such as electricity, roads and highways are provided by the government. To be exact these services are provided by state owned enterprises i.e. nationalized industry. The nationalized industries are likely to be inefficient than privatized industry. Electricity is vital for the production process. Basically irrigation process needs massive amount of electricity. Failure to provide it in adequate quantity during the harvesting season would hamper the agriculture production. Hindrance in the agriculture production would primly hurt the poor. This is because most of the poor in LDC make their living on agriculture. Hence the poor people would not be able to generate higher income. In this case they would not be able to get out from the mesh of poverty. But nationalized industry employ more workers than it is needed which might help to foster employment rate.
- Cruel market forces: In LDC the market conditions are harsh for the poor people, convenient for the rich people. In other words poor do not have the easy access to credit like the wealthy. This is due to the fact that the low income group does not have ample security on the basis of which loan is sanctioned. Specially, in the rural areas the poor farmers are exploited by the rich landowners. Furthermore the poor do not have access to subsidized pesticide and fertilizer. The influential and rich farmers have networks with key person and institution. By this link only the influential farmers and landowners get the resource. On the other hand the poor farmer has no contact with these person or institution. As a result to get hold of this resource is awfully tough for them. Finally all these

factors act as an obstruction to the production process. For which they could not yield income for their subsistence easily and thus remain poor.

- Centre-periphery approach: Basically, in majority of LDC most of the services, facility such as good hospitals, airports, university etc. and industry are all centered toward the capital city. The opposite situation prevails in the developed country where popular services are available in small town as well. In general most of people in LDC live in small town and villages. Usually majority of the areas apart from the capital city in LDC are deprived in contrast to developed country. From these we can argue that preponderance of economic activity occurs in the capital city of LDC. Therefore the people in other region are not economically active paralleled to the capital city. Consequently higher population living in the deprived area is one of the sources of poverty.

After reviewing the theoretical framework the equivocal connection between economic globalization and poverty is quite clear. Subsequently, the next chapter follows on building the research design.

## V. RESEARCH DESIGN

### a) Methodology

The study spotlights mainly the economic aspect of globalization. Furthermore how this economic globalization affect the chief divisions of Bangladesh. The key divisions are Khulna, Rajshahi, Dhaka, Chittagong, Barisal and Sylhet. However Rangpur division is not included as it was announced the one of the key divisions very late in the late 2000. Previously there has been several works on economic globalization and poverty in the perspective of Bangladesh. Also, numerous studies had been completed on the developed, Asian, African, OECD, North America, Gulf and Latin American countries. In those reports economic globalization mainly represents foreign direct investment, total trade of merchandise and services, international labor migration and international financial flow of capital.

However Bangladesh has been liberalizing financially but only one sided. There are lot of incentive and other policies which motivates the financial capital to enter into Bangladesh. That's why there are quite a number of foreign banks life insurance companies. Additionally few foreign financial institutions also exist in Bangladesh. Plus, there are two stock exchanges in Bangladesh one is in Dhaka and the other one in Chittagong. According to the efficient market hypothesis Bangladesh has a weak form of efficient market system. The weak form means that historical price and data are ineffective in predicting subsequent share price deviations in both the stock exchange in Bangladesh. But Bangladesh government has been very generous from the view point of financial flow of capital coming

into Bangladesh. But in the financial capital flow viewpoint Bangladesh lags behind in comparison to FDI and international labor migration. Hence international flow of capital has been globalized but not to a greater extent as FDI and trade. Additionally weak form of capital market efficiency do not brings in extensive inflow of international capital in contrast to others modes of economic globalization in Bangladesh. Then again the Bangladesh government policy is absolutely opposite of financial capital flowing out of the economy. Several restrictions are imposed when citizen of the country want to invest money into foreign economy. Bangladesh is particularly a LDC having superfluous extent of physical labor and scarcity of financial resources. So if the financial funds are left to move out from the country then the economy would be in genuine predicament. As a result the economy might head towards financial crisis. Therefore to get rid of erroneous impact on economic globalization the study did not take into consideration this in economic globalization process. Besides, economic globalization does not give any biased result for different divisions that's why it is detached. Fundamentally economic globalization would trigger influx of foreign financial capital in to the region that has stock exchange. Consequently the circumstances might be biased for some regions for which it is excluded.

The analysis in this paper is absolutely based on quantitative study which is complemented by theory. Therefore secondary data is the primary source of data. By the help of secondary data the study concentrated on statistical correlation, panel regression and dummy variable analysis in this paper. Basically Stata 12 is the statistical software for implementing this statistical technique. And this study of economic globalization on the division is done for the first time to the best of our knowledge.

#### b) *Dependent variables*

This paper totally accentuated on quantitative study of the interplay between poverty on economic globalization throughout out the six principal divisions of Bangladesh. Moreover poverty is the dependent variable in this paper. We would quantify it across the main six divisions of Bangladesh. So, to quantify the poverty we will use head count rate (HCR). Indicators for Monitoring the Millennium Development Goal (2003, 7) describes poverty head count rate as "the proportion of the national population whose incomes are below the official threshold (or thresholds) set by the national Government". BBS calculates HCR using the (CBN) method since 1995. Basically "in CBN method it is a process of counting the poor on the consumption expenditure threshold and which is expressed in percentage term" (BBS, 2011a). Consumption expenditure contain expenditure on food items which are rice, wheat, pulses, milk, oil, meat, fish, potato,

other vegetables, sugar and fruits (BBS, 2011a). They produce this basket on the basis of 2122kcal per day scheme. It also comprises nonfood items. Malik and Januja (2011) used HCR to measure poverty for Bangladesh, Pakistan and India. He described HCR as a measure of poverty is very easy to calculate. Plus, the HCR based on the national thresholds are more reliable and accurate. Contrariwise, the problem occurs upgrading over time. McLeod (2007) also used HCR to quantify poverty. Although McLeod (2007) mentioned HCR cannot be internationally compared but he consented with Malik and Januja (2011). The headcount rate of poverty is calculated by HIES by BBS. The problem is that it is done after every five years for every division. So the data range is 1990, 1995, 2000, 2005 and 2010. The data of headcount rate from 2000 to 2010 is collected from the electronic web site of BBS. And the data of headcount rate of six divisions from 1990 to 1995 is collected from the MDG (2005) report.

#### c) *Independent variables*

The independent variable in this paper is economic globalization. In this paper first aspect of economic globalization is free trade. So we free trade is computed as the total value of exports and import of merchandises and services in a single yea. It is measured at current prices in US dollar and at current exchange rate. Jan (2002) listed free trade as one of the dimension of globalization. In that report they measured free trade by total value of goods and service exported and imported. The problem with this measure is it is not inflation adjusted and giving us an overestimated value of free trade. But Reuveny and Li (2004) and Mahler (2003) used import and export of goods and services as a percentage of GDP to quantify free trade. However this method is quite contradictory. Rodriguez and Rodrik (1999) criticize this method of calculation as they are highly correlated in conjunction to other sources of inadequate economic performance. The trade data which is the total value of import and export of good and services have been collected from the BBS (2010a) through CD-ROM. The trade data according to six main divisions of Bangladesh is taken from the year 1986 to 2010.

The second independent variable is FDI. FDI is gauged as total inflow of FDI into Bangladesh. Hussain, Chaudhary and Hassan (2009) discussed that FDI is one of the feature of economic globalization. They used FDI inflow to measure the FDI in Pakistan. We have estimated it using US dollar at current prices and at current exchange rate. The problem with this measure it is not inflation adjusted and giving us an overestimated value of FDI inflow. However there are a number of authors who took FDI as a percentage of GDP. Among them are Reuveny and Li (2004) and Mahler (2003). This research acquired FDI inflow other than FDI as a percentage of GDP because with a view to attaining raw

impact of FDI inflow on poverty. Foreign Direct Investment data has been attained from BBS (2010b) by CD-ROM. The FDI data according to six main divisions of Bangladesh is taken from the year 1986 to 2010

Lastly the third independent variable is international labor migration. International labor migration would be determined by the revenue that it brings in i.e. remittance inflow. It is weighed using US dollar at current prices and at current exchange rate. In the literature various authors took remittance variously. The problem with this measure it is not inflation adjusted and giving us an overestimated value of remittance inflow. South Asia Centre for Policy Studies SACEPS paper (2007) clearly states international labor migration is counted on the basis of the remittance inflow. This investigation has taken remittance inflow other than remittance as a percentage of GDP for grasping the crude impact of FDI on poverty. The remittance data according to six main divisions of Bangladesh from the year 1986 to 2010 have been acquired from the Bangladesh Bank (2011) in a CD-ROM which is the central Bank of Bangladesh.

Finally this analysis considers a domestic factor which has been regularly used in the previous studies. Bangladesh is a labor surplus country. Its population is more than 170 million. In addition the working population of Bangladesh is more than 50 million (UNCTAD, 2000). Such a massive amount of working population can be influential to economic globalization process. This study takes population as one of the control variable. Dreher and Gatson (2008) also took population as one of the control variable in their study on globalization and inequality. He clarified that higher population mean greater amount of working labor force. This indicates more people working and contributing to the process of economic growth. And economic growth might play a role in plummeting poverty. Furthermore the population data divided across the six divisions of Bangladesh was acquired from BBS (2011b) population census from 1986 to 2010.

#### d) Model

Initially the study commence with statistical correlation to find the association of poverty and economic globalization on the main six divisions of Bangladesh. For an effective analysis, it will embark upon a panel regression scheme comprising data from the essential six divisions of Bangladesh, on Stata 12. Thus in general the regression formulation will be as,

$$POV = B_0 + B_1POP + B_2TRAD + B_3FDI + B_4REM + e$$

Where

$B_0$ =Intercept,  $B_1, \dots, B_4$ = Coefficients,  $POV$ =Poverty,  $FDI$ =Foreign Direct Investment,  $REM$ = Remittance,  $POP$ =Population,  $TRAD$ =Total trade of goods and services,  $e$ = Error term

In this study the dependent variable is poverty and the data of poverty is calculated after every five years. The poverty head count rate data is calculated on a five years average basis. So to make the all the independent variable uniform with the dependent one it is converted into five year average. The first model would be random effect model and the second model would be fixed effect model. The research would work on both these model and then compare the final result of the two models. Both of these models operate to eliminate omitted variable bias. Fixed effect model assume that specific impact is correlated to the independent variable. Random effect model assumption is the other way round. It specific effects are uncorrelated with the independent variable. Random effect model can infer on larger extent of population. This is because they assume that errors are normally distributed. Fixed effect model can infer particularly on a specific subject. However a specific model could not be selected in this model. The lack of data deficiency did not allow us to perform Durbin-Wu Test or Hausman Specification Test to choose the particular model. This problem arises because of the five year average problem. Finally perform dummy variable analysis is completed divided through major divisions. Dhaka is the capital city of Bangladesh which happens to be affluent division among all. This is to compare all other divisions with Dhaka.

#### e) Hypothesis

Bangladesh has been adopting economic globalization tremendously during the mid-1990. And at the same time the headcount rate of poverty has been succeeding a decelerating trend. Consequently our hypothesis is economic globalization has slacken poverty in the six key divisions of Bangladesh. Precisely, trade shrinks poverty in the major six divisions of Bangladesh. Then FDI inflow slashes poverty in the main six regions of Bangladesh. Additionally, remittance inflow lowers the poverty of the principal six states of Bangladesh. Lastly population eases the poverty rate in six key divisions of Bangladesh. As a result the following results are expected which are  $B_1 < 0$   $B_2 < 0$   $B_3 < 0$   $B_4 < 0$ .

## VI. PANEL DATA MODEL OF POVERTY IN BANGLADESH

#### a) Correlation matrix

Correlation measures how intensely two variables are related (Guajarati, 2005). In the table below we can see that trade of merchandise and services and remittance inflow has high correlation with poverty. The correlation of poverty with trade and remittance inflow is .7117 and .8397 respectively. Moreover the negative sign indicates that there exists inverse relation between them and values closer to one signify perfect relation with each other. In other words if one variable increase then the other one would decrease in the same

percentage and vice versa. Population has correlation of -.1510 with HCR which is very low. This means HCR bond with population is not strong. We can say this as

value close to zero has relationship totally random. Lastly FDI has a correlation of -.4270. This value denotes moderate correlation with HCR.

Table 1 : Correlation Matrix

	HCR	TRAD	REM	FDI	POP
HCR	1.0000				
TRAD	-0.7117	1.0000			
REM	-0.8397	0.7675	1.0000		
FDI	-0.4270	0.8414	0.3931	1.0000	
POP	-0.1510	0.2876	0.0464	0.4105	1.0000

b) Random effect model

$$y_{i,t} = \beta_{0,i} + \beta_{1,i}X_{1,i,t} + \beta_{2,i}X_{2,i,t} + \beta_{3,i}X_{3,i,t} + \beta_{4,i}X_{4,i,t} + e_{i,t}$$

$i = 1 \dots 6$ , and  $t = 1 \dots 5$ , for 1990, 1995, 2000, 2005, 2010.

1=Dhaka, 2=Chittagong, 3=Sylhet, 4=Barisal, 5=Rajshahi, 6=Khulna Y=Headcount Rate  
 X<sub>1</sub>=Population X<sub>2</sub>=Trade of goods and services X<sub>3</sub>= Remittance inflow X<sub>4</sub>=Foreign Direct Investment

Table 2 : Random-effects model variables and coefficients

Variable	Coefficients
Headcount ratio	Random Effects Model (Stan. Errors)
Population(POP)	-.0000842(.0001198)
Total trade of goods and services (TRAD)	-.0000885(.0011199)
Remittance inflow(REM)	-.0381724(.010833)*
Foreign Direct Investment(FDI)	.0005818(.0442537)
Intercept	67.94756(3.907078)*

\*Significant at 1%

Table 3 : Random effect GLS regression findings

Random-effects GLS regression		Number of obs	30
Group variable: id		Number of groups	6
R-sq:	within = 0.7472	Obs per group:	min = 5
	between = 0.5938		avg = 5.0
	overall = 0.7138		max = 5
corr(u_i, X)	= 0 (assumed)	Wald chi2(5)	68.17
		Prob > chi2	0.0000

In the model above Y<sub>i</sub> represent dependent variable which is headcount rate according to different regions. There are six divisions so the value of i is given from one to six. It is explained above which number denotes which region. The time period of this model is for 1990, 1995, 2000, 2005, 2010. β<sub>0</sub> represent the intercept term. And β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub> and β<sub>4</sub> are the coefficient of the independent variables. Then X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub> and X<sub>4</sub> are the respective independent variables and each of its names is specified above. Nonetheless, the intercept term is statistically significant at 1% level of significance. The model has R square of 74.72%. This means almost ¾ of the variation of headcount rate of poverty is explained by

all the independent variables which are population, trade of goods and services, remittance inflow and FDI. It is assumed that the error in this model is normally distributed.

Remittance inflow has a p value of 0.000 (Appendix 1, table 8) for which it is significant at 1% level of significance. As a result we can reject the null hypothesis. So it is consistent with Ahamed and Ehsan (2005) findings. Additionally it has a negative relation with the headcount rate. The negative relation implies that if remittance inflow would increase by .0381724 % then headcount rate of poverty decrease by 1%, ceteris paribus. Moreover the correlation between headcount

rate and remittance is negative .8397(table-1) and statistically significant (Appendix 1, table 11). So the negative result indicates opposite link between remittance and headcount rate. Particularly, if remittance inflow increases then poverty would decrease and vice versa. The value close to one denotes high correlation i.e. very close relation with one another. Thus it can be inferred that a remittance inflow has an impact on sinking poverty across six main division of Bangladesh. Remittance inflow can also get rid of vicious cycle of poverty in Bangladesh. Nurkse (1952) said country with low level of national income has smaller capacity to save. The low real income is the outcome of low productivity. And low productivity is due to lack of capital. The issue behind shortage of capital is small capacity to save and so the circle is vicious. Remittance would increase the national income of the Bangladesh. This is how the productivity would galvanize. It is only possible because of sufficient capital which in turn is largely due to the capacity to save. And the capacity to save rises due to increase in the rise in national income. Thus remittance inflow would eradicate the vicious circle of poverty.

FDI has a very high p value (appendix-1, table 8) for which it is statistically not significant. Besides, it has directly proportional connection with the headcount rate of poverty. Directly proportional link denotes a rise in the FDI inflow would also increase headcount rate. Particularly, here FDI is creating the situation of poverty further inferior in the main six divisions of Bangladesh. Stark and Levhari (1982) detected direct relation between poverty and remittance inflow. This shows FDI inflow would not be beneficial to poor. FDI does generate a huge flow as investment into the major divisions of Bangladesh. The foreign capital investment of foreign investor complemented by the labor of Bangladesh would create economic growth in Bangladesh. The main question is how the growth is distributed among the population. Since positive nexus exists between headcount rate of poverty and FDI then it

is most obvious that the reward of economic growth is distributed unequally.

Then again total trade value of goods and services do not have any impact on headcount rate of poverty. This is due to the fact that the p value is very high (Appendix 1, table 8). For this reason the null hypothesis cannot be rejected. The bond between total trade of goods and services and headcount rate of poverty is negative although they are not statistically meaningful. The negative association signifies opposite movement concerning head count rate of poverty and total trade of goods and services. This means as headcount rate of poverty declines then trade of goods and services enlarges, ceteris paribus. To be specific, if the total value of trade of goods and services rises by .0000885 % then headcount rate of poverty would fall by 1% and vice versa if all other thing remain constant. Besides, there exists negative correlation between headcount ratio and trade of goods and services. The correlation is negative .7117 which is statistically significant (Appendix 1, table 11). So, reverse link suggests that as one variable increases the other decreases. Subsequently as trade of goods and services escalates then head count rate decelerates. And value of .7117 represents moderate link between the two. Therefore the conventional wisdom holds for trade and poverty. So if Bangladesh works in corresponding to comparative advantage theory then they can emphasize on the production of goods and services in which they have comparative advantage. The theory of comparative advantage would guide the production to proliferate. As a result, Bangladesh would be beneficial because they would be left with extra goods than previously. Hence they have more goods to trade with other countries. Additionally trade expansion is a tool of economic growth (Romer and Frankel, 1999). Bhagwati and Srinivasan (2002) empirically found that freer trade would help the poor countries to lessen the poverty. This is how the negative nexus between poverty and trade can be defended.

c) Fixed effect model

$$y_{i,t} = \beta_{0,i} + \beta_{1,i}X_{1,i,t} + \beta_{2,i}X_{2,i,t} + \beta_{3,i}X_{3,i,t} + \beta_{4,i}X_{4,i,t} + e_{i,t}$$

$i = 1....6$ , and  $tt = 1....5$ , for 1990, 1995,2000,2005,2010.

1=Dhaka, 2=Chittagong, 3=Sylhet, 4=Barisal, 5=Rajshahi, 6=Khulna

Y=Headcount Ratio

$X_1$ =Population  $X_2$ =Trade of goods and services  $X_3$ = Remittance inflow  $X_4$ =Foreign Direct Investment

Fixed-effects model variables and coefficients

Variable	Coefficients
Headcount ratio	Fixed Effects Model (Stan. Errors)
Population (POP)	-.0001338(.000129)
Total trade of goods and services (TRAD)	-.0010759(.0013744)
Remittance inflow (REM)	-.038419(.010911)*
Foreign Direct Investment (FDI)	.104803(.0782799)
Intercept	66.32416(3.884355)**

\*Significant at 5%, \*\* significance at 1%

Table 5 : Fixed-effect GLS regression findings

Fixes-effects GLS regression		Number of obs	30
Group variable: id		Number of groups	6
R-sq:	within =	Obs per group:	min =
	0.7773		5
	between =		avg =
0.0197	5.0		
overall =	0.4970	max =	5
corr(u <sub>i</sub> , X)	=	F(4,20)	17.45
	0 (assumed)	Prob > F	0.0000

In the model above  $Y_i$  represent dependent variable which is headcount rate according to different regions. There are six divisions so the value of  $i$  is given from one to six. It is explained above which number denotes which region. The time period of this model is for 1990, 1995, 2000, 2005, 2010.  $\beta_0$  represent the intercept term. And  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  are the coefficients of the independent variables. Then  $X_1$ ,  $X_2$ ,  $X_3$  and  $X_4$  are the respective independent variables and each of their names is identified above. The fixed effect model also brings about almost the same conclusion as in the previous model. The model has R square of 77.73%. This means more than  $\frac{3}{4}$  of the variation of headcount rate of poverty is explained by all the independent variables which are population, trade of goods and services, remittance inflow and FDI. The probability of F is 0.000 and at the same time critical value of F is 17.45. Thus the null hypothesis can be rejected due to it is statistically significant. It is significant at 1 percent level of significance. Subsequently, from the significance it can be claimed that regression has got explanatory power. Moreover this model errors has got autocorrelation.

Firstly, the p value of the intercept is .000 and its corresponding critical value is 17.07(appendix-1, table 9). This indicates null hypothesis can easily be rejected and it is statistically valid at 1 percent level of significance. Then remittance inflow and poverty is found to be econometrically valid. The p value is .002 (Appendix 1, table 9) so it is significant at 5 percent level of significance. And on top of there exists inverse tie. Specifically, a rise in the remittance inflow would ameliorate the poverty in the main six division of Bangladesh. Fundamentally, a rise in international labor migration swells income distribution of the foremost divisions of Bangladesh through inflow of remittance. Basically, income soar would make the distribution of income in Bangladesh more even or cut down the gap between the rich and poor. Hereafter, the poverty phenomenon would be eradicated. Hussain, Chaudhary and Hassan (2009) did regression on Pakistan and got analogous conclusion for Pakistan. The relation was indirectly proportional and econometrically verified.

Additionally, population has no impact on poverty in the principal six regions of Bangladesh due to statistically insignificant. Additionally reverse relation

was found among them. To be exact, higher population in a LDC implies more labor who can contribute to the production process. Bhagwati and Srinivasan (2002) discussed in his paper about the same fact. He denoted that countries like India and China used their population as one of their equipment to alleviate poverty. He said population can be used as labor and it can be used to produce labor intensive goods. And then they exported labor intensive goods to other countries. Thus it initiated economic growth in India and China during the eighties. Lastly the economic growth was one of their therapies for enhance poverty in China and India in that era. According to Lewis's two sector model of underdeveloped economies, it consists of two sectors.

A traditional sector which is in the rural area mainly overpopulated, whose main source of living is agriculture. Their marginal productivity is zero. The other sector is modern industrial sector where the marginal productivity is very high. Todaro and Smith (2009) discussed Lewis's two sector model which concluded that movement of surplus labor from rural traditional sector to modern industrial sector can be done without any loss of output. As a result the transferring of labor means the number of labor contributing in the efficient sector would increase. Thus they can be able to produce more industrial goods. And globalization would guide them to export those goods. Furthermore globalization also fetches foreign investor into the host country. This is how they would be able to get jobs in that company. Lastly both these would create employment and increase their level of income. Thus it would help to wipe out poverty.

This fixed effect model has one core glitches. The error in the fixed effect model has serial autocorrelation (Appendix 1, table 9). The data deficiency is one of the foremost reasons behind it. And for data deficiency operation of any econometric procedure was not possible to remove the autocorrelation.

d) *Dummy variable analysis*

$$y_{i,t} = \beta_{0,i} + \beta_{1,i}X_{1,i,t} + \beta_{2,i}X_{2,i,t} + \beta_{3,i}X_{3,i,t} + \beta_{4,i}X_{4,i,t} + \gamma_1D_1 + \gamma_2D_2 + \gamma_3D_3 + \gamma_4D_4 + \gamma_5D_5 + e_{i,t}$$

$i = 1 \dots 6$ , and  $t = 1 \dots 5$ , for 1990, 1995, 2000, 2005, 2010.

1= Chittagong, 2= Sylhet, 3= Barisal, 4= Rajshahi, 5= Khulna

Y=Headcount Ratio

X<sub>1</sub>=Population X<sub>2</sub>=Trade of goods and services X<sub>3</sub>= Remittance inflow X<sub>4</sub>=Foreign Direct Investment

D<sub>1</sub>=Chittagong D<sub>2</sub>= Sylhet D<sub>3</sub>=Barisal D<sub>4</sub>=Rajshahi D<sub>5</sub>=Khulna

Table 6 : Dummy variables and coefficients

Variable	Coefficients
Population(POP)	-.0001338(.000129)
Total trade of goods and services (TRAD)	-.0010759(.0013744)
Remittance inflow(REM)	-.038419(.010911)***
Foreign Direct Investment(FDI)	.104803(.0782799)
Intercept	52.41544(9.321855)*
<b>Dummy Variables</b>	
Chittagong	14.97012(8.596546)***
Sylhet	17.94576(10.40749)***
Rahshahi	21.61628(8.900585)**
Khulna	11.66455(8.805559)
Barisal	17.25562(8.968591)***

\*Significant at 1%, \*\* significance at 5%, \*\*\*significance at 10%

Table 7 : Dummy variable regression

Random-effects GLS regression		Number of obs	30	
Group variable: id		Number of groups	6	
R-sq:	within =	0.7773	Obs per group:	
	between =	1.0000		min =
	overall =	0.8184		avg =
			max =	
corr(u_i, X)	=	0 (assumed)	Wald chi2(5)	90.13
			Prob > chi2	0.0000

In the model above  $Y_i$  represent dependent variable which is headcount rate according to different regions. There are six divisions so the value of  $i$  is given from one to six. It is explained above which number denotes which region. The time period of this model is for 1990, 1995, 2000, 2005, 2010.  $\beta_0$  represent the intercept term. And  $\beta_1, \beta_2, \beta_3$  and  $\beta_4$  are the coefficient of the independent variables. Then  $X_1, X_2, X_3$  and  $X_4$  are the respective independent variables. Here  $X_1$  denotes population and  $X_2$  indicates trade of goods and services. In addition,  $X_3$  and  $X_4$  specifies remittance inflow and foreign direct investment respectively. The indicated variable is showed by  $D_1, D_2, D_3, D_4$  and  $D_5$ . And the indicator variables  $D$  only takes two value which is either zero or one. So for Chittagong  $D_1$  is equal 1 if other we put zero.  $\gamma$  is the coefficient of the indicator variable.

Dhaka is the capital city of Bangladesh and the largest city in Bangladesh. Without any doubt it is the most affluent region in Bangladesh. So to get rid of the dummy variable trap and to make a comparison with

other five chief divisions of Bangladesh the variable Dhaka is excluded. The intercept term is positive and also significant at 1 percent level of significance. The model is quite fit due to the fact that R square which is 77.73%. Accordingly, more than ¾ of the variation of the headcount rate of poverty can be explained by the all the independent and dummy variables.

In the model above all the divisions are econometrically valid except for Khulna division and has positive link with poverty. In other words incorporating any individual division would deteriorate poverty holding all other things remaining constant. Likewise, if Sylhet is include then ceteris paribus the HCR rate of poverty would escalate by 17.94576. Similarly, incorporating Rajshahi would deteriorate the headcount rate of poverty by 21.61628, ceteris paribus Lastly the Khulna division is not statistically significant since the p- value is extremely high (Appendix 1, table 10). But it has positive affiliation with poverty. Therefore from this it can be inferred that the impact of economic globalization is not spread equally in the major divisions of Bangladesh.

## VII. LIMITATION

In this study there are quite a number a limitation. Primarily the data deficiency is the vital limitation of this study. First of all the HCR is calculated after every five year. If the calculation had done on a yearly basis then scenario would have been different. There are a lot of factors which attribute to the diminution of poverty in Bangladesh. Originally micro credit to the poor was the first among them. Nevertheless there is no data access of micro credit across divisions. Moreover the education and land possessed by an individual also influences poverty. Then again, the data were found but for a limited number of years. Thus it abstain from including such crucial variables. Additionally, the lack of data deficiency did not allow us to execute Durbin-Wu Test or Hausman Specification test to choose the particular model. The fixed effect model has autocorrelation which is the major drawback of this paper. The poor dataset did not allow us to run any statistical procedure so that the autocorrelation can be removed. An effort to run GMM estimation was tried but failed to run the test. The data specification was the central impediment. Distinctive techniques such as dynamic macro modeling or dynamic general equilibrium modeling could truly account of both supply and demand side effects. That could be a part of the further study. Similarly such studies should also utilize household survey based dataset rather than macro level data. Finally, it would have been better to get household level panel data, which is not accessible at the moment. Richer dataset can improve conclusions above, particularly relating to human capital variables and micro credit.

## VIII. CONCLUSION

The paper has fundamental objective to empirically investigate the nexus between economic globalization and poverty across the six major divisions in Bangladesh. This study only found the remittance inflow into Bangladesh statistically significant. Furthermore the reverse association reflects contraction of poverty in the main six divisions of Bangladesh. As a result Kuznets (1955) inverted U hypothesis is justified. This is because the remittance inflow supplements the local economy with capital and eventually leads to economic growth. Kuznets (1955) inverted U hypothesis justify that economic growth in a country initially builds up income inequality but ameliorates the poverty and inequality after a certain period.

In spite of getting statistically insignificant result population and trade of goods and services has opposite nexus with poverty through the six chief regions of Bangladesh. The negative relation indicates that population and trade of goods and services upgrades poverty. So the Heckscher-Ohlin model can assist to define the reverse link of trade and poverty.

This model emphasize on the fact that each country should produce those goods in which they have abundant factor of production. Consequently LDC like Bangladesh has surplus labor through which they can produce labor intensive products. Thus they would be left with more good than before for trade. And trade expansion is a tool of economic growth (Romer and Frankel, 1999). As a result economic growth rectifies poverty (Bhagwati and Srinivasan, 2002).

The opposite link of poverty and population is vindicated by Lewis's two sector model. Here Lewis claims that movement of surplus labor from rural traditional sector to modern industrial sector can be done without any loss of output. Furthermore globalization also fetches foreign investor into the host country. This is how they would be able to get jobs in that company. Lastly both these would create employment and increase their level of income. Thus it would help to wipe out poverty.

In this paper positive bond between FDI and poverty was found. In other words inflow of FDI aggravates poverty in the six divisions of Bangladesh. Although positive relationship exists between poverty and FDI inflow, it would not make any substantial difference since they are statistically not valid.

Furthermore dummy variable analysis was executed in this paper. So to make a comparison with other five chief divisions of Bangladesh the capital city Dhaka is excluded. Without any doubt it is the most affluent region in Bangladesh. The result was not very astonishing at all. All the divisions have positive affiliation with poverty. Nevertheless all the divisions were found to be econometrically significant except for Khulna. The impact of economic globalization is not spread equally in the major divisions of Bangladesh.

To conclude from the findings above it can be asserted that provision of education by the government would be most beneficial. This is because better education can create better scope for the workers moving to foreign countries. Hence foreign remittance flow would further boost. Consequently the poverty rate would further decline.

Population can be used very effectively if it is given training. However population was found to be insignificant in this study. Then again, negative association with poverty was found in this paper. This suggests that there is prospering future. In other words if the population is properly trained then the productivity would stimulate. This stimulation would increase their income. And eventually enhance poverty.

The positive nexus of FDI and poverty is alarming for country like Bangladesh. However econometric invalid outcome in this paper relived the tension. Giving too much incentive to the foreign investor could be the reason. This is because incentive such as maximum repatriation of profit denotes they do not need to plough back the profit in the organization or

the country. So the reward was taken back in their home country. So the government of Bangladesh should provide incentive in such a way that should not discourage FDI inflow and as well as trim down poverty rate.

Lastly opposite tie of trade with poverty in this paper denotes the government should open the economy as much as possible. Nevertheless they should also take into account their local industry while opening up their economy. This is because they would be prone to severe competition. Nonetheless they should follow an export promotion strategy of the goods in which they have comparative advantage.

At the end of the day economic globalization can assist to sustain the poverty reduction process. Nonetheless it has to be complemented with decent political environment and appropriate public expenditure.

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APPENDIX : 1

Table 8 : Random-effect model p-value and interval

hcr	coefficient	Std. Err	z	P>  z	[95% Conf. Interval]	
TRAD	-.0000885	.0011199	-0.08	0.937	-.0022833	.0021064
REM	-.0381724	.010833	-3.52	0.000	-.0594046	-.0169401
FDI	.0005818	.0442537	0.01	0.990	-.0861537	.0873174
POP	-.0000842	.0001198	-0.70	0.482	-.0003191	.0001506
_Cons	67.94756	3.907078	17.39	0.000	60.28982	75.60529
Sigma_u	2.638232					
Sigma_e	5.8698378					
rho	.16806045 (fraction of variance due to u_i)					

Table 9 : Fixed-effect model p-value and interval

hcr	coefficient	Std. Err	z	P>  z	[95% Conf. Interval]	
TRAD	-.0010759	.0013744	-0.78	0.443	-.0039428	.001791
REM	-.038419	.010911	-3.52	0.002	-.0611789	-.0156591
FDI	.104803	.0782799	1.34	0.196	-.058486	.268092
POP	-.0001338	.000129	-1.04	0.312	-.0004028	.0001352
_Cons	66.32416	3.884355	17.07	0.000	58.22153	74.42678
Sigma_u	7.5699574					
Sigma_e	5.8698378					
rho	.62450657 (fraction of variance due to u_i)					
F test that all u_i=0: F(5, 20) = 2.12 Prob > F = 0.1050						

Table 10 : Dummy variable model p-value and interval

hcr	coefficient	Std. Err	z	P>  z	[95% Conf. Interval]	
TRAD	-.0010759	.0013744	-0.78	0.434	-.0037696	.0016179
Khulna	11.66455	8.805559	1.32	0.185	-5.594029	28.92313
Rajshahi	21.61628	8.900585	2.43	0.015	4.171457	39.06111
Barisal	17.25562	8.968591	1.92	0.054	-.322496	34.83373
Sylhet	17.94576	10.40749	1.72	0.085	-2.452556	38.34407
Chittagong	14.97012	8.596546	1.74	0.082	-1.878801	31.81904
REM	-.038419	.010911	-3.52	0.000	-.0598041	-.0170338
FDI	.104803	.0782799	1.34	0.181	-.0486228	2582288
POP	-.0001338	.000129	-1.04	0.299	-.0003866	.0001189
_Cons	52.41544	9.321855	5.62	0.000	34.14494	70.68594
Sigma_u	0					
Sigma_e	5.8698378					
rho	0 (fraction of variance due to u_i)					

Table 11 : Correlation matrix with significance.

	HCR	TRAD	REM	FDI	POP
HCR	1.0000 30(obs)				
TRAD	-0.7117 30(obs) 0.0000*	1.0000 (obs) 0.0000*			
REM	-0.839730 (obs) 0.0000*	0.7675 30(obs) 0.0000*	1.0000 (30)		
FDI	-0.4270 30(obs) 0.0186*	0.8414 30(obs) 0.0000*	0.3931 30(obs) .03916*	1.0000 (obs)	
POP				0.4105 30(obs) 0.0242*	1.0000 (obs)

Obs: Observation

\*: Minimum level of significance.



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## Poverty and Welfare Status of Households in Easter Senatorial District of Kogi State, Nigeria

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*Abstract*-The study advances to find out the welfare status and poverty situation of households in Eastern Senatorial District of Kogi State. Data for the study were collected using structured questionnaire / interview schedule of households. Three research questions and three hypotheses were stated for the study. The analysis of data was done by the use of Tobit regression model and Froster, Greer, Thorbeck (FGT) poverty analysis. The study discovered that the age of household heads, number of people with higher education, gender dummy, and number of hour's household work per week have positive impacts on household income and are significant at 5% levels of significance. This means that as these variables increase, the households income also increases, leading to a fall in poverty level. Also, it was discovered that location dummy and number of people not educated have negative impact on household income and statistically significant at 5% levels of significance. This means that these variables increases, household income will fall, leading to an increase in poverty among the households. On poverty situation in Kogi State, it was discovered that poverty level varies with different income sources with farm income having the highest level of poverty in the area. The study also revealed that ignoring farm income as the highest level of income among households in the senatorial District has greater effect on poverty severity and poverty gap than poverty headcount. Average poverty for instance increases by 23.3% of those above poverty line. This means that those in poverty are further pushed into poverty when farm income is ignored in poverty calculations.

*GJHSS-E Classification : FOR Code: 140219*



*Strictly as per the compliance and regulations of:*



# Poverty and Welfare Status of Households in Easter Senatorial District of Kogi State, Nigeria

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**Abstract-** The study advances to find out the welfare status and poverty situation of households in Eastern Senatorial District of Kogi State. Data for the study were collected using structured questionnaire / interview schedule of households. Three research questions and three hypotheses were stated for the study. The analysis of data was done by the use of Tobit regression model and Froster, Greer, Thorbeck (FGT) poverty analysis. The study discovered that the age of household heads, number of people with higher education, gender dummy, and number of hour's household work per week have positive impacts on household income and are significant at 5% levels of significance. This means that as these variables increase, the households income also increases, leading to a fall in poverty level. Also, it was discovered that location dummy and number of people not educated have negative impact on household income and statistically significant at 5% levels of significance. This means that these variables increases, household income will fall, leading to an increase in poverty among the households. On poverty situation in Kogi State, it was discovered that poverty level varies with different income sources with farm income having the highest level of poverty in the area. The study also revealed that ignoring farm income as the highest level of income among households in the senatorial District has greater effect on poverty severity and poverty gap than poverty headcount. Average poverty for instance increases by 23.3% of those above poverty line. This means that those in poverty are further pushed into poverty when farm income is ignored in poverty calculations. It equally means that those in poverty are further pushed into poverty when farm income is ignored in poverty calculation. It was also discovered from the analysis that welfare gap for the entire local government areas LGAS was 31.8% when compared to 23.2% for the Senatorial District sample. This indicates an increase of 8.6%. From this analysis, three hypotheses stated were tested and rejected. Based on this, it was recommended that higher Education, number of hours household work per week and gender dummy be encouraged since they have positive impact on household income. This means that increasing levels of these variables will greatly improves the well-being of households and bring them out of poverty. It was also recommended that serious poverty intervention projects such as soft loans and farm inputs to real farmer in the area should be intensified so as to increase the welfare status and reduce poverty among individual household in the Senatorial Area of Kogi State.

## I. INTRODUCTION

All over the world, poverty is the most dehumanizing aspect of life. This is because people who are poor lack basic necessities of life

such as shelter, food, clothing, and medication. Poverty according to Gbosi (2001) is the state of wants and a situation where human beings are unable to meet the basic needs of livelihood, such as social amenities and economic infrastructure needed for survival. Poverty is also regarded as the state deprivation of basic necessities of life which are the germane for manful existence. Accordingly, poverty exists when individuals, groups, and society at large are unable to provide the minimum level of social and economic infrastructure desirable for survival (sule 2006). It is a situation where individuals or groups are unable to obtain sufficient income to secure desirable goods and services in the economy.

Gbosi (2001) opines that any household or individual with insufficient income or expenditure to acquire basic necessities of life is considered as being poor. Obadan (1997) had it that poverty is the state of affairs which makes individuals and groups in the economy incapable of utilizing resources around them to improve oneself because of lack of education and awareness of other basic needs that leads to human development.

In the same vein, World Bank (2001) in Ayodele (2002) states that poverty is a pronounced deprivation of human wellbeing which includes vulnerability to adverse events outside ones control and being excluded from having a voice and power in the society. However, in spite the fact that Nigeria economy is growing paradoxically, the proportion of Nigerians living in poverty is increasing every year. This is shown on the table below.

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Relative Poverty Headcount From 1980-2010.

Year	Poverty incidence (%)	Estimated population in(million)	Population in poverty (million)
1980	27.2	65	17.1
1985	46.3	75	34.7
1992	42.7	91.5	39.2
1996	65.6	102.3	67.1
2004	54.4	126.3	68.7
2010	69.0	163	112.47

Source: National Bureau of statistics HNLSS 2010

The above figure also indicate that the proportion of the population below poverty line increases significantly from 1980-2010 (NBS 2010). Poverty line according to Aigbokhan (2000) is a measure that divides the poor from non-poor. It is used

to determine how far away people are from poverty. The table below presents the percentage of persons and household below poverty line in 1996-2010 by some of those characteristics.

Poverty incidences in Nigeria by socioeconomic groups (1996-2010)

Socioeconomic groups	Extreme poor	Moderate poor	Non-poor
Urban	41.8	33.0	25.2
Rural	38.2	31.1	30.7
Male headed	36.7	33.6	29.7
Female headed	41.5	33.5	25.0
Age of household head			
15-24	62.6	21.2	16.2
25-34	47.8	32.0	20.2
35-44	39.8	33.2	27.0
45-54	38.6	32.7	28.7
55-64	37.3	32.6	30.1
65 and above	34.6	33.4	32.0
Education of household head			
None	39.9	32.9	27.2
Primary	44.1	32.9	23.0
Secondary	48.0	30.8	21.2
Post secondary	51.8	32.9	15.3

Source: NBS (2010)

Poverty has disrupted and eroded some social and economic activities in this country (Sule 2006). In the educational sector, apart from being inaccessible to the masses of this country, the educational system is gradually deteriorating in the light of dilapidated infrastructure, lack of essential textbooks and other materials needed for effective teaching and learning, poor staff remuneration, low morale, greater emphasis on paper qualification as against emphasis on skill acquisition and technological development. Consequently, in agricultural sector, farm implements as well as inputs (good seeds, fertilizers, financial incentives etc) which are germane for proper agricultural production are lacking or completely out of reach of the farmers. Thus, to augment food intake, a large proportion of the population have to depend on huge importation of rice and other food crops. This practice does not only drain the meager foreign reserves but put

the farmers in very unhealthy competition with foreign food producers thereby widening the poverty gap (Ayodele 2002). Skewness in the distribution of social and economic infrastructure between the rural and urban areas continues to exacerbate the situation of the silent majority of the citizens who reside in the rural areas (Sule 2006).

Furthermore, the concomitant effect of poor planning and bad economic and social policies had rendered the majority of the citizens in the country hopeless, dejected and neglected, making many people to live in abject poverty. Thus, resulting to their inability to feed themselves and provide necessities of lives. This is an indication that poverty is not only institutionalized but highly endemic. Following this assertion therefore, one may consider the poor as those who are unable to obtain an adequate income, find a stable job, own property or maintain healthy living condition, lack

adequate level of education and are often regarded as illiterates. The poor are not homogenous group. They can be found among some social/occupational groups and can be distinguished by the nature of their poverty.

Evidence from the World Bank poverty assessment on Nigeria using 1992/1993 household survey data, shows that the nature of those in poverty can be distinguished by the following characteristics: sector, education, age, gender and employment status of the head of the household (FOS 1993). Other characteristics of poverty include household size and the share of food in total expenditure. In this case, it can be observed that the poor are the most vulnerable to low income because of the quality, access, variety of resource they have (Gbosi 2001). The poor are not homogenous group. They can be found among some social/occupational groups and can be distinguished by the nature of their poverty. In view of this therefore, the study intends to find out the levels of poverty and welfare status of households in Eastern Senatorial District of Kogi State, Nigeria.

## II. STATEMENT OF PROBLEM

In Nigeria poverty is an indispensable problem that commands attention of many people. Some attributed this situation to growth in population, while others see it as imperfection in income distribution. The most disheartening aspect of poverty in Nigeria is that the country is rich but large percentage of the populations is wallowing in poverty? The work builds on previous work in Kogi State but differ in variables used. The study identified different income sources in the State and used it to determine the levels of poverty in Eastern Senatorial District of the State. The study also used Tobit regression model to determine the level of welfare of households in the area. Also most of the previous studies did not recognize the effect of ignoring certain income source in poverty calculation. Most of the studies have been on the preliminary causes of poverty with no regard to the factors that affect the welfare status of individuals and groups in the society. However no matter the cause of poverty, governments' efforts have been on how to eradicate this ugly trend through its policies and programmes. Some of these policies and programmes include, National Empowerment and Development strategy (NEEDS), National poverty eradication programme (NAPEP), National Directorate of Employment (NDE), National Special Programme for Food Security (NSPFS), and Niger Delta Development Commission (NDDC), to mention but a few are all indications of Government efforts to fight poverty in the country. Usually, to reduce poverty in any economy, strong emphasis have to be imposed on socio-economic/demographic variables as it effect economic and social policies and programmes and the standard of living of people in the economy. This is effectively

achieved when different policies and programmes are applied for successful implementation. It is evident to note that the policy environment required for rapid transformation of any economy is that which can provide policies and programmes with adequate result that can be used to improve household income to all and sundry in the economy with no regard to area of abode. However, ignoring one sector of the economy especially the rural areas can be devastating. In view of this therefore, the following research questions are necessary.

1. What is the welfare status of households in Eastern Senatorial District of Kogi State?
2. What is the level of poverty among households in the area?
3. what is the redistributive effect of ignoring certain income source in poverty calculation in Kogi State
4. What the welfare gap among households with and without certain income source in Kogi State.

## III. OBJECTIVES OF THE STUDY

The general objective is to determine the welfare status and the poverty levels of households in Kogi State. The specific objectives are:

1. To determine the welfare status of households in Eastern Senatorial District of Kogi State
2. To determine the poverty level of households in the area.
3. To determine the effects of ignoring certain income source in poverty calculation in Kogi State
4. To estimate the welfare gap among households with and without certain income source in Kogi State.

### a) Hypothesis

The following hypotheses will guide the study

$H_{01}$ : There is no significant level between the welfare statuses of households in Eastern Senatorial District of Kogi State

$H_{02}$ : There is no significant difference between the poverty situation in senatorial and local government in Kogi State.

$H_{03}$ : Ignoring certain income source has no significant difference on poverty calculation in Kogi State.

$H_{04}$ : There is no significant difference between the welfare gap of households with and without certain income source in Kogi State.

## IV. THE STUDY AREA AND DATA

This study was carried out in Kogi State specifically in Eastern Senatorial District of the State. Eastern Senatorial District of the State is located in Eastern part of Kogi State. The State has a population of about 2, 2787 from 2006 population census. Primary Data were collected with the aid of structured Questionnaire/ interview scheduled administered to 675

households in the Senatorial District. The information collected were collated, arranged and stored on data base and used for Data analysis.

## V. METHODOLOGY

### a) Measure of household welfare level

To determine the effect of some selected socio-economic/Demographic variables on household income (proxy for welfare levels of household), we have to identify the determinants of income poverty bearing in mind that individual households have to engage in one occupation or the other to earn income. This situation would enable us decide on the amount such individuals would have spent in relation to socioeconomic variables as a measure of welfare. To make joint decision on the issues, we divide the households into two groups. The first is the households income sources (i.e the regressand) and second, the households expenditure. Following this assumption, Tobit model can be stated as

$$Y_i^* = X_i\beta + \mu_i \text{ for } i = (1,2,3\dots n)$$

Where X represents the vector of explanatory variables such as:-

Ahh= Age of household heads (Numeric)

Depr= Household dependency ratio (Numeric)

HhEdu= Household with higher Education (Numeric)

Emp= Employment dummy (1 for govt. Employment, 0 otherwise)

Gender= Sex of household head dummy (1 for male, 0 otherwise)

Lctd = Location Dummy (1 for urban, 0 otherwise)

Nedu= Not educated (Numeric)

Nhrs= Total number of hour's household member worked per week (Numeric)

Prm= No of households with primary education (Numeric)

Occgp= Occupational group of the households dummy (1 for professional, 0 Other wise)

Sec= No of households with secondary education (Numeric)

Hsz= Household size (Numeric)

Ine= No of households with intermediate education (NCE, & OND Numeric).

Secoc= Households in secondary occupation dummy (1 for yes, 0 otherwise)

$\alpha$  = Coefficient parameter

$\mu$  = error terms, while  $\alpha_0$  is the intercept and Y is the dependent variable representing the total household income (proxy for welfare).

$\beta$  is a vector of regression coefficient and e is the residuals.

Predictions of household income  $Y=X_i\beta$  are formed using information from the entire data set. However, a strong major limitation is that the influence of a variable that is constant for all observations cannot be estimated. The econometric result will yield estimates of the income flows attributed to household variables, which allow us to decompose inequality, by factor income that is to apportion inequality to the component of income, where the sum of these components equals total income.

$$Y_i = \sum_{k=1}^k Y_i^k$$

However, to test the Tobit model, we can set  $V_i = Z_i$

$$\text{And } d_i^* = ZY + V_i$$

Where  $Y_i = Y_i^*$  and  $d_i = 1$  if  $d_i^* \geq 0$

And  $Y_i = d_i = 0$  if  $d_i^* < 0$

out of their income on some selected socio-economic variables (i.e the regressors) such as; location, job specification, gender of household heads, household size, age of household heads, level of education, dependency ratio, capital base and total number of hours worked per week. To check the presence of sample selection bias, we model the two choices simultaneously using Tobit model. Tobin (1958) devised what became known as the tobit censored normal regression model for situations in which Y is observed for values greater than zero, but not observed (i.e censored) for value of zero or less. Using standard Tobit Model, we can formally denote  $Y_i^*$  to represent the amount of income derived from all sources and  $d_i$  for the binary variables assuming the value of 1 for those who spend their income on some of the socioeconomic variables and zero otherwise.

Where  $X_i$  has K variables and Z has M variables and  $(U_i, V_i)$  are assumed to have a serially independent bivariate normal distribution with a mean of zero and a variance matrix of

$$\begin{bmatrix} \sigma^2 & \sigma uv \\ \sigma uv & 1 \end{bmatrix} \text{ For all } i$$

This normality assumption is estimated by standard ML to produce Tobit estimator. The Tobit estimator is a non linear model and thus similar to the probit and logit models, it is usually estimated using maximum likelihood estimator technique (MLET) (Olsen 1978). The likelihood function or the Tobit model takes the form of;

$$\log L = \sum_{Y_i}^k -\frac{1}{2} \left[ \log(2\pi) + \log \sigma^2 + \frac{(Y_i - \beta X_i)^2}{\sigma^2} + \sum_{Y_i=0}^k \log(1 - F(\frac{\beta X_i}{\sigma})) \right]$$

The estimated coefficient of the Tobit model unlike Ordinary Least Square represents the marginal effect of X on Y\*. That is, the estimated coefficients from the Tobit model represent

$$\frac{\delta E(\frac{Y_i}{X})}{\delta X_i} = \beta$$

$$E(Y_i/Y_i > 0) = \beta_0 + \beta_1 X_i + \delta \left( \frac{\phi(\beta_0 + \beta_1 X_i)/\delta}{\alpha(\beta_0 + \beta_1 X_i)/\delta} \right)$$

The desired marginal effects are then the derivative of this function with respect to X.

Following the probability assumption of Tobit model estimation of mean equal to zero and variance equal to one, the model is superior to ordinary least regression analysis in so many ways: (i) when the observations for which Y>0 increase and are estimated with ordinary least squares, the parameter estimates will be bias and inconsistent, and (ii), the degree of bias will also increase as the number of observations that have the value of zero increases (Cosslett1987). But with Tobit regression, all observations both at the limit and those above it are used to estimate regression line. The model is also superior to ordinary least square method because results obtained from its usage adequately portray the robustness of the analysis.

b) *Measuring Poverty*

To determine the level of poverty and the redistributive effects of ignoring certain household income in poverty calculation in the area, we opted for Foster-Greer-Thorbecke (1984) poverty decomposable indices. This is because the index is not only decomposable as sub-group consistence but satisfies Sen (1976), axioms of transfer and monotonicity. Essentially, the index increases whenever a pure transfer is made from a poor person to someone with more income, and increases when there is a reduction in a poor person's income holding other incomes constant. Following the Foster-Greer-Thorbecke (1984), we defined the poverty index as The Foster-Greer-Thorbecke (sometimes referred to as FGT) metric is a generalized measure of poverty within an economy. It combines information on the extent of poverty (as measured by the Headcount ratio), the intensity of poverty (as measured by the Total Poverty Gap) and inequality among the poor (as measured by the Gini and the coefficient of variation for the poor)

The formula for the FGT is given by:

$$FGT_{\alpha} = \frac{1}{N} \sum_{i=1}^H \left( \frac{z - y_i}{z} \right)^{\alpha}$$

And thus corresponds to the marginal effect of X on the latent variables Y\* not to the observed variable Y. Sometimes Y\* is what of interest but usually it is not. What we really want is the marginal effect of X on Y. this means that, we want expected value of Y conditional on Y being greater than zero. In the Tobit model, this is

where z is an agreed upon poverty line (1\$ or 2\$ per day adjusted for purchasing power parity are the two most common poverty lines used by the World Bank. Developed countries usually have much higher poverty lines), N is the number of people in an economy, H is the number of poor (those with incomes at or below poverty line z) and y<sub>i</sub> are individual incomes and α is a "sensitivity" parameter. If α is lower than the FGT metric weights, it mean that entire individuals with incomes below z are roughly the same. If α is high, those with the lowest incomes (farthest below z) are given more weight in the measure. The higher the FGT statistics, the more poverty there is in an economy. The FGT measure corresponds to other measures of poverty for particular values of α. For α = 0, the formula reduces to

$$FGT_0 = \frac{H}{N}$$

This is the Headcount ratio, or the fraction of the population, which lives below the poverty line. If α = 1 then the formula is

$$FGT_1 = \frac{1}{N} \sum_{i=1}^H \left( \frac{z - y_i}{z} \right)$$

This is the average poverty gap, or the amount of income necessary to bring everyone in poverty right up to the poverty line, divided by total population. This can be thought of as the amount that an average person in the economy would have to contribute in order for poverty to be just barely eliminated. While the two above versions are widely reported, a good deal of technical literature on poverty uses α = 2 version of the metric:

$$FGT_2 = \frac{1}{N} \sum_{i=1}^H \left( \frac{z - y_i}{z} \right)^2$$

as in this form, the index combines information on both poverty and income inequality among the poor. For ease decomposition, we followed the simulation method proposed by Reardon and Tylor (1996), which allows the decomposition of the FGT poverty coefficient by income

source (see Fonta et. al 2008). For ease decomposition, we followed the simulation method proposed by Reardon and Tylor (1996), which allows the decomposition of the FGT poverty coefficient by income source (see Fonta et. al 2008).

#### c) *Setting the Poverty Line Z*

The poverty line used for the study was constructed by taking the sub-sample of households whose total income is close to and equal to the recommended calorie level of 2900 calories per day and derived the simple average. It gave us a total poverty line of 29806 Naira per annum or USD252.5. This method of food energy intake poverty line has practical advantage over all other methods because it is used to construct poverty line that is consistent with the attainment of basic needs and doing so with modest data requirement. It avoids the use of retail prices and requires no explicit valuation in its computation.

#### d) *Analysis of welfare level of households*

The empirical result above shows the effect of socio-economic/demographic variables on household income. The result on table 1 in appendix 1 shows that age of household head and Gender Dummy with values of  $Z=2.756633$  and  $Z=2.307628$  has positive impact on household income and are statistically significant at 5% level of significance. The findings also indicate that labour which is defined as the number of productive hours put into different occupations impact positively on household income with the value of  $Z=2.554807$  and is statistical significant at 5 percent level of significance. This means that as the hours the household put into different occupation increases, household income also rises which means increase in welfare level of the households. These increases eventually lead to fall in poverty. Equally, it was established that number of households with higher Education of  $Z=15.332190$  has positive impact on household income and statistically significant at 5% level. This means that increasing levels of education greatly improves the well-being of households. Higher Education raises income as it afford more job opportunities and enhances the earning capacity of an individual for higher pay which has the propensity to reduce household poverty. Higher Education helps to break the barrier of high risk on higher paid jobs and improves the well being of the households by reducing household poverty. Essentially worthy of note is that the extent of rural poverty is reflected by the negative impact of location dummy on the level of income of the household. The result  $Z=-4.205046$  also shows that household size is negatively correlated with household income and statistically significant at 5 percent level of significance.

It then means that increase in household size significantly decreases household income and results to a fall in welfare of the households, thereby leading to increases in poverty level.. This is so because net effect

of large family size is low income, little saving and poverty [Olsen 1978]. Usually increase in demand for more children in households will increase household poverty because the desire for more children in families lies among the poor. Likewise, Non-educated has a negative impact on household income with the value of  $Z=-27.80011$  but statistically significant at 5% level of significance. This means that as this variable increases, the household income will fall. The result reveals that the coefficient of primary education (of which more than half of the respondents are farmers) is negative and not significant. This implies that as the number of people engaged in farming increases, household income of the farmers also decreases as they get greater part of their food items from their farms. It portrays that being in rural area reduces the welfare of the household by 0.366. Other variables having negative impact on household income are Dependency Ratio, occupational group dummy (Occgp), number of households with intermediate education, (Nhhined), number of households with secondary Education,( NHHSECED) and household secondary occupation (HHsecocc),That is, as these variable increases, poverty level among household will also increase.

Furthermore, the negative coefficient of occupational group (Occgp) dummy is an indicative of the fact that majority of the employed are not in professional occupation like legal profession, Architecture, medicine, Engineering and the likes. But in petty occupation like shop-keeping, food processing and other local services which have little significant impact in increasing household income.

The coefficient of determination ( $R^2$ ) of 0.56 in the study and the adjusted R of 0.53 indicate that study is best fit. Also, F-statistics of 57.14 and probability of F-statistics of 0.0000 shows that the whole effect is significant at 5% level of significance.

#### e) *Poverty Analysis*

The measurement of poverty can be divided into two distinct operations viz: the identification of the poor and the aggregation of their poverty characteristics into an overall measure. The poor are identified as those who are unable to meet their specific minimum needs or poverty line considered necessary for living in the society (Sen 1984). That is, (a) the proportion of the population whose income level is below poverty line; (b) the depth of poverty expressed by the income gap ratio or the poverty gap, i.e. the average percentage by which a person's income falls below poverty line, and (c) the depth of extreme poverty or poverty severity. The decomposition analysis was therefore conducted using food- energy- intake poverty line. FGT poverty index was used to estimate the levels of poverty among the sample household. Table 2 in appendix 2 presents the FGT poverty computation by income sources. The decomposition analysis of different income sources

shows that farm income has a poverty level (FGT  $\alpha=0$ ) of 56.7%, wages & salaries 44.8%, craft and Artisan 40.9% Entrepreneur 51.1%, Trade 35.1%, Other incomes and Credit 23.5% and 15.6% respectively. Also, farm households has the highest level of poverty of 56.7%, while households who depend on credit as their income source has the lowest level of 15.6%. The result of the analysis also indicates that households with farm income has the least poverty gap (FGT  $\alpha=1$ ) of 14.2% and poverty severity (FGT  $\alpha=2$ ) of 2.0% against craft & Artisan with poverty gap and poverty severity (FGT  $\alpha=2$ ) of 39.4% and 15.5% respectively. Also, Entrepreneur has poverty gap (FGT  $\alpha=1$ ) of 38.4% and poverty severity (FGT  $\alpha=2$ ) of 15.5% while, Trade has poverty gap (FGT  $\alpha=1$ ) of 28.5% and poverty severity (FGT  $\alpha=2$ ) of 6.7%. The result of the analysis shows that poverty level in Eastern Senatorial District varies with household income.

Table 3 in the appendix 3 below presents the FGT decomposition results when farm income as the highest source of income is ignored in the poverty calculations. The result of the analysis indicate that when farm income is set at zero, poverty increases in all three cases, ranging from 11% [when  $\alpha=0$ ], to 22.9% [when  $\alpha=1$ ] and finally to 25.7% [when  $\alpha=2$ ]. This implies that 11% of the poor households in absolute term are further pushed into poverty. Poverty depth increases by 22.9%, while severity of poverty or poor households that are further away from poverty line increases by 25.7%. It then means that the poverty impacts of excluding farm income in poverty calculations in the senatorial district of Kogi State is greater on poverty severity and poverty depth measures than on head count ratio. Also, the welfare gap is put at 25.7%. Following this assertion therefore, it means that the poverty situation become different when a short-term impact of 10% increase in farm income is considered to total households' income. For instance, an increase in farm income by 10% is expected to reduce the number of households in poverty to about 10.5%. The same decrease is associated to depth, and severity of poverty of 21.4% and 22.3% and welfare gap of 20.6%. This means that farm income has significant role in reducing poverty in the senatorial district. In this case, it is appropriate to embark on people intervention projects especially among the core poor in the area and Kogi State in general. This result is consistent with a similar study of Fonta and Ichoku (2008) and the studies of Babatunde [2008], Adebayo [2006] and Oyekale [2006], who had it that farm income has poverty and inequality reducing effect on any society.

Table 4 in Appendix 4 above also, further present poverty decomposition results using household's samples from each local government area of Eastern Senatorial District of Kogi State. As shown on the table, when farm income is set to zero, the effect of

poverty and welfare gap on the local government levels are substantially higher than at the Senatorial District Level. For example, the average headcount ratio for entire LGAS is 17.7% when compared to 1.2% for the Senatorial District sample. Also the welfare gap for the entire LGES is 31.8% when compared to 23.2% for the Senatorial District sample. This indicates an increase to 8.6%. On using the poverty gap and severity measures, the poverty figure also increases. Average poverty increases by 23.3% of those above poverty line. For poverty severity This means that those in poverty are further pushed into poverty when farm income is ignored in poverty calculations measures, poverty increases to 20.9 % as against 2.5 % and 2.8% respectively for the full sample. The observed difference between the two sub-groups is not in error considering the fact that farming activities contribute significantly higher on each LGA than at Senatorial District level. This prone us to suggesting that ignoring farm income in the estimation of poverty measures in the Senatorial District has negative effect on most people who depend on farming activities for their livelihood. Such effect is usually greater in poverty gap and poverty severity measures than on headcount ratio [Fonta Ichoku 2010]

## VI. CONCLUSIONS AND POLICY ISSUES

The study reveals that the most devastating aspect of life in any economy is poverty. This occurs when certain income source is ignored in poverty calculation. For instance, in Kogi State when farm income as the highest income source is ignored in poverty calculation, it leads to social and economic deprivation among individuals and groups in the society. It also leads to man inhumanity to man and social unrest. In view of this therefore, the following recommendations are made:

Firstly, from the result of the analysis, it was discovered that level of households with higher Education, Gender Dummy and number of hours households work per week have positive impact on household income. This means that as these variables increase, the households income also increases, leading to a fall in poverty level. Also, it was discovered that location dummy and number of people not educated have negative impact on household income and statistically significant at 5% levels of significance. This means that if these variables are increased, household income will fall, leading to an increase in poverty among the households. Policy on how all encourage higher education, increase in the number of hours household put for work should be promulgated to enhance the earning capacity of households. It was also discovered that increase in household size increases poverty. In this case, law prohibiting large family sizes should be promulgated since the propensity of large family size lies among the poor. Also, it was discovered

that poverty varies with income sources and that ignoring farm income in poverty calculation in Senatorial district will create great impact on poverty severity and poverty gap than poverty headcount. This requires serious people targeted intervention policy such as National Economic empowerment and poverty reduction strategy (NEEDS) and Kogi State Economic empowerment and poverty reduction strategy (KOSEEDS) on core poor and moderately poor in both rural and urban areas of the country with emphasis to Kogi State. This will help to provide relieve welfare packages such as subsidies on farm inputs, and soft loans to improve on their various business to increase their income and further reduce the effects of poverty in their households.

Secondly, it was also discovered that on using the poverty gap and severity measures, the poverty figure also increases. Average poverty increases by 23.3% of those above poverty line. This means that those in poverty are further pushed into poverty when farm income is ignored in poverty calculations. It equally means that those in poverty are further pushed into poverty when farm income is ignored in poverty calculations. From this analysis, serious poverty intervention projects such as soft loans should be advanced to real farmer in the area to be utilized in farming activities to help increase the welfare status and reduce poverty among individual in the society.

Thirdly, it was discovered that farm income increases income of the households. In this case therefore, the government should try to tackle major policy lapses especially on agricultural production in the area. More importantly, farmers at various levels should be incorporated into policy formulation to enhance efficiency and increase output for the benefit of the poor in the economy.

Fourthly, it was also discovered from the analysis that welfare gap for the entire LGES was 31.8% when compared to 23.2% for the Senatorial District sample. This indicates an increase of 8.6%. From this result it means that the local government areas in the state require serious welfare packages like provision of infrastructural facilities such as good road network, Health services, Employment generation, Gender equity, and Water and sanitation strategy to boost the living standard of people in the senatorial District.

Finally, non-governmental organizations (NGOS) should work closely with the poor farmers by making them to act as a watchdog on various activities sponsored by the government concerning farming in the country with particular reference to Kogi State for better efficiency and optimum benefit.

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APPENDIX 1

Table 1 : Tobit Regression Results

Dependent Variable: LOG(THHY)  
 Method: ML - Censored Normal (TOBIT)  
 Date: 06/14/10 Time: 21:29  
 Sample(adjusted): 1901 2575  
 Included observations: 671  
 Excluded observations: 4 after adjusting endpoints  
 Left censoring (value) at zero  
 Convergence not achieved after 1 iterations  
 Covariance matrix computed using second derivatives

	Coefficient	Std. Error	z-Statistic	Prob.
C	9.751275	0.253526	38.46269	0.0000
Ahh	0.006330	0.002296	2.756633	0.0058
Depr	-0.003539	0.008297	-0.426491	0.6698
HhEdu	0.652860	0.042581	15.332190	0.0001
Emp	-0.039858	0.087566	0.455179	0.6490
Gender	0.261177	0.113180	2.307628	0.0210
Lctd	-0.366693	0.087203	-4.205046	0.0000
Nedu	-0.328514	0.011817	-27.80011	0.0000
Nhrs	0.007078	0.002211	2.554807	0.0095
Prm	-0.008666	0.044768	-0.193582	0.8465
Occgp	-0.038019	0.086006	-0.442044	0.6585
Sec	-0.030059	0.047518	-0.632577	0.5270
Hsz	-0.039695	0.011301	-3.512521	0.0009
Ine	-0.011637	0.047648	-0.244229	0.8071
Secoc	-0.036310	0.090106	-0.402970	0.6870

Error Distribution				
SCALE:C(16)	1.065801	0.029940	35.59742	0.0000
R-squared	0.560282	Mean dependent var		9.968246
Adjusted R-squared	0.530761	S.D. dependent var		1.100635
S.E. of regression	1.079093	Akaike info criterion		3.013675
Sum squared resid	762.7091	Schwarz criterion		3.121187
Log likelihood	-995.0879	Hannan-Quinn criter.		3.055315
Avg. log likelihood	-1.482992	F-tatistics		57.1428
Prob.(F-statistics)	0.000000			

Left censored obs	0	Right censored obs	0
Uncensored obs	671	Total obs	671

APPENDIX 2

Table 2

S/N	INCOME SOURCES	FGT $\alpha=0 \times 100$	FGT $\alpha=1 \times 100$	FGT $\alpha=2 \times 100$
1	Farm income	56.7%	14.3%	2.0%
2	Wages &salaries	44.8%	32.3%	10.4%
3	Craft & Artisan	40.9%	39.4%	15.5%
4	Entrepreneur	51.1%	38.4%	15.5%
5	Trade	35.1%	25.9%	6.7%
6	Other incomes	23.5%	18.1%	3.3%
7	Credit	15.6%	18.1%	1.9%

Observation 675

Source: Author's Computation

APPENDIX 3

Table 3 : FGT index with and without farm income Poverty line used 29806 Naria or USD 252.5

All households(N = 675)	FGT ( $\alpha = 0$ )	FGT ( $\alpha = 1$ )	FGT ( $\alpha = 2$ )	Welfare gap FGT( $\alpha = 1$ )/FGT ( $\alpha = 0$ )
Total income without farm income	0.608	0.448	0.201	0.690
With farm income	0.718	0.677	0.458	0.941
% change in FGT	11%	22.9%	25.7%	25.7%
<b>The effect of 10% increase in farm income</b>				
Total income without farm income	0.559	0.412	0.169	0.737
10 % increase in farm income	0.664	0.626	0.392	0.943
% change in FGT	10.5%	21.4%	22.3%	20.6%

Source: Authors calculation

APPENDIX 4

Table 4 : Poverty Decomposition by Lgas in Eastern Senatorial District of Kogi State

	FGT ( $\alpha = 0$ )	FGT ( $\alpha = 1$ )	FGT ( $\alpha = 2$ )	Welfare gap FGT( $\alpha = 1$ )/FGT ( $\alpha = 0$ )
<b>Ankpa LGA (N=75)</b>				
With farm income	0.467	0.439	0.192	0.940
Without farm income	0.667	0.365	0.133	0.547
% change in FGT	20%	7.4%	5.9%	39.3%
<b>Bassa LGA (N = 75)</b>				
With farm income	0.604	0.479	0.229	0.793
Without farm income	0.504	0.220	0.048	0.433
% change in FGT	10%	25.9%	18.1%	35.5%
<b>Dekina LGA (N = 75)</b>				
With farm income	0.900	0.804	0.646	0.893
Without farm income	0.832	0.225	0.050	0.270
% change in FGT	6.8%	57.9%	59.6%	62.3%
<b>Ibaji LGA (N = 75)</b>				
With farm income	0.752	0.482	0.232	0.641
Without farm income	0.476	0.366	0.134	0.768
% change in FGT	27.6%	11.6%	9.8%	12.7%
<b>Idah LGA (N = 75)</b>				
With farm income	0.720	0.508	0.258	0.705
Without farm income	0.533	0.243	0.059	0.455
% change in FGT	18.7%	26.6%	19.9%	38.5%
<b>Igalamela/Odolu LGA (N=75)</b>				
With farm income	0.823	0.735	0.540	0.893
Without farm income	0.640	0.483	0.233	0.754
% change in FGT	18.3%	25.2%	30.7%	13.9%
<b>Ofu LGA (N = 75)</b>				
With farm income	0.686	0.582	0.339	0.848
Without farm income	0.507	0.376	0.149	0.742
% change in FGT	17.9%	20.6%	19.8%	10.6%
<b>Olamaboro LGA (N = 75)</b>				
With farm income	0.560	0.507	0.257	0.905
Without farm income	0.736	0.193	0.037	0.262
% change in FGT	17.6%	31.4%	22%	64.3%
<b>Omalla LGA (N = 75)</b>				
With farm income	0.573	0.283	0.080	0.494
Without farm income	0.793	0.318	0.101	0.401
% change in FGT	22%	3.5%	2.1%	9.3%

Source: Authors calculation



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## Differences in Social Attitudes in Rural Areas and Prague: Implications for Social Peace

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*Abstract-* In our paper we present one part of the results of our research which focused on factors that determine young people's attitudes towards the older generation and the level of their social and inter-generational solidarity. In our article we evaluate the conditions and possibilities of how to reach social peace taking into account young people's attitudes and values and we analyze established difference in social attitudes between young people from rural areas and those from towns or cities (represented here by respondents from Prague). Moreover, we present our conclusions: are there any threats (and which ones) to social peace and through it to social and regional development which could be triggered by how young people perceive the justification of social policy and its principles' content.

*Keywords:* social attitudes, social peace<sup>1</sup>, social policy, young people from rural areas, young people from towns/cities.

*GJHSS-E Classification : FOR Code: 160804*



*Strictly as per the compliance and regulations of:*



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# Differences in Social Attitudes in Rural Areas and Prague: Implications for Social Peace

Jana Hrbková <sup>α</sup> & Ivan Hrbek <sup>σ</sup>

**Abstract-** In our paper we present one part of the results of our research which focused on factors that determine young people's attitudes towards the older generation and the level of their social and inter-generational solidarity. In our article we evaluate the conditions and possibilities of how to reach social peace taking into account young people's attitudes and values and we analyze established difference in social attitudes between young people from rural areas and those from towns or cities (represented here by respondents from Prague). Moreover, we present our conclusions: are there any threats (and which ones) to social peace and through it to social and regional development which could be triggered by how young people perceive the justification of social policy and its principles' content.

**Keywords:** social attitudes, social peace <sup>1</sup>, social policy, young people from rural areas, young people from towns/cities.

## I. INTRODUCTION

According to Nakonecny (2005, p. 43), attitudes are "evaluating relations" which represent people's readiness to act and are connected with the psychological concept of motivation.

Attitudes can show themselves currently, which means openly in a concrete action, or they stay latent and will manifest themselves upon request or spontaneously according to situational circumstances. Attitudes are the results of social teachings and they are created not only in controlled (educational) interactions but in a spontaneous social teaching (Rezác, p. 30, 1998).

People's views and attitudes towards social problems and social policy <sup>2</sup> are not and probably even

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<sup>2</sup> Social policy can be defined as a complex of activities which purposefully lead to the improvement of the fundamental living conditions of population as a whole or given groups of population, to the securing of social safety and social sovereignty in the frame of specific economic and political conditions. Social sovereignty and social safety can be considered to be the basic general characteristics of people's life position and all the individuals are trying to reach them (Krebs et al., 2007, p. 24).

cannot be the same or permanent. Depending on the global socio-economic and political development of the society they change in time and are often rather contradictory.

People's different characteristics and their standing in the society basically rule out the possibility of unified opinions in this area. A certain unifying consensus is being reached by means of complicated and rather confrontational negotiations. Why? Social policy is basically a combination of expenditure which people try to avoid, and allowances of which - on the contrary - they try to secure for themselves the biggest possible amount. It follows from this that social policy can be considered good and acceptable and as such is supported by people, or the inhabitants don't identify themselves with it and they choose various kinds of disagreement and/or protest (Krebs et al., 2007, pp. 40-41).

Social policy should observe some basic principles which determine it and which are more or less visibly shown in it. The most important principles are: the principle of social justice, the principle of social solidarity, the principle of subsidiarity and the principle of participation. The key principle of social policy is that of social justice. It can be defined by rules according to which are allocated not only income or wealth but life opportunities and conditions as well (opportunity to educate themselves, to work etc.) (Krebs et al., 2007, p. 28).

According to Krebs (2007, pp. 458-459), social solidarity can be both an important stimulant of socio-economic development and a tool of social peace reach and its barrier. It doesn't concern only those who benefit from solidarity funds but those who contribute to them as well. Solidarity cannot be therefore marked with a clear plus sign: on the one hand it can be activating and motivating, on the other hand it can demotivate people and lead to parasitism.

The problems of social peace which we will investigate further are connected with social state existence<sup>3</sup>. According to Potucek (1995, p. 35), typical of the social state is the fact that within various laws, in people's consciousness and attitudes, in institutions'

<sup>3</sup> A social state, a welfare state or a state of public social service can be defined in various ways. Even though they are basically synonyms, we can find various definitions in literature - e.g. (Vecera, 2001, pp. 22-29), (Potucek, 1995, pp. 35-37), (Krebs et al., 2007, pp. 73-75), (Musil, 1996, p. 83 and pp. 212-214), (Duben, 1994, pp. 27-30), (Esping-Andersen, 1990, pp. 2-5).

activities and practical policy currently winning recognition now is the idea that social conditions people are living in aren't just the concern of individuals and families but are public affairs. All the inhabitants are given a certain approved minimal level of support and help in those life situations which could be a threat to them or to their families (potential or real).

Discussions about the crisis of the welfare state and the necessity to re-evaluate the current system or to create a completely new concept of social policy are nowadays more frequent than ever before. The primary impetus of these thoughts has always been constantly more and more urgently looking problem of population ageing<sup>4</sup> and its economic consequences. The most frequently mentioned are:

- the growth of social expenditure<sup>5</sup> connected with the necessity of taking care of very old people which will be further multiplied by the growing percentage of lonely people (childless, widowed, divorced) who will not be looked after by other members of their families;
- the growth of healthcare expenditure as older people are usually more endangered by illnesses and there are a lot of illnesses directly connected with the old age;
- the problems of pension systems as the number of people in post-productive age per one person in the productive age has been growing etc.<sup>6</sup>

Discussions have become more intensive since 2007 in connection with the economic recession and so called debt crisis which various countries (and not only the more developed ones) are trying to settle:

How should we then approach social policy?

Is social consensus which is the precondition of any functioning welfare state under threat?

Are young people's social attitudes in rural areas and in towns different? If it is the case what are the implications?

Are young people's attitudes a threat to social peace?

The results of our research point out to some important facts and unless we take these facts into consideration we cannot succeed in finding answers to these questions.

## II. MATERIAL AND METHODS

Our research, the partial results of which we present in our paper, was grounded on a quantitative

methodology based on a deduction research approach.

We based it on a fundamental hypothesis: Young people's attitudes towards the older generation are influenced by two factors: a small inter-generational solidarity and the low support of a universal welfare state. We created a set of eleven working hypotheses to verify its validity and tested them on a sample of the population. The sample comprised 402 university students, aged 20 – 23: students from the Faculty of Civil Engineering of the Czech Technical University and from various faculties of the Czech University of Life Sciences. Women comprised 41 %, men 59 %. Our respondents didn't form a representative sample of young population but a choice on the base of availability and advantageousness or "an age group available at the given time at the given place" (Hendl, 2004, p. 52). And even though we cannot simply claim our findings as valid for all young people in the Czech Republic we can consider them to be a useful source of information about what determines young people's attitudes (and what are these attitudes) – towards social problems<sup>7</sup>, the attitudes of young people with a higher level of education than the average (and not only young) population.

Data collection was done by a questionnaire method in the period from December 2011 to February 2012. For data processing we used the SPSS program. Conclusions we found by the analysis of questionnaires' data were compared with information gained via group interviews with students about their own personal experience in social problems solving.<sup>8</sup>

As in the paper we concentrated on whether there are different attitudes of young people from rural areas and from towns and if - as a result of these differences (should they exist) - the rural (agricultural) areas are endangered by social conflicts more or less than towns (Prague, the Czech Republic); we don't evaluate here answers to questions<sup>9</sup> from the questionnaire received from all 402 respondents but we work with replies from respondents from Prague (103 students) and from municipalities with population less than 2000 inhabitants, i.e. from villages (105 students). We provide results we found out while looking for answers to two research questions. The first one:

<sup>7</sup> In addition, university students are very well co-operative respondents who are interested in social development problems and are able to (and were willing to) think over its rather complex connections. Moreover, working with university students was useful because it allowed us to eliminate completely one of the well-known disadvantages of used questionnaire technique for data collection – the low response rate.

<sup>8</sup> Even though the basis of our research was a quantitative methodology, the use of group discussions which is frequently used within the triangulation of methods allowed us to complete our results and to understand them better.

<sup>9</sup> Even though we use the word "questions", in the questionnaire there were no questions ending with a question mark. The respondents should have usually chosen one of options expressing if they agree or disagree with a statement or mark their opinion of a social problem.

<sup>4</sup> According to the middle variant of population development the life expectancy at birth in 2050 will be 82 years for men and 86.5 years for women. See (Burcin-Kucera, 2010).

<sup>5</sup> The share of pension security expenditure in the Czech Republic increased from 7.3% GDP in 1995 to 9.4% GDP in 2011, the share of total expenditure on social care and health care went up from 18.6% GDP in 1995 to 20.2% GDP in 2011. See [http://www.vupsv.cz/index.php?p=economic\\_social\\_indicators&site=default](http://www.vupsv.cz/index.php?p=economic_social_indicators&site=default)

<sup>6</sup> For details see for example (Fiala-Langhamrova, 2010).

Do young people prefer social policy efficiency to solidary redistribution and the reduction of social differences?

We expressed social policy efficiency by means of:

- the limited amount of unemployment support
- the fact that social policy doesn't increase the national debt
- the implementation of health care fees
- recommended individual savings for retirement
- social policy which doesn't lead to the increase of public finance deficit
- the minimization of social help range
- no increase of social help

Solidary redistribution and the reduction of social differences we expressed by means of:

- the high level of unemployment support
- the increase of taxes in the period of a crisis
- the rejection of fees which increase the cost of living
- reliance on age pensions guaranteed by the state only
- redistribution even at the cost of the public finance deficit increase
- the rejection of the minimum of social help scope
- support to wider social help than the current one

The summary of the frequency of answers through which we made our decision about the first research question is shown in Table no 1. The frequency of answers in the table is divided into two columns: data gained from Prague respondents are shown in column 2, data from respondents from municipalities with the population less than 2000 inhabitants are shown in column 3. The statements from the questionnaire to which the respondents answered are shown in column 1. Markings 1. A, 1. B, 2. A, etc. which are in front of the statements in the first column of Table no 1 represent numbers of questions or symbols under which they were input into the questionnaire. In questions number 1, 2 and 4 (in Table no 1) the respondents were asked to choose from two statements the one which better corresponded with their opinion (for example 1.A or 1. B). In questions 9, 10, 15 and 17 the respondents chose from the following answers: I agree, I don't know, I disagree.

Our second research question was: Do young people support the liberal concept of social policy more than universal and wide-ranging activities of the state in social area?

The liberal concept of social policy was expressed by means of:

- people's obligation to prove the fact that they are entitled to social security benefits
- flat-rate income tax
- the rejection of the minimum wage
- the conditional provision of social help

- child benefit payment to people with low incomes only
- the support of belief that in the first place individuals themselves are responsible for their standard of living

State universal activities in social area were expressed by means of:

- benevolent approach to the checking of social help entitlement
- progressive taxation
- the setting of the minimum wage
- flat-rate child benefit payment
- the guarantee of maximal range of health care from public insurance

The summary of the frequency of answers through which we made our conclusion about the second research question is shown in Table no 2. Frequency answers in the table are (similar to Table no 1) divided into two columns: data gained from Prague respondents are shown in column 2, data from respondents from municipalities with the population less than 2000 inhabitants are shown in column 3. The statements from the questionnaire to which the respondents answered are shown in column 1. Markings 3. A, 3. B, 5. A, etc. which are in front of the statements in the first column of Table no 2 represent numbers of questions or symbols under which they were input into the questionnaire. In questions number 3, 5, 6, 7 and 8 (in Table no 2) the respondents were asked to choose from two statements the one which better corresponded with their opinion (for example 3.A or 3. B). In questions 13 and 16 the respondents chose from the following answers: I agree, I don't know, I disagree.

*Table no 1* : The relative frequency of answers to questions through which we made our conclusion about the first research questions <sup>10</sup>

1.	2.	3.
The statements from the questionnaire to which the respondents answered or the statements from which they chose the one which better represented their opinion:	The relative frequency of answers from respondents from Prague (%)	The relative frequency of answers from respondents from villages <sup>11</sup> (%)
1. A <i>Unemployment support should be high enough to allow people to keep reasonable standard of living until they find a new job.</i>	28.1	13.3
1. B <i>Unemployment support should be low enough to force people to find a new job as quickly as possible.</i>	71.8	82.9
2. A <i>If there exists a danger of a rising national debt and there is an economic crisis it is appropriate to limit or even cancel some social security benefits.</i>	47.6	49.5
2. B <i>If the state wants to prevent a rising national debt in the period of an economic crisis it should increase some taxes rather than target those people who are the poorest.</i>	38.9	40.0
4. A <i>Health care fees implementation was appropriate as it created additional funds for extra needed care.</i>	50.4	47.6
4. B <i>Health care fees implementation was not appropriate as it raised living costs for sick people and seniors..</i>	43.7	47.6
9. <i>Everyone should save for their retirement and not rely on what they receive from the state only.</i>	agree 67.0 disagree 27.2	agree 76.2 disagree 17.2
10. <i>Social policy in the Czech Republic helps the poor at a satisfactory level and there is no need to increase social help.</i>	agree 37.9 disagree 26.2	agree 49.5 disagree 20.9
15. <i>We should only have such social policy which will not lead to the increase of public finance deficit.</i>	agree 64.1 disagree 11.6	agree 60.0 disagree 9.5
17. <i>Social security range should be as small as possible for people to actively try to solve their own problems.</i>	agree 41.8 disagree 39.8	agree 54.3 disagree 26.4

Source: Authors' own research

<sup>10</sup> In the table we show the frequency of answers "I agree" and "I disagree"; the balance to 100% includes answers "I don't know".

<sup>11</sup> By a village we understand a municipality with the number of inhabitants up to 2 000. In both tables we show the frequency of answers "I agree" and "I disagree"; the balance to 100% includes answers "I don't know".

**Table 2:** The relative frequency of answers to questions through which we made our conclusion about the second research questions <sup>12</sup>

1.	2.	3.
The statements from the questionnaire to which the respondents answered or the statements from which they chose the one which better represented their opinion:	The relative frequency of answers from respondents from Prague (%)	The relative frequency of answers from respondents from villages <sup>13</sup> (%)
3. A <i>Flat-rate income tax is more equitable than the progressive one - why should be richer people punished for working harder and consequently earning more money.</i>	61.2	45.7
3. B <i>The state needs to get enough money to its state budget therefore it must tax those who have money, e.g. those with higher income - progressive income tax rates are more equitable than flat-rate tax.</i>	34.0	44.7
5. A <i>The setting of a minimum wage is fair as it protects the employees from wages' falling below a reasonable level.</i>	82.6	79.0
5. B <i>The setting of minimal wages doesn't help anybody and it forms an unnecessary barrier for the employment of more people – in this case those people who would work for lower wages cannot find jobs at all.</i>	12.6	16.2
6. A <i>Social security for long-term unemployed people should be provided on the condition that they do public-benefit work. .</i>	83.5	83.8
6. B <i>The provision of at least minimal social help for long-term unemployed people is in the interest of the whole of society so there should be no conditions for providing it.</i>	13.6	13.4
7. A <i>Flat-rate child benefit should be paid to all the families with children regardless of their income.</i>	36.9	41.9
7. B <i>Child benefit should only be paid to those families with children who really need it and under clearly specified conditions.</i>	61.1	57.2
8. A <i>The payment of social security benefits must be thoroughly checked to prevent their misuse.</i>	90.3	98.1
8. B <i>Too many frequent checks of social security benefits entitlement is not desirable as it can cause in people the feeling of humiliation and frustration.</i>	4.9	1.0
13. <i>The state should guarantee the maximal range of health care from public health insurance without further patients' participation.</i>	agree 59.2 disagree 15.5	agree 62.9 disagree 15.2
16. <i>Everybody's welfare depends in the first place on Them selves.</i>	agree 90.3 disagree 6.8	agree 84.8 disagree 11.4

Source: Authors' own research

### III. RESULTS

Firstly we will deal with the analysis of data shown in Table no 1:

With all (seven) questions from the questionnaire shown in Table no 1 the frequency of answers related to the support of social policy efficiency was higher than the frequency of answers related to the support of solidary redistribution and the reduction of social differences. The most significant agreement was registered with these three statements:

Unemployment support should be low enough to force people to find a new job as quickly as possible with which agreed 83 % of respondents from villages and nearly 72 % of Prague respondents.

Everyone should save for their retirement and not rely on what they receive from the state only where the agreement amounted to more than 76 % of respondents from villages and 67 % of Prague respondents.

We should only have such social policy which will not lead to the increase of public finance deficit: with this

<sup>12</sup> In the table we show the frequency of answers "I agree" and "I disagree"; the balance to 100% includes answers "I don't know".

<sup>13</sup> By a village we understand a municipality with the number of inhabitants up to 2 000. In both tables we show the frequency of answers "I agree" and "I disagree"; the balance to 100% includes answers "I don't know".

statement agreed 60 % of respondents from villages and 64 % of Prague respondents.

Nearly one half of respondents from villages and 48 % of Prague respondents agreed with If there exists a danger of a rising national debt and there is an economic crisis it is appropriate to limit or even cancel some social security benefits.

Over 50 % of respondents from Prague supported health care fees implementation; in the case of respondents from villages the percentage of those who supported it and those who were against it was about the same, nearly 48 %.

The biggest differences in the answers between respondents from villages and from Prague were with this statement: Social security range should be as small as possible for people to actively try to solve their own problems with which agreed slightly below 42 % of Prague respondents but over 54 % of respondents from villages. (Disagreement with this statement was expressed by nearly 40 % of Prague respondents but only 26 % of respondents from villages). About the same was the difference between the frequency of answers between respondents from villages and from Prague supporting the statement Social policy in the Czech Republic helps the poor at a satisfactory level and there is no need to increase social help with which agreed less than 38 % of Prague respondents but nearly 50 % of respondents from villages.

Even this small sample of young people's attitudes exemplifies how complicated and complex the problems of social policy are: the respondents expressed the clearest agreement with the statement unemployment support should be low enough to force people to find a new job as quickly as possible and with the proposition that everyone should save for their retirement and not rely on what they receive from the state only. There is no doubt that unemployed people are clearly considered to be a group which must be pushed not to misuse their social position and to try and solve their situation actively. Nevertheless, even though 54 % of respondents from villages agreed with a more general statement minimal range of social security, from Prague respondents it was less than 42 %.

*a) The analysis of data shown in Table no 2*

From the data shown in Table no 2 it can be seen that from among statements expressing the support of the liberal concept of social policy the most supported statements were: the payment of social security benefits must be thoroughly checked to prevent their misuse with which agreed 90 % of Prague respondents and even 98 % of respondents from villages, and after that everybody's welfare depends in the first place on themselves with which identified themselves 85 % of respondents from villages and more than 90 % of Prague respondents.

Relatively high support also had the statement social security for long-term unemployed people should be provided on the condition that they do public-benefit work where we found nearly the same values of frequency of answers both from respondents from villages and from Prague, nearly 84 %.

More than 50 % relative frequency of answers supporting the liberal concept of social policy can be found with two more questions: more than 61 % of Prague respondents and 46 % of respondents from villages agreed that a flat-rate income tax is more equitable than a progressive tax, and 61 % of Prague respondents and 57 % of respondents from villages pronounced in favour of children's allowance to be paid to those families with children who really need it. Nevertheless, with these two questions we can notice one rather interesting circumstance – a relatively high support of alternative answers: progressive income tax rates as an effective means of raising money needed for state budget were supported by nearly 45 % of respondents from villages but only by 34 % of Prague respondents. And the statement A flat-rate child benefit should be paid to all the families with children regardless of their income was approved by nearly 42 % of respondents from villages and nearly 37 % of Prague respondents.

In only two out of seven questions shown in Table no 2 there was higher relative frequency of answers supporting state universal wide-ranging activities in social area: nearly 83 % of Prague respondents and 79 % of respondents from villages agreed with the setting of a minimum wage and just 13 % of Prague respondents and 16 % of respondents from villages chose the statement the setting of a minimum wage doesn't help anybody and it forms an unnecessary barrier for the employment of more people. Furthermore, about 60 % of respondents (59 % from Prague and 63 % from villages) were of the opinion that the state should guarantee the maximal range of health care from public health insurance without further patients' participation.

*b) The interpretation of group interviews results*

Group interviews which we used as a complementary technique of data collection took place from December 2011 to February 2012. The groups were formed by students from the Faculty of Civil Engineering of the Czech Technical University: two groups had eight members, one had ten. Our interviews were half-standardized, took approximately 90 minutes and were with respondents' approval recorded on iPad. Our task was to find out if the attitudes expressed in group interviews correspond with what we discovered from the questionnaires. Here we only present the conclusions which concern the topic of our paper:

The current social policy in the Czech Republic was – as a whole – regarded highly. According to the respondents its range is appropriate to our possibilities and traditions and is sufficient. Essentially there didn't

exist any area in which the state should substantially increase the range of social support or help. On the contrary, some respondents expressed the view that it would be reasonable to reduce the range of state social expenditure to guarantee help only for those people who are not able to secure means for life themselves (for example due to their health condition). Even though social policy should be solidary it should also be effective and well controlled as not to be misused easily. Mainly, unemployment support should not be available to those who just “hang around” and don’t want to work.

Unambiguous support was given to the flat-rate income tax (the rich pay higher taxes anyway) and progressive tax rates were deemed to be unfair and demotivating. Health care fees implementation was appropriate but there exists the need to guarantee that health care is available to all people, especially to the elderly. It would also be useful for people who consciously damage their health (e.g. smokers) to pay higher health insurance or to contribute to their treatment in some other way. If someone is rich and wants to pay to get higher than standard care, the system should allow them to do it.

It was characteristic for the respondents to grasp the social policy in its narrowest sense of the word, e.g. as solving critical social situations. The primary principle which should be applied in it is justice. Nevertheless the respondents marked as just only help to those who are not responsible for their difficult situation (for example to people with serious health handicaps) and furthermore to those who even though they do their best to make their living by work have low wages so the state should help them. But solidarity with people who don’t work and “live on social benefits” should not have a place in any social policy. The means earmarked for the social area shouldn’t grow as not to increase taxes and social insurance.

As the main area which should be reduced as much as possible the respondents marked unemployment benefits and social support for long-term unemployed. On the contrary, the problem of population ageing with all its possible consequences didn’t arouse any negative reactions; it is considered to be “an objective fact” which all people must take into account so people in productive age should save for their retirement themselves.

To the question of care for very old grandparents two respondents who had had experience with this problem from their families expressed their views: both considered it “normal” that the families take care for grandparents even though in one case it required an assistant to be paid to help during the day when the family members were at work.

By the analysis of questionnaires and information from group interviews we found out that young people:

- ✓ Grasp the social policy in its narrowest sense of the word, e.g. as solving critical social situations. From this narrow view follows their belief that the scope of social measures should be as small as possible and basically limited to help for people who aren’t able to deal with their difficult situation on their own.
- ✓ Are convinced that social area expenditure shouldn’t go up – excessively generous social help or support leads to the increase of demands from those individuals who would like to live - because of various reasons - at the expense of other people.
- ✓ Believe that social policy must be effective and in the long-term its expenditure mustn’t be higher than the sources from which it is funded. Therefore it is necessary to check the legitimacy and justification of social security claims rather strictly.
- ✓ Base their attitudes on the belief that the society is formed by free citizens whose individual life successes or failures are first of all the result of their own activities, qualification and effort and that all the difficulties and life barriers everybody must overcome mainly by their own active approach. There is no reason for the government to require from more active, more hard-working and richer people more money (in the form of higher taxes) to be redistributed to less hard-working or passive individuals.

#### IV. DISCUSSION

The analysis of data shown in Table no 1 shows that young people prefer social policy efficiency to solidary redistribution and the reduction of social differences and that it is more clearly valid for respondents from villages: the frequency of their answers supporting social policy efficiency were higher in four cases out of seven and the difference if the frequency of answers ranged from 9.2 to 12.5 %.

Overall, from respondents’ answers a rather frequent contradiction characteristic for attitudes towards social policy became evident: on the one hand people agree with the liberal concept “all the people should look after themselves” (everybody’s welfare depends in the first place on themselves)- this view expressed 90 % of Prague respondents (Table 2) - but on the other hand the statement that social security range should be as small as possible was supported by only 42 % of Prague respondents how we found from replies in Table 1. A considerable majority of respondents (approximately 80 %) supported the setting of a minimum wage a rather high percentage (37 % from Prague and 42 % from villages) would even agree with a flat-rate child benefit to be paid to all the families with children regardless of their income (Table 2). Even though about a half of respondents considered health care fees implementation as an appropriate measure (Table 1), approximately 60 % of respondents supported the view that the state should guarantee the maximal range of health care from public

health insurance without further patients' participation (Table 2).

Young people's attitude towards unemployed people is more definite. The support of the liberal concept of social policy is rather straightforward here: 72 % of Prague respondents and 83 % of respondents from villages agreed that the unemployment support should be low enough to force people to find a new job as quickly as possible (see Table 1). Moreover it became evident that up to 84 % of respondents are convinced that social help for long-term unemployed people should be provided on the condition that they do public-benefit work (see Table 2).

The biggest difference between the answers from Prague respondents and those from villages was at the question relating to flat-rate income tax which was supported by 61 % of Prague respondents which was higher by 15.5 % than the support from respondents from villages where it was 46 %. The reason for this probably lies in generally higher income in Prague and out of that ensuing opinion about just flat-rate income tax. In the areas of lower income – e.g. in rural and agricultural areas – the support of progressive tax rates for higher income is more frequent. For other questions the differences between Prague respondents and respondents from villages were not that significant. In two cases - the statement relating to social help for long-term unemployed people and the state guarantee of health care maximal range from public health insurance without further patients' participation – the frequency of answers by Prague respondents and those from villages was nearly the same.

In young people's attitudes strong individualism and a very low level of solidarity with unemployed people are reflected. Unemployment benefits should in their opinion be paid for a limited, as short as possible, period and only at a level which will "force" people to find jobs as soon as possible. The system can't be set up in such a way which would enable people to live without much trouble on the support and other social benefits. We registered these attitudes from Prague respondents but to a considerably bigger extent from respondents from villages, i.e. from rural areas.

## V. CONCLUSIONS

From the results gained we deduced the following conclusion: young people prefer social policy efficiency to solidary redistribution and the reduction of social differences. They also support the liberal concept of social policy more than universal and wide-ranging activities of the state in social area. And the respondents from villages (rural areas) seem to be more pronounced in their attitudes and we found out that they have a lower level of social solidarity and a stronger support of efficiency and the liberal concept of social policy than that shown by Prague respondents.

Young people expressed their support of the liberal concept of social policy mainly in their attitudes towards unemployed people, first of all the long-term unemployed: they supported only such a level of unemployment benefits which will force people to find a new job as soon as possible. And they agreed that social security for long-term unemployed people should be provided on the condition that they do public-benefit work. One half of Prague respondents considered health care fees implementation as appropriate but out of respondents from villages, an equal number of people accepted and refused it. Similarly, respondents voted for the state to guarantee the maximal range of health care without further patients' participation.

Young people grasp the social policy in the narrowest sense of the word. Therefore they are of the opinion that social security should be actually limited as much as possible to help only those people who aren't able to deal with their difficult life situation on their own. We believe that the source of conflicts which could disturb the reaching of social peace is the need of increasing social expenditure for unemployed people in the form of benefits and social help for the long-term unemployed. So it is not the redistribution of social system funds due to population ageing as has currently been proposed – based on a rather simplified interpretation of demographic data. Taking this into account, social peace is now (and will be in the future) most imperilled in the regions with the highest rate of unemployment from which arises the need to spend a relatively high amount of funds on unemployed people and mainly on the long-term unemployed. At the same time, potentially endangered by social disruption seem to be the areas and regions with the lowest average level of education because people with a low level of education usually have bigger problems finding jobs. Therefore these regions suffer from higher unemployment more than areas where more qualified labour lives: The highest unemployment rate has permanently been in these regions: Moravskoslezsky, Ustecky and Karlovarsky. In the years 2010 and 2011 the highest percentage of long-term unemployed people was in Karlovarsky a Ustecky regions. In these two regions also lives the highest proportion of people with elementary education only (Labour Markets, 2011)

The above mentioned facts are supplemented by other sources of conflicts with individuals and groups living in socially disadvantaged areas which have not been analyzed here.

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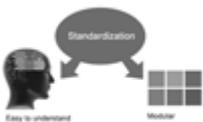


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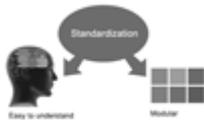
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- Two Column with Equal Column with of 3.38 and Gaping of .2
- First Character must be three lines Drop capped.
- Paragraph before Spacing of 1 pt and After of 0 pt.
- Line Spacing of 1 pt
- Large Images must be in One Column
- Numbering of First Main Headings (Heading 1) must be in Roman Letters, Capital Letter, and Font Size of 10.
- Numbering of Second Main Headings (Heading 2) must be in Alphabets, Italic, and Font Size of 10.

**You can use your own standard format also.**

### Author Guidelines:

1. General,
2. Ethical Guidelines,
3. Submission of Manuscripts,
4. Manuscript's Category,
5. Structure and Format of Manuscript,
6. After Acceptance.

### 1. GENERAL

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Complete support for both authors and co-author is provided.

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Review papers: These are concise, significant but helpful and decisive topics for young researchers.

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(a) Title should be relevant and commensurate with the theme of the paper.

(b) A brief Summary, "Abstract" (less than 150 words) containing the major results and conclusions.

(c) Up to ten keywords, that precisely identifies the paper's subject, purpose, and focus.

(d) An Introduction, giving necessary background excluding subheadings; objectives must be clearly declared.

(e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition; sources of information must be given and numerical methods must be specified by reference, unless non-standard.

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(g) Discussion should cover the implications and consequences, not just recapitulating the results; conclusions should be summarizing.

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*Acknowledgements: Please make these as concise as possible.*

#### References

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**26. Go for seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.



**27. Refresh your mind after intervals:** Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

**28. Make colleagues:** Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

**29. Think technically:** Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

**30. Think and then print:** When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

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**33. Report concluded results:** Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

**34. After conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

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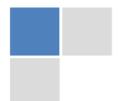
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- Please note the criterion for grading the final paper by peer-reviewers.

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Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

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Mistakes to evade

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- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

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- Keep on paying attention on the research topic of the paper
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- Align the primary line of each section
- Present your points in sound order
- Use present tense to report well accepted
- Use past tense to describe specific results
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- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

## Approach:

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- As an outline of job done, it is always written in past tense
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- Center on shortening results - bound background information to a verdict or two, if completely necessary
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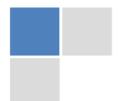
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- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
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## Approach:

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- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
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- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

#### **Procedures (Methods and Materials):**

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

#### **Materials:**

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

#### **Methods:**

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

#### **Approach:**

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

#### **What to keep away from**

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

#### **Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently. You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.



## Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

### What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

### Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

### Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

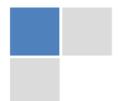
### Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

### Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.



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<i>Introduction</i>	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
<i>Methods and Procedures</i>	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
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<i>References</i>	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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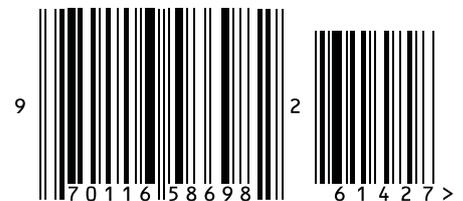


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