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Opportunities and Challenges When Vietnam Joins TPP

By Phan Quan Viet

Summary- The Agreement on Trans-Pacific Partnership (TPP) currently undergoes 19 rounds of negotiations, with the participation of 12 member countries. With high standards, large space of 14 countries and regions (including the two potential members which are South Korea and Taiwan), with over 800 million people, contributing about 40% of gross domestic products (GDP) of the world and approximately 30% of global trade turnover, TPP is expected to be a "treaty of the 21st century", offering many opportunities for international trade and investment. Vietnam has participated in negotiations since 2010 and is facing opportunities and major challenges from TPP, especially in the field of trade. However, this study does not assess the impact of TPP for Vietnam on trade alone, but recognize the opportunity and challenge of TPP in the overall relationship with the progress of reform and development of the country in the coming years.

Keywords: agreement on trans-pacific partnership (TPP), trade, investment, education, opportunity, challenge.

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OPPORTUNITIESANDCHALLENGESWHENVIETNAMJOINSTPP

Strictly as per the compliance and regulations of:

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Keywords: agreement on trans-pacific partnership (TPP), trade, investment, education, opportunity, challenge.

I. What is TPP?

The Agreement on Trans-Pacific partnership (TPP) is currently derived from Trans-Pacific Strategic Economic Partnership Agreement - also known as P4) - a free trade agreement signed on 03 June 2005, effective from 28 May 2006 between 4 countries: Singapore, Chile, New Zealand and Brunei (as for the scope of the commitment of P4, see Appendix 1).

In 2007, the member states of P4 decided to expand the scope of negotiation of this Agreement to issues of financial services and investment and exchange with the United States about the possibility of this country being engaged in extended negotiations of P4. The United States also began to study the issue and did the internal consultations with interest groups and the Parliament on this issue. In September 2008, USTR notified the decision of the United States to participate in negotiations of P4 to expand and officially involved in some discussions of opening up the financial services market with the P4 countries. In November of the same year, Australia, Peru and Vietnam also expressed their interest and participated in the TPP negotiations, bringing the total number of participants to 8 countries (except Vietnam on 13 november 2010 which declared to get involved in negotiations as a fully qualified member, other countries decided to participate officially at the beginning). Also from this point, the P4 expanded negotiation was renamed as negotiation of Agreement on Trans-Pacific Partnership (TPP).

However, new TPP negotiations were delayed until late 2009 due to waiting for the United States to complete the presidential election and for the new government of President Obama to consult and review the participation in TPP negotiations. In December 2009 the new USTR notified the decision of President Obama that the United States continues to participate in TPP. Only this time TPP negotiations officially launched.

The first round of TPP negotiations were conducted in Melbourne - Australia in March 2010. In 2010 four rounds of negotiation within TPP (Rounds 2 and 3 were conducted in San Francisco - USA in June 2010 and October 2010 in Brunei, Round 4 just ended in mid December 2010 in New Zealand). The negotiating countries aimed to complete TPP negotiations by the end of 2011 after 5 rounds of negotiation expected in this year. This target is considered to be overly ambitious because the partners participating in TPP are still quite far apart on the views of a number of issues as well as the expectations in TPP. However, with the determination of the countries, the most important and most fundamental issues of TPP likely to be agreed before the end of 2011 were relatively realistic.

II. Scope of Regulation

Despite of going through 04 official rounds 04 (and 01 mid-term round of negotiation in Peru in August 2010), there is currently no agreement regarding the scope of TPP negotiations. Until the end of Round 4 recently, the parties only preliminarily discussed general issues (with the division into 24 groups of issues to discuss) and technical issues in preparation for the first welcoming version (expected to be launched in Round 5 held in coming February in Chile). The last 4 rounds are considered to be relatively successful of TPP (compared with the speed of negotiation commonly seen by FTAs). The countries are considered to have reached basic agreement in the principles of negotiations and have established a framework for horizontal commitments (connecting and supporting small and medium-sized enterprises, competing...). This is considered an initial success, though it is still very general and disagreements still exist around these issues (in which particularly it remains separation in how to handle the relationship between TPP and FTAs existing between

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the partner countries in TPP as well as how to negotiate new commitments in TPP).

Although it is not gone into details, the future scope of regulation of TPP can be speculated somewhat when we look at the nature of FTAs in general, the current state of P4 in particular and the ambition for TPP of the US, a negotiating party with the greatest impact on the negotiation progress.

Specifically, the scope of regulation of TPP is considered to be "conditioned" by at least 03 following elements:

a) TPP - a free trade agreement of the new generation

In principle, the Free Trade Agreements - FTAs - require a level of commitment to be further opened than common trade opening commitments (shown mainly in the fields to be committed for wider opening, the degree of openness such as tariff reductions, removal of market access ...).

The process of integration and globalization of trade activities in the world has seen 03 generations of FTA, starting from the first generation of FTA focusing on liberalizing of trade in goods sector (tariff reductions, removal of non-tariff barriers) to the second generation of FTAs with the expansion of the scope of liberalization to certain fields of service (removal of market access conditions in related fields of services), and the third generation of FTAs continuing to expand the scope of freedom of services and investment.

FTAs in recent times (especially FTAs that negotiated by the United States) witnessed a new trend in which not only the fields of opened trade are mentioned but non-commercial issues like labor and environment are also included in the negotiation and signing.

As the latest agreement being negotiated at this time, obviously TPP hardly deviates this trend. The scope of this Agreement, therefore, is expected to be very large and complex, with commercial issues and noncommercial issues intertwined.

b) TPP - The development of P4

With the "foundation" as P4 Agreement, TPP is expected to expand and diversify the fields of commitment that P4 mentioned. Under a natural logic, TPP is speculated to have wider range than P4.

Meanwhile P4 has a strong commitment on tariff and non-tariff issues such as (origin of goods, trade defense measures, sanitary and phytosanitary measures, technical barriers for trade, intellectual property, public procurement, competition policy ... and non-commercial issues such as labor and environment). Therefore, new TPP will certainly have a greater scope.

Joining TPP negotiations, the United States says it expects TPP will create a new benchmark for "FTAs of the 21st century". Obviously this is not a declaration in form when people look at the the FTAs that United States negotiated in recent times (FTAs with Panama, Colombia and especially FTAs with South Korea). The desire behind this statement is that the United States will try so that TPP has the possible greatest extent, and with the possible largest degree of openness.

With such ambitions of the "key" person, TPP negotiations can hardly be a negotiation at the level of "moderately free" or a scope of "limited freedom".

The above factors are a basis for many experts to say that although substantive contents of negotiations are not defined, TPP will have a broad scope, with powerful free trends of negotiation, for example:

- Tariffs: Cutting most tariff lines (at least 90%), performed immediately or performed with a very short route
- Services: Increasing the degree of openness of service sectors, particularly financial services
- Investment: Strengthening the provisions relating to foreign investment and protecting investors
- Intellectual property rights: Increasing the level of protection of intellectual property rights to be higher than the level in WTO (WTO +)
- SPS, TBT measures: Tightening the requirements for sanitary and phytosanitary and technical barriers;
- Competition and public procurement: Enhancing competition, especially in the field of public procurement
- Labor issues: especially the issues of the right to establish associations (unions), the right to collect and negotiate of laborers in general, provisions to prohibit the use of all forms of forced labor, provisions to prohibit child labor exploitation and provisions not to discriminate in the labor force
- Other non-trade issues: Increasing environmental requirements

Since the first round of TPP negotiations conducted in Melbourne (Australia) in March 2010, to date TPP has been joined by 12 countries. In addition to the founding members, the next applicant countries are the US, Australia, Vietnam, Peru, Malaysia and more recently Mexico, Canada and Japan. In addition, South Korea and Taiwan as potential member countries are conducting consultations with partners, considering the preparation for joining TPP negotiations. The countries mentioned above have undergone 19 rounds of negotiations; 04 TPP Ministerial Meetings (the 4th conference took place in Singapore, from 22-25 March 2014). Since 2011 the US and other countries determined to conclude TPP negotiations in 2014.

With its commitment as an open area link, the scope of regulation of TPP has 4 basic characteristics:

Firstly, TPP is an agreement removing common barriers in a time determined at all members.

Secondly, TPP must handle new policy issues related to electronic commerce, the segment of production and business process in the modern supply chain.

Thirdly, TPP seeks to maintain the link between the developed countries with developing countries, which Doha Round of negotiation failed. TPP avoids the measures for special treatment, but creates conditions for low-income economies to join. Fourthly, TPP mentioned many issues after the borders, ensuring transparent and predictable policies and regulations.

TPP has broad scope of regulation, covering both goods and services; food safety and SPS, technical barriers (TBT), competition policy, intellectual property, government procurement and transparency. In addition, there is a chapter on cooperation and 02 accompanying documents for Cooperation in Environment and Labour Cooperation; 02 important documents on investment and financial services. The most striking point of TPP is very strong liberalization in goods. Import tariffs are eliminated completely and mostly removed immediately after the Agreement came into force. In services, liberalization is strongly implemented by the method of selecting-removing. Accordingly, all service sectors are open, except for those on the list of exclusions.

One more new feature in TPP negotiations compared to the previous traditional FTAs is the involvement of the stakeholders such as businesses, associations and social organizations. In addition to the traditional contents of negotiations in FTAs, the member states also focus on discussion of many proposals and measures to push the cooperation in issues relating to policy planning, facilitating businesses, development of supply chain and production between the member countries, enhancement of the participation of small and medium enterprises in the flow of goods between TPP member states...

TPP will have a broad scope, with a powerful trend of free negotiation.

* Tariffs: Cutting most tariff lines (at least 90%), performed immediately or performed with a very short route.
* Services: Increasing the degree of openness of service sectors, particularly financial services.
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* Labor issues: especially the issues of the right to establish associations (unions), the right to collect and negotiate in general of laborers, provisions prohibiting the use of all forms of forced labor, provisions of prohibition of child labor exploitation, regulations on no discrimination in labor force.
* Other non-commercial issues: Increasing environmental requirements.

III. Process of Joining the Negotiation of Vietnam

- After P4 was formed, Singapore joined and expressed a desire to expand TPP and use TPP as a tool to realize the idea of a Free Trade Area of Asia-Pacific of APEC. Since 2006, this lion island actively invites Vietnam to participate in TPP, but because of considerations both in terms of economics and politics, Vietnam has not received this invitation.
- In September 2008, the US declared to join TPP. Subsequently, in November 2008, Australia and Peru also announced to participate in TPP. At the same time, the representatives of the parties assert to negotiate to establish a new framework for TPP. Since then, rounds of TPP negotiations are scheduled and take place so far. Before declaring to join TPP, the United States also invites Vietnam to join TPP. In early 2009, Vietnam decided to join the agreement as an associate member.
- In November 2010, after joining 3 sessions of TPP negotiations as an associate member, Vietnam has officially joined TPP negotiations and fully participated in the rounds of negotiation so far.

The priority of negotiation of Vietnam in TPP is to expand the market access for garments and footwear, as this is the main export items of Vietnam to the US market.

IV. Opportunities from TPP for Vietnam

a) *Opportunities for regional economy*

If launched, TPP will become one of the largest commercial areas in the world with over 800 million people, contributing over 40% of the world GDP and about 30% of global trade turnover. The impact of TPP in the prime time is relatively small, but in 2025, TPP can bring increased revenue for the global economy up to 104 billion US dollars.

This study refers to two roads towards liberalization in the Asia - Pacific region: firstly to come from free trade agreements of the countries in the region, which mainly started from ASEAN agreements, and moving on to a free trade agreement for the whole region; secondly to come from TPP, progressively extended to other countries in the region, and progressing to build an agreement for all countries in the

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region. In this study, TPP countries are understood that in addition to 11 countries which have officially accepted the invitation to join the negotiation there are also Japan and South Korea, a total of 13 countries. This study indicates that TPP is the path to regional liberalization which brings the most benefit for the countries. By 2025, the global GDP will increase 104.3 US billion, corresponding to 0.1% increase level. All countries participating in TPP gain benefits from this Agreement.

Table 2 : GDP increases by country in 2025 with TPP scenario

Countries	GDP in 2025 (without TPP) (billion USD)	GDP increases thanks to TPP (billion USD)	% compared with GDP
TPP countries			
United States	20.337	13,9	0,07
Australia	1.426	2,4	0,17
Canada	1.982	2,3	0,12
Chile	289	2,3	0,78
Mexico	1.999	11,7	0,58
New Zealand	206	1,7	0,83
Peru	311	6,6	2,12
Brunei	22	0,1	0,48
Japan	5.332	30,7	0,58
South Korea	2.063	15,1	0,73
Malaysia	422	9,4	2,24
Singapore	386	1,4	0,35
Vietnam	235	33,5	14,27
Some other countries			
China	16.834	-15,7	-0,09
Russia	2.790	-1,0	-0,03
Europe	22.237	1,6	0,01
India	5.229	-0,6	-0,01
World	**101.967**	**104,3**	**0,1**

Source: Ministry of Planning and Investment.

Relations of trade and investment

Table 3 : Some key indicators of TPP (Source: GSO)

Countries /Data	Area (1.000 km2)	Population 2012 (million persons)	GDP 2011 (thousand billion USD)	Export (billion USD)	Import (billion USD)
1. United States	9.512,1	313,9	14.991	2.094	2.662
2. Japan	377,5	127,6	5.867	893	947
3. Canada	11.633,3	34,9	1.736	541	562
4. Singapore	0,7	5,3	240	501	432
5. Mexico	1.967,8	116,1	1.153	365	381
6. Australia	7.333,3	22	1.379	294	273
7. Malaysia	329,5	20,9	288	264	218
8. Chile	756,5	17,4	249	93	86
9. Peru	1.308,7	30,1	177	51	44
10.Newzealand	275	4,4	160	48	46
11. Brunei	5,6	0,4	16	12	3
12.Vietnam	331,3 (8)	88,8 (4)	133 (11)	115 (8)	114
Total	33.831,3	781,8	26.389	5.271	5.768

Source: Ministry of Planning and Investment.

Compared with the world, currently the members participating in TPP negotiations account for 24.9% of the area; 11.1% of the population; 37.7% of GDP; 19.3% of exports, about 21.1% of imports.

Among 12 members of TPP, Vietnam ranks the 8th in terms of area, the 4th in population, the 11th in GDP, the 8th in export, the 8th in import. In 12 countries, there are 4 countries importing the largest, the largest is the US; there are 8 countries exporting the largest, including Vietnam. Vietnam accounts for 0.5% of GDP, 2.2% of total exports, accounting for nearly 2% of the total import value of TPP. The proportion of exports of Vietnam to TPP in 2010 accounted for 43.3%, in 2013 accounting for 39%. Vietnam's imports from TPP in 2013 accounted for 22.8% of the total import turnover of Vietnam. Vietnam's exports to TPP accounted for about 1% of total import turnover of TPP member countries. This demonstrates that TPP is a potential market of Vietnam.

In the trade relation between Vietnam and the remaining members of TPP, Vietnam is in a quite large trade surplus position (in 2013 it reached 21.4 billion USD, which equals to 41.5% of exports). Among 11 countries, Vietnam is in trade surplus position with 6 countries, the largest ones are the US, Japan, Australia, Canada ...; and in trade deficit position with 5 countries, the largest one is Singapore. Direct investment of TPP members in Vietnam (from 1988 to the end of 2013) is as follows: Japan 30 billion USD, ranking the first; Singapore 27.89 billion USD, ranking the 3rd; the United States 10.56 billion USD, ranking the 7th; Malaysia 10.20 billion US dollars, ranking the 8th; Australia 1.38 billion USD, ranking the 15th. Only with these 5 partners, the total FDI registered capital has reached more than 80 billion US dollars, accounting for 30% of the total FDI in Vietnam.

b) Opportunities for Vietnam

i. Opportunity to boost exports

Many countries participating in TPP are important export markets of Vietnam. Among them, there are 2 of the 3 largest importers of our country as the United States and Japan. Therefore, TPP will open up opportunities to increase exports of Vietnam to the United States, Japan and other members of TPP, thanks to stronger and higher commitments to open markets than the existing commitments in the region. As for the United States, through TPP, Vietnam will have the opportunity to increase exports the products with inherent strengths (textiles, seafood, footwear, wood products ...) to this market.

TPP poses very high demand that is to eliminate all import duties immediately after the Agreement comes into force (except for the group of goods with 3-5 year roadmap, few with a roadmap of less than 10 years). This requirement is both opportunity and challenge for Vietnamese enterprises. With the elimination of all tariff barriers, export items of Vietnam will have a chance to penetrate the United States market.

If you look at the current members of TPP, the Unites States is the most important strategic partner. The United States is the largest export market of Vietnam. Vietnam exports to the United States an average of 3 years (2010-2012) reaching 17 billion US dollars with the impressive growth rate of 17.5%. If Vietnam does not join TPP, the possibility of establishing a bilateral FTA with the United States is extremely difficult.

Among traditional and mainstay exports of Vietnam, textile is at the top, followed by footwear, wood and wood products, seafood with exports turnover in 2012 respectively reaching 7.5 billion US dollars, 2.3 billion US dollars, 1.8 billion US dollars and 1.2 billion US dollars. If the United States eliminated import tariffs for these items that will be a huge advantage (textiles and footwear are the commodity groups that the United States imposes a very high tax (12-48%).

However, whether these advantages are really beneficial for exporters or not will depend on the rules to determine the origin of goods.

Besides the opportunities to import higher quality goods with cheaper price to replace sources of goods from countries with lower technological level as ASEAN, China, the enterprises will face the removal of tariff barriers dropped from an average of 11.7% today.

While the tax is almost the only protection tool, if being lifted, the request set out is to review a lot of plans and strategies to develop the sector at present, for example, the strategy to develop automobile industry.

Financial services

In the field of financial services, this is a field very interested by TPP countries, particularly the United States with extensive commitments on market access in the areas of banking, insurance and securities. With a low level of development, Vietnam faces new proposals and is under pressure to open its markets. These are certain pressures on domestic policy changes, allowing foreign investors to access some new financial sectors in the market and this leads to higher competitive pressure with domestic suppliers. However, the stronger and freer participation of the suppliers with great potential, with long experience, with the advantage of services in the world (especially the US service providers) can open up opportunities for businesses and consumers in the country to access competitive financial products and services with high quality.

Agriculture and rural areas

For the agricultural sector, with about 70% of the population being engaged in agricultural activities, TPP has brought opportunities but also many challenges. Opportunities opened up when joining TPP are our agricultural products will have access to a large market with high consumption, especially in the US market. Many exports are more competitive by reducing taxes, such as rice, tea, coffee, pepper...

However, the tax reduction will inevitably lead to the rapid increase of imports flow from TPP countries to Vietnam with competitive price.

The indispensable consequence is that businesses now face stiff competition, commodity market of Vietnam will be reduced, or even the risk of losing domestic market share. This risk is particularly dangerous for agricultural products, which inherent with the object easily in vulnerability in the integration that are farmers.

Textile sector – gaining big benefit from TPP

With Vietnam's textile industry, since the government issued a policy on innovation, implementation of the policy of international economic integration and deployment of the strategy of industrialization and modernization of the country, there have been outstanding developments. Textile industry in Vietnam has grown to become a key economic sector, leading the country in terms of export turnover. With nearly 4,000 businesses and about 2.5 million employees, in 2012 the textile of VN created the revenue of nearly 20 billion US dollars, accounting for 15% of GDP.

When joining TPP, in 16,000 HS 8-digit tariff lines, textiles are under chapters HS 50-63 that the United States has imported, Vietnam has exported to the United States about 1,000 tariff lines with an average MFN tariff of 17-18%. TPP is expected to cut these tariffs down to 0%. In theory, the rules of origin to encourage the use of raw materials of the contents of block TPP will boost the investment in the section of dyeing textile yarn in Vietnam.

With the prospect of TPP, textile exports from Vietnam to the United States could grow 13-20%/year over the period 2013-2017 and may reach 25-30 billion US dollars in 2025, making the scale of export of the whole industry by 2025 reach around 50 to 55 billion US dollars. Besides, if TPP promotes good investment in the raw materials as expected, the targets of trade surplus, value added and localization rate of the sector will be enhanced. It is expected that the industry will soon finish with the objective to reach the rate of localization of 60% by 2015 and 70% in 2020. TPP and FTAs are negotiating with the EU and the Customs Union of Russia - Belarus – Kazakhstan, which will be the next big opportunity for the textile sector of Vietnam.

For the textile industry, in order to benefit from TPP, the offers of tax need fast and strong tax cuts to create a motivation big enough; The rules of origin must be feasible; Challenges from rapid and strong investment trends of FDI sector with advantages both in finance, technology and markets, need to balance the interests of Vietnamese enterprises and FDI enterprises. Besides, the State authorities should build a plan to develop textile sector until 2030, with a vision of 2050, which clearly defines the role, position and size of the textile sector; There are policies to encourage the textile enterprises to develop vertical integration, linking supply chains; There is a mechanism for consultation between local authorities and ministries and associations when considering to license FDI projects in the textile sector ...

Fisheries

The direct impact of TPP for Vietnam fisheries industry has been identified as coming from the tariff measures (tax incentives for Vietnam's fisheries imported into TPP member countries as well as tax incentives for fisheries of TPP partner countries for import into Vietnam) and border measures related to the import (trade remedies, technical barriers, sanitary and phytosanitary measures, ...). TPP will allow Vietnam's fisheries industry to access preferential tariffs (0%) while exporting into TPP member countries, especially the United States and Japan - two key export markets accounting about 35% of total export turnover in 2012 of Vietnam's fisheries industry.

In other indirect aspects, TPP would also have a certain impact to the fisheries sector. For example, the commitments to the protection of foreign investors in the Chapter on Investments in TPP may affect the competition between Vietnamese enterprises with FDI enterprises in the field of fisheries. The contents of the Chapter on State Enterprises can directly impact the operations of State enterprises in the industry. The provisions of the Chapter on Public procurement can be a good opportunity for Vietnamese fisheries enterprises to be directly involved in the tender packages to supply the raw materials for kitchens using public funds of TPP countries. The high standards in the Chapters on Labor and Environment are a major challenge for the improvement of the model and cycle of production in the fisheries sector...

For fisheries export enterprises using imported materials, TPP does not bring major changes by imported raw materials to produce goods for export which is entitled to tax refund anyway, so whether the import duty is reduced is not a concern. However, enterprises importing raw materials from TPP countries will not have to do tax refund procedures, and do not tie up funds if they currently pay import duties, and this can be seen as a benefit, although not great.

Thus, considering the import perspective, TPP does not offer significant advantages in tariff for businesses in fishery exports but it leads to big challenges for fisheries enterprises trading domestically.

Maybe fisheries exporters understand better than anyone that, in export tariff is only one part -

sometimes a very small part of a long story. The rest lies in the standards of food safety and SPS, technical barriers TBT (requirements in packaging, labeling, shipping ....) or in trade defense measures (anti-dumping, anti-subsidy ...).

TPP for the fisheries sector will not be a huge boost to be eagerly welcomed, but it is not a huge shock and considering to the last, in a future with TPP, to survive and grow, Vietnam's fisheries businesses will have to be active and ready for fair and decisive competition.

Livestock sector

The concern of the livestock industry about the ability to lose at home is totally reasonable.

Many Vietnamese livestock businesses will be heavily affected by livestock products imported under TPP commitments; especially the source of beef, chicken, pork from 4 countries as the United States, Canada, Australia and New Zealand ... currently flooded in Vietnam market.

12 member states have to open livestock industry by reducing import duties on livestock products; many tariffs will be reduced immediately to 0%, or have very rapid reduction schedule when adopted by TPP. The average tariff of imported meat at 15% brought back to 0% will make the livestock industry suffer heavy losses.

Many TPP members, especially the United States, Canada, Australia and New Zealand, are the countries with the strength of exports of livestock products while Vietnam's products are of poor quality and cannot get into big markets mainly due to difficulties in scale and technical barriers.

Table 3 : Increase in income and export turnover of Vietnam compared with TPP countries and some other countries in the region in 2025

No.	Countries	% GDP increase	% increase of export turnover
1.	Vietnam	14,27	25,8
2.	Malaysai	2,24	5
3.	New Zealand	0,78	5,7
4.	South Korea	0,73	7,7
5.	Japan	0,58	4,9
6.	Mexico	0,58	3,1
7.	Brunei	0,48	1,8
8.	Singapore	0,35	0,6
9.	China	-0,09	-0,5

Source: Ministry of Industry and Trade

ii. *Promoting and attracting investment*

Joining TPP, Vietnamese goods have opportunities to penetrate export markets more strongly thanks to lower taxes. Accordingly, Vietnam attracts foreign investors more strongly than the countries in the region. The foreign investors, especially from China, ASEAN will increase their investment in Vietnam to take advantage of a TPP member of Vietnam. Many experts said that this is the biggest benefit that Vietnam obtains from TPP.

Besides, within TPP member countries there are also countries which are important investment partners, with highly additional capabilities for Vietnamese economy such as the United States, Australia, New Zealand, Singapore ... When TPP is in effect, this agreement will also help promote and increase investment of the above countries in Vietnam, especially in some areas Vietnam wants to develop such as high-tech industries, raising the level of sectors of industry, services, agriculture, enabling Vietnam to participate better in the value chain of the region and the globe.

iii. *Stepping up international integration and empowerment of the position of the country*

The participation in TPP will help Vietnam have further conditions and opportunities to implement the policy of enthusiastic and proactive international integration that the Eleventh Party Congress in 2011 set out. This Agreement will also help Vietnam strengthen multifaceted relations with international partners in the Asia-Pacific, which has many important partners of Vietnam in particular and ASEAN in general, such as the United States, Japan, Korea ... Joining TPP with many provisions and high level of requirements in liberalization of trade and market of products, services and environment ... also demonstrates the determination and commitment to reform and change strongly of the Government of Vietnam. Thereby, it increases the attractiveness of Vietnam's market in particular and the prestige of Vietnam in general for investors and international community; contributing to raising Vietnam's position.

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iv. *Promoting institutional reform, restructuring and improving the competitiveness of the economy*

In fact, after nearly 30 years of innovation and opening, it is shown that the successful opening of the economy always motives to boost economic reforms and improve the development of Vietnam. At the same time, the active reforms and opening policies create opportunities for Vietnam's successful international integration. TPP has created challenges and also pressure on Vietnam to promote its institutional reform, improving the business environment, reforming SOEs, perfecting the legal system ... These reforms ahead is to ensure adequate conditions for Vietnam to enter the "playground" of TPP ... but in the long run, they have a positive impact on the healthy of the economy, promoting economic and social development of Vietnam.

Through TPP, relations of trade, investment and cooperation in education, science and technology between Vietnam with TPP members can improve and expand quickly. Accordingly, it creates more resources from outside to help Vietnam to develop and modernize the country in the new period.

According to the quantitative study of the East - West Center (US), the countries with economies of small scale, especially in Vietnam will be the country receiving the most benefit from TPP and the free trade agreements in the region. The center predicts that by 2025 Vietnam's GDP will increase by 14.7%, mainly due to the expansion of trade through TPP.

TPP is a comprehensive regional free trade agreement. With Vietnam, joining TPP is "an opportunity to make a leap" in areas such as economic development and export promotion, trade facilitation, efficiency in supply chain, modernization and upgrading service sectors, accelerating the equitization of State enterprises, opening the market ...

V. Some Challenges for Vietnam

However, besides opportunities, joining TPP would also pose many difficulties and big challenges for Vietnam. Here are the main challenges.

a) *Increasing pressure on market opening, competition*

Joining TPP will increase the pressure on market opening, competition for enterprises of Vietnam, in the context of Vietnam's generally weak competition capacity and many inadequacies in the ability to manage. When TPP ends, it is likely that tariff reduction commitments of Vietnam will be a little lower than the other countries, because Vietnam is still a developing country, but Vietnam is still facing import competition. Accordingly, if there is no good preparation, many production industries and services may face difficulties, even agricultural products and livestock production, which is an advantage of Vietnam; but many items are forecasted to be difficult in competition at the domestic market, such as pork, beef ...

The opening degree of Vietnam's economy is still low and is protected more than any other TPP member coutries. In fact, in Vietnam, services market, labor market, science and technology ... have not yet fully developed or have only been at the beginning to emerge. So when TPP officially takes effect, Vietnam will face demands from TPP countries on more open to foreign investment in many sectors that Vietnam has not opened its market, such as telecommunications and financial services. Satisfying these requirements will be challenges in terms of business and public policy.

Participation in TPP also leads to big challenges of SOE reform in Vietnam, which in the judgment of the United States it is up to 40% of national GDP. The commitments from TPP may cause some negative social consequences for Vietnam as bankruptcies and unemployment in enterprises with weak competitiveness. Additionally, the results of labor negotiation content in TPP might have an impact on the working environment in Vietnam.

b) *Difficulties for some key export sectors*

TPP refers to all economic and social issues such as tariffs, technical barriers, non-traditional sectors (labor, environment and anti-corruption ...) in 22 groups of field. Besides tax reduction opportunities, the barriers as technical regulations, sanitary and phytosanitary or defense of trade with the regulation of non-market economy which the United States implemented are very likely to disable the benefit from reduction of tariffs on goods of Vietnam. For example, the provisions of TPP on rules of origin and environment ... will cause difficulties for some key export items of Vietnam, such as textiles, fisheries, seafood…

Typically in the rules of origin, the United States requires Vietnam's garment must be from the stage of yarn, which now Vietnam's enterprises is hard to meet and it is likely to have up to 80% of unsatisfactory goods. Meanwhile, Vietnam is pursuing the principle of origin of "cutting and sewing" in TPP which, regardless of the source of materials from countries that are not members of TPP, still enjoy tariff preferences in TPP. As for the environment, the requirements which prohibit fisheries and seafood fishing subsidies can be detrimental to the development policy of this sector ... [3]

c) *Pressure of consolidating the legal framework and the criteria according to international standards*

The commitment and implementation of deep and broad commitments within the framework of TPP will require Vietnam to quickly strengthen its legal system, indicators on quality of products, environment, society, etc. according to international practices. Meanwhile, the legal system of Vietnam is less developed than the other partners in TPP.

Vietnam's law is weak from the stage of drafting to promulgation and enforcement. Currently Vietnam remains the state to use many bylaws to implement a law. The criteria for assessing the quality of products, the level of development of sectors and the economy in general was a big difference compared with international practices both in terms of quality and the method of calculation. For example, the target for poverty reduction is calculated according to the own standards of Vietnam.

To implement the commitments in TPP Agreement, Vietnam will have to adjust and modify many laws and regulations as well as quality indicators on trade, investment, procurement, intellectual property ... In the context of Vietnam today, bringing the law system and the quality indicators, economic and social indicators to a level equal to those of other parties in TPP is extremely difficult.

d) Too large gap for the level of development

The most serious challenge for Vietnam covering the above-mentioned challenges is that Vietnam has a too large gap in the level of development compared to all TPP members. Besides, Vietnam also has major differences with the partners in TPP such as:

- On the market economy: Vietnam has not had a true market economy. The market economy in Vietnam is "socialist", which does not really respect the laws of market in supply and demand, competition and price. The market in Vietnam is basically a new product market; markets of capital, labor, science and technology ... do not develop significantly. The United States is the largest partner in the current TPP also states that Vietnam is still a “non- market economy" and imposes restrictions for textile and aquaculture ... of Vietnam.
- Vietnam has made great strides in the process of liberalizing the economy and become a member of WTO. However, Vietnam still faces criticism over labor standards, intellectual property and the issue of corruption. Particularly on the issue of intellectual property rights, Vietnam remains in the list of countries with the US track, in part because of pirated and counterfeit products still widely consumed in the market, including piracy of copyright online.
- Trade relations between Vietnam and other partners in TPP are mainly related "vertically", which means the export of raw materials, processed products and the importation of technology, machinery, etc.

The above factors will significantly limit the ability to take advantage of opportunities and overcome challenges from TPP of Vietnam.

VI. Some Measures and Proposals

TPP or any other free trade agreements have two sides of theirs, including opportunities and challenges with the economy. The efficient utilization of opportunities that TPP brings depends largely on the maturity, vision and pragmatism required of each country. From practical opportunities and challenges posed by TPP to Vietnam as analyzed above, based on strategic research perspective, we propose a number of recommendations to contribute to help Vietnam take advantage of opportunities and cope better with the challenges, as follows:

Firstly, Vietnam should join TPP in the stage of negotiations with a more positive and more proactive spirit. Accordingly, we should promote the work of information and propaganda to enterprises and people in all sectors and fields to realize the opportunities and challenges; we should be well prepared to welcome TPP since the agreement is being negotiated. The lessons from joining WTO shows, if we only prepare the negotiations well without taking advantage of opportunities well, the economic performance that the agreement brings will not be significant.

Therefore, from this point, in parallel with the preparation of effective negotiation, we need to quickly build and deploy a strategy to take advantage of opportunities and respond to the challenges of TPP effectively. Accordingly, at the government level, we should set up an inter-agency steering committee, bringing officials and excellent experts from ministries, representatives of key businesses together to coordinate to build a policy, develop an overall strategy to put Vietnam to join TPP successfully in the coming years.

In the solutions to cope with the negative impacts of TPP, we should particularly emphasize to build the policies to support sectors and subjects most affected. For example, for the textile industry, we need to focus on developing supporting industries to reduce the import of raw materials from China; in aquaculture sector, we should strengthen the capacity to improve the quality and meet the increasing standards of the US market; with the State enterprise sector, we should have a scheme of insurance support and vocational training for workers losing their jobs ...

It is most likely that the time TPP negotiation ends is also when Vietnam ends a period of economic and social development strategy for 5 years and prepares to enter a new development phase (2015). Accordingly, if Vietnam takes initiative and takes good advantage of the opportunities that TPP brings, this will create a motivation with "resonance" with the drastic reform policies that Vietnam is and will be issueing after the XII Congress, contributing to pushing its strong economic growth.

Secondly, to participate in TPP effectively, Vietnam should accelerate the implementation of the commitments to reform and develop the market economy, improve the efficiency and competitiveness of the economy. In which, determining the economic institutional reforms is the key issue. In the recent period, Vietnam points out the right "disease" of the economy and make the commitments to reform the restructure of public investment, restructuring the banking system, restructuring State enterprises and perform "three breakthrough strategies", building a market economy. However, in fact, the reform process takes place slowly and inefficiently. For example, in business environment, the World Bank (WB) says that the ranking of Vietnam has not changed (still ranked 99/189 economies in 2013), although since 2005 to now, Vietnam has implemented 21 reforms, being the most in East Asia-Pacific.

On investment, since 2007, the Government has advocated improving the quality and efficiency of investment, but so far, the structure and quality of investment has not changed significantly [4]. The institutional reform turns to the market economy, eliminating monopolies in many sectors, despite the correct policy, but the implementation is very slow. Many strategic objectives of economic and social development to 2015 are forecasted to fail [5]. Therefore, to remove the "barriers" to international economic integration in general and joining TPP firmly in particular, Vietnam needs to promote reforms, innovation and early build a market economy with its true sense.

Thirdly, it is necessary to quickly consolidate the legal system, the system of economic assessment indicators to be in conformity with international practice. In fact, most of the quality standards of Vietnam are far behind compared to other countries in TPP. The statistical data system in Vietnam is lacking and outdated compared to the world. Many quantitative indicators of economy, society, environmental, science - technology ... do not have enough data for assessment, [6] or are used improperly (i.e. paying too much attention to GDP growth speed).

Once the indicator system of Vietnam is still too much different from TPP members, the cooperation and integration will be very difficult. Thus, to enter the fully new "playground" of TPP, with the efforts to reform and renew the economy, the improvement of the legal system and building the criteria according to international practice, that each sector and each field rising to improve the quality under the general standards of the world has a very important meaning.

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Oil Revenue, Government Expenditure and Poverty Rate in Nigeria

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Keywords: oil revenue, government expenditure, poverty rate, economic growth, nigeria.

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OILREVENUEGOVERNMENTEXPENDITUREANDPOVERTYRATEINNIGERIA

Strictly as per the compliance and regulations of:

Oil Revenue, Government Expenditure and Poverty Rate in Nigeria

Adelowokan Oluwaseyl [α] & Osoba Adenike M.[σ]

Abstract- This study examines the impact of revenue from oil proceeds and disaggregated government spending on poverty rate in Nigeria. Different econometrics tests i.e. pre-estimation test, estimation techniques and diagnostic tests such as Augmented Dickey Fuller, Engel-Granger co-integration, Ordinary Least squares and Granger causality were analysed using the data sets within the period of 1970 and 2013. Empirical result disclosed that gross domestic product and revenue from oil proceeds exert negative effect on poverty rate in Nigeria during the reviewed period. This revealed that oil proceeds being the main revenue source in Nigeria have greater impact in ensuring equal distribution of income as a means of reducing poverty level among her citizens. Painstakingly, these proceeds are not channelled into right directions with regards to government spending on capital projects and recurrent expenditure. This further exacerbates the poverty level in Nigeria. There is need for effective management of government spending in Nigeria as continuous increase in her expenditure on both capital and recurrent items are needed to bring down the level of poverty in Nigeria.

Keywords: oil revenue, government expenditure, poverty rate, economic growth, nigeria.

I. Introduction

Poverty is a multidimensional problem that goes beyond economic to include, among other things, social, political, and cultural issues. The World Bank's 2000 World Development Report defines poverty as an unacceptable deprivation in human well-being that can comprise both physiological and social deprivation. Physiological deprivation involves the non-fulfilment of basic material or biological needs, including inadequate nutrition, health, education, and shelter. Reducing poverty has been receiving much attention in the global policy discourse (Fosu, 2010). A statement made by the United Nations (2000) shows that poverty reduction is considered one of the most important developmental goals in developing and developed countries alike. However, it has been the Goal 1 of the Millennium Development Goals (MDG1) i.e. halving absolute poverty by 2015 using $1 per capita per day as the international poverty line.

Despite the earnings of Nigeria from oil revenue, a large proportion of the population are still dwelling in abject poverty. Moreover, the resource ought to have transformed into a considerable socio–economic development of the country, but instead, Nigeria's basic social indicators now place her as one of the 25 poorest countries in the world (Akanbi & Toit, 2010). Fortunately, in the early 1970s, she was among the 50 richest countries in the world. In addition, the Nigerian economy has recorded rising growth in its Gross Domestic Product (GDP), most especially over the past decade. Unfortunately, this has not translated into accelerated employment and a reduction in poverty among its citizens, which has also been the case for many African countries. Trend from her past revenue has revealed that the crude oil endowment has been the major factor fuelling the country's economic growth. In the words of Akanbi & Toit (2011), it is, however, expected that the oil revenue should spill over to the rest of the economy leading to a higher shared income for the owners and non – owners of the factors of production. In fact, the World Bank (2011) includes Nigeria in the list of top 15 places with the highest incidence of poverty. The institution went further to state that out of 162 million of her citizens, 90 million live below the poverty level of $2 a day, despite billions of dollars in oil revenues (see fig. 2.1-2.4 in appendix page). Rupasingha & Goetz (2007) argue that few problems have proven more intractable for social scientists and policymakers than that of poverty.

Based on the 2010/11 data of the World Development Index (WDI, 2014), 46.0% of the total population of the country lives below the national poverty line. The data further show that poverty is more prevalent in rural (52.8%) than urban areas (34.1%) (WDI, 2014). Report from the General Household Survey (GHS) panel revealed that between 2012 and 2013, poverty rate per capita is 33.1% with 44.9% in the rural areas and 12.6% in the urban areas (Emejo, 2014; and World Bank, 2014). On the basis of the foregoing, this study examines the impact of revenue from oil proceeds and government expenditure on poverty rate in Nigeria within the period of 1970 and 2013. The remaining part of this paper is structured into five sections; section two presents stylized fact, section three shows literature review, and section four provides the methodology for the study. Section five reveals data presentation and analysis and discussion of findings. The last section gave the concluding part of the study as well as policy options.

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II. Stylized Facts Of Macroeconomic Performance and Poverty Rate in Nigeria

The Nigerian economy has undergone some structural changes over the past four decades. Prior to the country's political independence in 1960, the economy was largely at a rudimentary stage of development. Between 1960 and 1975, agriculture was the core of economic activities in Nigeria with manufacturing and mining playing the residual role. Thus, agricultural commodities dominated the country's export trade while the imports were dominated by manufactured goods. In spite of the dominance of agriculture, the growth rate of real GDP was very impressive (see appendix page, table 2.12). The oil boom of 1973/74 changed the economic environment dramatically. The windfall from oil boom in 1973/74 and 1979/80 had a pervasive effect on the Nigerian economy. The unexpected oil revenue flows provided the basis for large increases in public spending designed to expand socio-economic infrastructure, non-oil productive capacity (e.g., manufacturing) and human capital, among others.

Consequently, the growth rate of money supply rose from 21.8 per cent in 1973 to 52.5 and 67.9 per cent in 1974 and 1975.respectively. In addition, the oil shock also led to the general wage increase of the period. The rising wages, coupled with the appreciating domestic currency that accompanied the boom, squeezed the profitability of non-oil exports while cheap import competed with domestic food production. The oil boom did not only create a Dutch Diseases effect to the agricultural sector but also made Nigeria one of the largest importers of food items with its usual negative effects on the balance of payments (BOP). This led to serious overvaluation of the Naira. Consequent upon this, the BOP position, which had been positive consecutively during 1970 - 1973 and 978 - 1980 turned negative between 1981 and 1983. In short, revenue from oil became the mainstay of the economy with the three tiers of government depending heavily on it for growth and development.

Expectedly, when international oil prices fell sharply in the early and mid-1980s, Nigeria's economy was almost at the verge of collapse. For instance, the growth rate of real income was negative between 1981 and 1984. The country also built up large fiscal and external deficits and other macroeconomic imbalances ensued. The increase in government spending, which accompanied the oil boom, increased public sector deficit, particularly from I975. For instance, the overall fiscal deficit rose from N365.8 million in 1974 to #4.08 billion and #6.21 billion in 1976 and 1978, respectively. As argued by Oyejide (1985), the deficit was financed largely by bank credits and external loans. In fact, the overall fiscal balance, as a proportion of GDP, which was positive in 1979 and 1980 suddenly turned negative and was as high as 11.8 per cent in 1982. The gap between domestic absorption (consumption + investment + imports) and national output, which narrowed down between 1975 and 1980, deteriorated substantially in the 1980 and 1986 period as economic growth declined. External indebtedness also increased phenomenally. It increased from #1.87 billion in 1980 to # 17.2l billion in 1985 before jumping to N41.45 billion in 1986. Consequently, external reserves also declined from N5.4 billion in 1980 to N2.4 billion in 1981 and by 1983 it had plunged to a mere N781.7 million.

To address these problems, government introduced several policy measures e.g. Stabilization Act of 1982, budget-tightening measure of 1984 and finally the Structural Adjustment Programme (SAP) introduced in late 1986. These measures, particularly SAP were aimed at building a self-reliant economy as well as diversifying the structure of the Nigerian economy through the revitalization of the manufacturing sector. Capacity utilization, a barometer of operational and productive efficiency within the manufacturing sector, which was as high as 82.4 and 75.0 per cent in 1970 and 1980, respectively declined drastically thereafter. This was as a result of the economic downturn of the early 1980s. Since the adoption of SAP in 1986, capacity utilization has been lower than what obtained in 1986. It fell from an average of 37.8 per cent in 1986 to 30 per cent in 1989. It rose to 36.9 per cent in 1990, declining systematically thereafter to 27.9 per cent in 1995, though with marginal improvement between 1996 and 1998. Most warehouses were filled with inventory of unsold finished products which resulted in retrenchment in and closure of many enterprises. Unfavourable macroeconomic and policy environments have been adduced for this dismal performance in the industrial sector.

Critical among these is the disturbing rate of inflation. The price movement which experienced all average of 3.85 per cent between 1960 and 1969 became more volatile in the 1980s, particularly after the introduction of SAP in 1986. It rose from 11.8 per cent in 1975 – 85 to 20.45 and 48.2 per cent during 1986 - 90 and 1991 - 96, respectively (see Table 2.10.) For instance, inflation rate was as high as 38.3, 57.2 and 72.8 per cent in 1988, 1993 and 1995 respectively. As shown in the table, periods of high inflation often coincided with periods of high growth rate of money supply. During this period, consumers complained bitterly about their declining purchasing power which seriously hindered effective demand in the system. This partly accounts for the piling up of inventories in many companies' warehouses. Another negative impact of the skyrocketing inflation rate is the instability that is often transferred to other macroeconomic variables, thus creating an unconducive atmosphere for investment in the real sector of the economy. Thus, speculative and service businesses boom at the expense of productive activities. Such is the case of the past two and a half decades in Nigeria.

III. Literature Review

a) *Theoretical Review*

Prior to the endogenous growth model, the modifications of the neoclassical growth model can be made along the lines of thought of Ramsey (1928), Cass (1965) and Koopmans (1965) in Akanbi & Toit (2011) known as "RCK model", which are all centred on social planning problems (not market determined outcomes) that use dynamic optimization analyses of households' savings behaviour (which is taken as a constant fraction of income by Solow). The ideology behind their argument is that agents in the community are identical and that they live forever, which implies that they will maximise their utility over their lifetime.

The endogenous growth theory (i.e. the new growth theory) started gaining popularity in the growth literature of the early 1980s in response to a series of criticism on the assumptions made in neoclassical theory. The new growth theory also gained tremendous popularity because of its strength which can be attributed to its ability to solve most of the limitations of neoclassical growth models as well as to include some socio-economic factors that will propel growth over the long run. These tend to discard the assumption of constant returns to scale, replacing it with increasing returns to scale and thus determining growth mainly by endogenous variables. Technology and human capital are regarded as endogenous, unlike the neoclassical model that assumed these to be exogenous. However, the main emphasis of the long-term growth model is that it does not depend on exogenous factors and, most importantly, that it allows for policies that tend to affect savings and investment (King and Rebelo, 1990).

The assumption of increasing returns posed a major challenge to the new growth models since it does not apply to a perfectly competitive market because production factors cannot be paid from the amount produced. However, by only using increasing returns that are external to the firm, this problem can be circumvented, as was observed by Romer (1986), Lucas (1988), and Barro (1990). Increasing returns have been fully specified in Romer (1986) as a major requirement in achieving endogenous growth, while emphasis on human capital accumulation as endogenous in growth models was explicit in Lucas (1988).

Though most common models of poverty traps are rooted in the neoclassical growth theory (Azariadis & Stachurski, 2005), which is the dominant foundational framework for modelling economic growth (Stone, 2011; Ngonghala, Plucinski, Murray, et al. 2014). Nonetheless, the endogenous growth model has edge over the neoclassical over its assumption of increasing returns. Therefore, the analytical framework and model formulation for this study rely on the endogenous growth model.

b) *Empirical Review*

Literature in the area has stimulated various reaction in the empirical evidence available from cross country comparisons, bearing on the relationship among oil revenue, government expenditure and poverty rate. Mitchell (2005) evaluated the impact of government spending on economic performance in developed countries. Regardless of the methodology or model employed, he concluded that a large and growing government is not conducive to better economic performance. He further argue that reducing the size of government would lead to higher incomes and improve American's competitiveness.

More so, Chirwa (2005) examined the impact of alternative macroeconomic policies on changes in poverty level in Malawi using panel data within 1998 to 2002. The study revealed that macroeconomic policies that facilitate the redistribution of land, creation of salaried employment opportunities and accumulation of assets have the greatest potentials in reducing poverty in rural Malawi. Owoeye and Adenuga (2002) carried out a study on human capital and economic growth. They used co-integration and error correction mechanism to determine the relationship and direction of causality between growth rate and social spending. The time properties of the variables were investigated by conducting a with test using sample period starting from 1970-2000. Their results showed that all the variable were first difference stationary i.e. I(1). Their results also show that GDP co-integrated with all the explanatory variables.

Also, Ali and Thorbecke (2000), provided a detailed analysis of the state and evolution of poverty in African countries (Cote d'Ivoire, Ghana, Nigeria and Uganda), as well as the characteristics of the poor in both rural and urban areas. The study analysed the effects of growth and income distribution on spread, depth and severity of poverty for rural and urban areas. It conducts the sensitivity of poverty to changes in economic growth and income distribution, and found that growth has a bigger effect on poverty in rural than in urban areas. The study also analysed time changes in poverty for several African countries (Cote d'Ivoire, Ghana, Nigeria and Uganda), using a well known decomposition method. The study found a substantial effect of distributional policies on poverty. Specifically, the findings from the study revealed that irrespective of growth performance of countries, poverty fell in the two countries where inequality declined (that is, Ghana and Cote-d'Ivoire) and increased in countries where inequality worsened (Nigeria and Uganda).

In a similar study, Ogwumike (2010) discussed the various approaches to the measurement of poverty and inequality, applying such approaches to Africa. The study reviewed the methods for assessing how inequality, poverty and economic well-being in a given country or region have changed over time. Of particular interest to this study are the relationships among economic inequality, economic growth and poverty. The study fund that the Kuznets long run inverted- U relationship between inequality and economic growth is not discernible from African data. The findings from the study revealed that it is not the rate of economic growth or the stage of economic growth that determines whether income inequality increases or decreases, but rather the kind of economic growth witnessed. With regard to the evolution of poverty, Fields (2000) reported that there is currently little or no consensus in the literature on the relative effects of growth and distribution. Thus, inconclusive reports in Africa necessitated the need for understanding poverty from macroeconomic perspective.

Furthermore, Datt and Ravallion (1992), corroborated this argument by stating that when the poverty line is held constant overtime, poverty reduction effects of growth are overstated and the contribution of improvements in income distribution are underestimated and vice versa. Thus, the proper understanding of the concept of poverty may be critical to resolving this important debate of the relative importance of economic growth and income distribution for poverty reduction.

IV. Model Specification and Estimation Techniques

The study employed and modified the model of Rupasingha & Goetz (2007) to estimate the relationship among revenue from oil proceeds, government expenditure and poverty rate in Nigeria. The model expresses poverty rate (POV) has a function of the government capital expenditure (GCE), gross capital formation (GCF), market size of the host country proxy by gross domestic product (GDP), government recurrent expenditure (GRE), and revenue from oil proceeds (OLR). It is thus presented below as thus:

$$POV = \beta_0 + \beta_1 GCE + \beta_2 GCF + \beta_3 GDP + \beta_4 GRE + \beta_5 OLR + \mu \quad (3.1)$$

The logarithm value of government capital expenditure (GCE), gross capital formation (GCF), market size of the host country proxy by gross domestic product (GDP), government recurrent expenditure (GRE), and revenue from oil proceeds (OLR) are expressed in smaller case. This is expressed as thus:

$$POV = \beta_0 + \beta_1 gce + \beta_2 gcf + \beta_3 gdp + \beta_4 gre + \beta_5 olr + \mu \quad (3.2)$$

Where β_0 is constant, β_{1-5} are coefficients or elasticities and μ is the disturbance term.

A'priori expectation anticipates poverty rate to be negatively related to the host country's market size i.e. income, government capital expenditure, gross capital formation, government recurrent expenditure and revenue from oil proceeds. For the purpose of this study, only secondary method of data collection is employed to establish the relationship. Annual (secondary) data of the variables are used, and they were collected from the Central Bank of Nigeria statistical bulletin, 2014 and World Development Index (WDI), 2014. Annual (secondary) data of the variable are used for the period of 1970 to 2013.

The model is estimated using the Ordinary Least Squares (OLS) for long-run estimates. Before estimation, we performed a stationarity (unit root) test using Augmented Dickey Fuller (ADF) that excludes the intercept and trend and Engel Granger cointegration test for long-run relationship. Furthermore, we also conducted the Granger causality test to show the causal relationship among variables of interest.

V. Empirical Analysis and Discussions

a) *Unit Root Test Analysis*

The stationary test results of the incorporated times series variables in the regression model expressed in previous section is presented in Table 4.1 using the Augmented Dickey-Fuller (ADF) unit-root test. The test result indicated that the time series variable, government capital expenditure (GCE), gross capital formation (GCF), gross domestic product (GDP), government recurrent expenditure (GRE), and poverty rate (POV) were not found to reject the null hypothesis "*no stationary*" at level. This implies that these series are not stationary at levels i.e. first-difference of this series is *mean reverting* and stationary. Then, the series is integrated of order one i.e. I(1).

However, revenue from oil proceeds (OLR) is stationary at level i.e. integrated at order zero [I(0)]. Thus, it was found not to reject the null hypothesis "*no stationary*" at level but after several iterations based on the number of lag length and differencing, the series were found to reject the null hypothesis at first difference. This indicates that the first-difference of those series is *mean reverting* and stationary.

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Table 4.1 : ADF Unit Root Test Results

Series	T-ADF Statistics	Order of Integration
GCE	-4.4899 (1) -4.1985*	1
GCF	-4.6903 (1) -4.1985*	1
GDP	-3.4463 (1) -3.1929**	1
GRE	-4.5678 (1) -4.1985*	1
OLR	-6.5038 (8) -3.6329	0
POV	-4.9829 (0) -3.5966	1

*Note: *, ** & *** denote 1%, 5% and 10% significant level respectively.*

Source: Author's computation (2015).

Subsequently, econometric literature has indicated that linearly combining or regressing a non-stationary series on non-stationary and stationary time series might yield spurious regression and render estimated parameters inefficient. Thus, this argument prompts the cointegration test to examine if the linear combination of our considered poverty rate determinants.

b) Cointegration, Long-Run Estimates and Diagnostic Test

The long-run relationship between macroeconomic variable and poverty rate determinants in Nigeria between 1970 and 2013 was examined using the Engle-Granger cointegration technique and the test results are shown on Table 4.2.

Table 4.2 : Engle-Granger Cointegration Results

Series	ADF Test at Level		Decision
	T-ADF Statistics	Critical Value	
$ECT = u = POV - \begin{pmatrix} \alpha + \beta_1 GCE + \beta_2 GCF + \beta_3 GDP \\ + \beta_4 GRE + \beta_5 OLR \end{pmatrix}$	1% level: -3.5925 5% level: -2.9314 10% level: -2.6039	-3.3378 (0.0192)	Stationary i.e. Cointegrated

Source: Author's computation (2015).

The cointegration result presented in Table 4.2 indicated that the estimated residual (ECM) from the main empirical model was found to be stationary at level. This indicates that the null hypothesis "no cointegration" was rejected at 5% significance level. This implies that there exist long-run relationships among government capital expenditure (GCE), gross capital formation (GCF), gross domestic product (GDP), government recurrent expenditure (GRE), revenue from oil proceeds (OLR) and poverty rate (POV) in Nigeria between 1970 and 2013. Thus, there is long-run relationship between all the incorporated government expenditure, proceeds from oil and poverty rate in Nigeria.

The cointegrating equation was estimated using the ordinary least squares (OLS) method and the long-run estimates were presented on Table 4.3. The estimates of the long-run model that captures the effect of macroeconomic variables contribution (such as government expenditure and oil revenue) on poverty rate in Nigeria between 1970 and 2013 indicated that gross domestic product (GDP) and revenue from oil proceeds (OLR) exert negative effect on poverty rate (POV) in Nigeria during the reviewed period. They were found to be in tandem with theoretical expectation as they were able to reduce poverty in Nigeria. In magnitude term, a percentage change in gross domestic product (GDP) and revenue from oil proceeds (OLR) reduce poverty rate by 1.41% and 5.65% respectively. However, only revenue from oil proceeds has significantly impact poverty rate by 5% significance level.

Table 4.3 : Estimated Long-Run Model Results and Diagnostic Test

Dependent Variable: POV				
Method: Least Squares				
Observation (n) = 44				
Variable	Coefficient	Std. Error	Tstatistics	Prob.
C	-36.6651	46.0044	-0.7969	0.4304
Gce	8.2453	1.8634	4.4249	0.0001
Gcf	3.0290	0.6904	4.3872	0.0001
Gdp	-1.4063	2.8799	-0.488	0.6281

Gre	2.49056	3.70665	0.6719	0.5057
Olr	-5.6445	2.5757	-2.1914	0.0346
R-squared	0.9240	Durbin-Watson stat		1.8449
Adjusted R^2	0.9141	F-statistic		92.4721
S.E. of regression	5.6828	Prob(F-statistic)		0.0000
		Residual Normality Test		
Jarque-Bera	3.8774	Prob(J.B)		0.1439
		Breusch-Godfrey Serial Correlation LM Test		
F-statistic	10.0720	Prob. F(1, 36)		0.1152
Obs*R-squared	9.1818	Prob. Chi-Square(1)		0.0721
		Heteroskedasticity Test: Breusch-Pagan-Godfrey		
F-statistic	1.0816	Prob. F(4,26)		0.3859
Obs*R-squared	4.4227	Prob. Chi-Square(4)		0.3518

Source: Author's Computation (2015).

On the other side, government capital expenditure (GCE), gross capital formation (GCF), and government recurrent expenditure (GRE) were found to have positive effect on poverty rate (POV) in Nigeria as these effects do not conform with a'priori expectation. Correspondingly, a percentage increase in government capital expenditure (GCE), gross capital formation (GCF), and government recurrent expenditure (GRE) deteriorate poverty level in Nigeria by 8.25%, 3.03% and 2.49%. The result shows that the estimated parameters of government capital expenditure (GCE) and gross capital formation (GCF) were found to be partially and statistically significant at 5% critical level because their *p-values* are less than 0.05.

Thus, the F-statistic result indicated that all the incorporated government expenditure and oil revenue indicators are simultaneously significant at 5% critical level. This prompts the rejection of the null hypothesis "oil revenue and government expenditure have no significant effect on poverty rate in Nigeria". More so, the adjusted R-squared result reveals that 91.4% of the total variation in poverty rate (POV) is accounted by changes in government capital expenditure (GCE), gross capital formation (GCF), gross domestic product (GDP), government recurrent expenditure (GRE), revenue from oil proceeds (OLR) during the review period. The Durbin-Watson test result reveals that there is presence of strong positive serial correlation among the residuals, because of the d-value (1.8448) is less than two.

However, the Breusch-Godfrey serial correlation test result from table 4.2 reported that we do not reject the null hypothesis *"no serial correlation"* at 5% significance level, and likewise for the Breusch-Pagan-Godfrey heteroskedasticity test, the result indicated that we do not reject the null hypothesis "*no hereroskedasticity*" at 5% significance level.

The table also reports the probability value of the Jarque-Bera statistic (0.1439) shows that the estimated residual series is normally distributed with zero mean and constant variance. This tends to improve the reliability of the estimated parameters and thus, necessitate other residual diagnostic test such as higher order serial correlation and heteroskedasticity tests.

c) Granger Causality Analysis

The pair-wise Granger causality test results of the relationship between oil revenue, government expenditure and poverty rate in Nigeria from 1970 to 2013 were presented on Table 4.4.

Table 4.4 : Pair-Wise Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Prob.
GCE does not Granger Cause POV	42	1.28273	0.2893
POV does not Granger Cause GCE		1.34733	0.2724
GCF does not Granger Cause POV	42	3.97153	0.0274
POV does not Granger Cause GCF		1.11015	0.3402
GDP does not Granger Cause POV	42	2.98023	0.0631
POV does not Granger Cause GDP		0.61625	0.5454
GRE does not Granger Cause POV	42	2.84088	0.0712
POV does not Granger Cause GRE		1.83265	0.1742
OLR does not Granger Cause POV	42	0.40500	0.6699

POV does not Granger Cause OLR		2.89020	0.0682
GCF does not Granger Cause GCE	42	1.15177	0.3271
GCE does not Granger Cause GCF		11.3142	0.0001
GDP does not Granger Cause GCE	42	0.49909	0.6111
GCE does not Granger Cause GDP		8.70774	0.0008
GRE does not Granger Cause GCE	42	0.61523	0.5460
GCE does not Granger Cause GRE		16.4925	8.E-06
OLR does not Granger Cause GCE	42	6.81668	0.0030
GCE does not Granger Cause OLR		6.87987	0.0029
GDP does not Granger Cause GCF	42	43.4202	2.E-10
GCF does not Granger Cause GDP		42.8329	2.E-10
GRE does not Granger Cause GCF	42	25.1670	1.E-07
GCF does not Granger Cause GRE		20.1458	1.E-06
OLR does not Granger Cause GCF	42	26.3831	8.E-08
GCF does not Granger Cause OLR		15.9437	1.E-05
GRE does not Granger Cause GDP	42	19.1185	2.E-06
GDP does not Granger Cause GRE		8.51231	0.0009
OLR does not Granger Cause GDP	42	17.2348	5.E-06
GDP does not Granger Cause OLR		17.8360	4.E-06
OLR does not Granger Cause GRE	42	72.5328	2.E-13
GRE does not Granger Cause OLR		12.9424	5.E-05

Source: Author's computation (2015).

The test result indicated that on the basis of the F-statistic values, the null hypotheses that "each of gross capital formation (GCF), gross domestic product (GDP), and government recurrent expenditure (GRE) does not Granger cause poverty rate (POV)" were not rejected at either 5% and 10% critical levels. This implies that investment, income and recurrent expenditure by government do Granger cause poverty rate in Nigeria. This denotes a uni-directional causation from investment, income and recurrent expenditure by government to poverty rate. Contrary to the above findings, a uni-directional causation runs from poverty rate to oil revenue. Considering capital expenditure by government, it has no causal relationship with poverty rate, and no feedback was also reported.

Other null hypothesis i.e. GCE does not Granger Cause GCF; GCE does not Granger Cause GDP; and GCE does not Granger Cause GRE were rejected at either 5% or 10% significant level, signifying a uni-directional causal relationship. In addition, these variables i.e. GCE do not Granger Cause OLR; GCF does not Granger Cause GDP; GCF does not Granger Cause GRE; OLR does not Granger Cause GCF; GRE does not Granger Cause GDP; OLR does not Granger Cause GDP; and OLR does not Granger Cause GRE report a bi-directional causal relations at varying significant levels.

VI. Conclusion and Policy Options

This study critically examined the precise relationship among oil revenue, government expenditure and poverty rate in Nigeria between 1970 and 2013. During this time period, the Nigerian economy has undergone series of economic reforms over the years. The ordinary least squares (OLS), diagnostic tests and Granger causality test were carried out as econometric methods of estimation. Empirical result disclosed that gross domestic product and revenue from oil proceeds exert negative effect on poverty rate in Nigeria during the reviewed period. This revealed that oil proceeds being the main revenue source in Nigeria have greater impact in ensuring equal distribution of income as a means of reducing poverty level among her citizens. It further shows the high dependency of government on oil as this serves as a medium through which eradication of poverty can be achieved. Painstakingly, these proceeds are not channelled into the right direction as government spending on capital projects and recurrent expenditure further enhance poverty level in Nigeria. On this note, there is need for effective management of government spending in Nigeria as continuous increase in her expenditure on both capital and recurrent items are needed to bring down the level of poverty in Nigeria.

Furthermore, the Granger causality test reports a bi-directional causal relationship from investment, income and recurrent expenditure by government to poverty rate. This however confirms the effectiveness of government spending towards poverty reduction. More so, poverty rate was found to Granger cause oil revenue. It implies that if poverty rate is not tackled, revenue from oil proceeds may decline as insecurity will affect the activities of oil companies in the oil-producing regions. For example, the crisis in the Niger-Delta has been a major obstacle to crude oil production over the years.

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Appendix

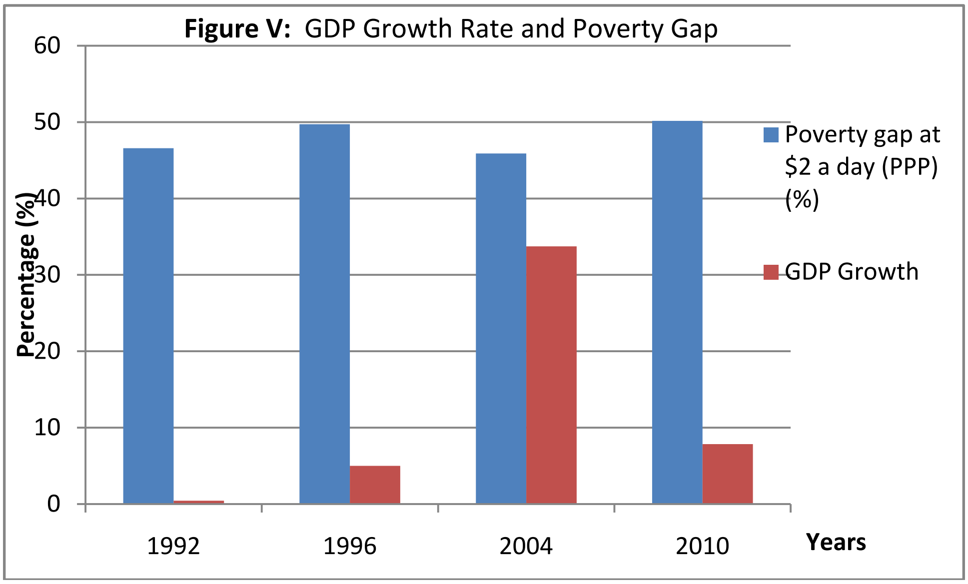

Figure 2.1 : Plot of GDP Growth rate and Poverty Gap (1991-2010)

Source: World Development Indicator, CD-ROM, July 2012

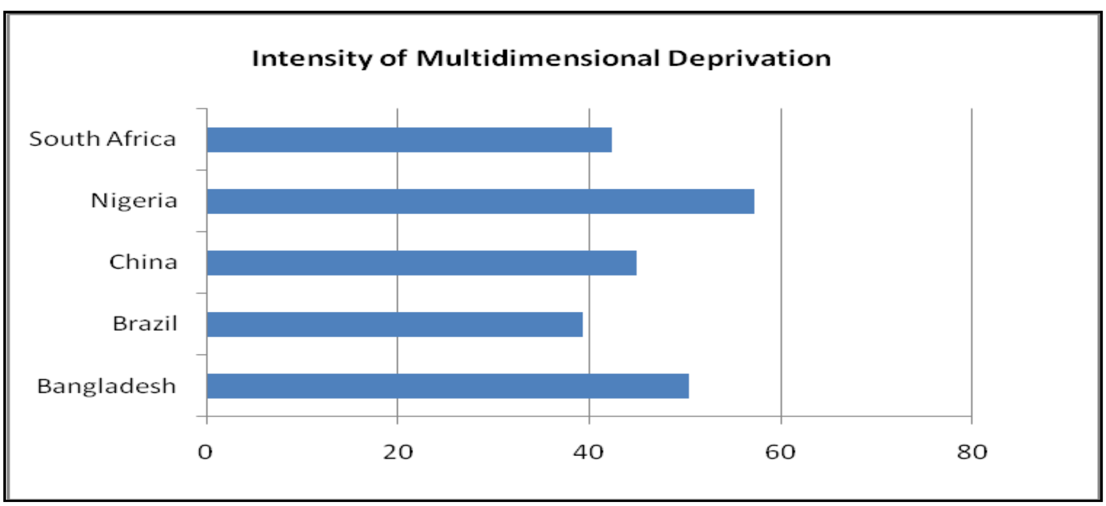

Figure 2.2 : Plot of Intensity of Multidimensional Deprivation (1991-2010)

Source: World Development Indicator, CD-ROM, July 2012

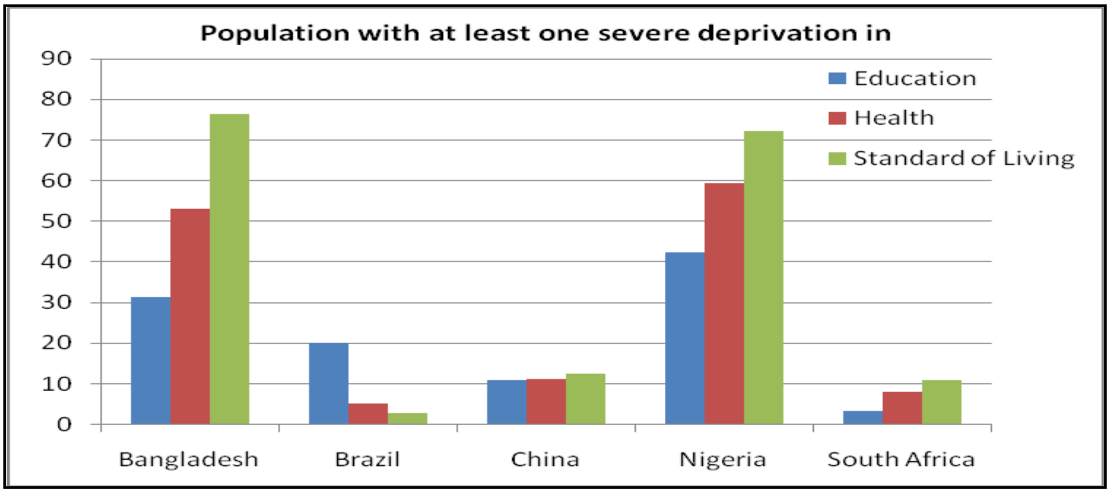

Figure 2.3 : Plot of Severe Deprivation in Education, Health & Living Standard (1991-2010)

Source: World Development Indicator, CD-ROM, July 2012.

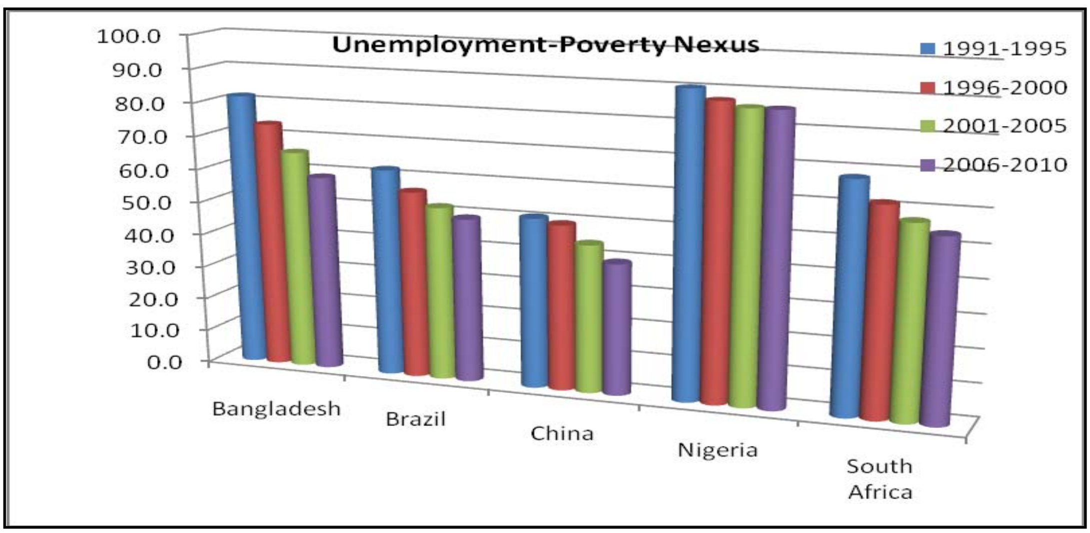

Figure 2.4 : Plot of Age dependency ratio (% of working-age population) (1991-2010)

Source: World Development Indicator, CD-ROM, July 2012

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Exchange Rate Volatility on Investment and Growth in Nigeria, an Empirical Analysis

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Abstract- This paper examines the effect of exchange rate volatility on investment and growth in Nigeria over the period of 1986 to 2014. The vector error correction method, impulse responses function, co-integration and Augmented Dickey Fuller (ADF) test for stationarity were employed to capture the interactions between the variables. The results confirm the existence of long run relationship between exchange rate, investment, interest rate, inflation and growth. Finally the results show that exchange rate volatility has a negative effect with investment and growth while exchange rate volatility has a positive relationship with inflation and interest rate in Nigeria. Based on our findings, we recommended that the policy makers should developed sound exchange rate management system in the country potent enough for better growth in the economy.

Keywords: exchange rate, volatility, investment, VAR.

GJMBR - B Classification : JEL Code: P45

EXCHANGERATEVOLATILITYONINVESTMENTANDGROWTHINNIGERIAANEMPIRICALANALYSIS

Strictly as per the compliance and regulations of:

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Adelowokan Oluwaseyi A. [α], Adesoye A. B. [σ] & Balogun Oluwakemi D. [ρ]

Abstract- This paper examines the effect of exchange rate volatility on investment and growth in Nigeria over the period of 1986 to 2014. The vector error correction method, impulse responses function, co-integration and Augmented Dickey Fuller (ADF) test for stationarity were employed to capture the interactions between the variables. The results confirm the existence of long run relationship between exchange rate, investment, interest rate, inflation and growth. Finally the results show that exchange rate volatility has a negative effect with investment and growth while exchange rate volatility has a positive relationship with inflation and interest rate in Nigeria. Based on our findings, we recommended that the policy makers should developed sound exchange rate management system in the country potent enough for better growth in the economy.

Keywords: exchange rate, volatility, investment, VAR.

I. Introduction

In Nigeria, exchange rate management has undergone large changes over four decades. In 1960s Nigeria operated a fixed exchange regime which was fixed at par with the British pound and later the American dollar in addition to restrictions on import via strict administrative controls on foreign exchange. In 1978, the monetary authorities pegged the naira to a basket of 12 currencies of her major trading partners. The sharp fall in international oil price and consequent decline in foreign exchange receipts in the early 1980s were such that the economy could not meet its international financial commitments, and to migrate the challenges, the stabilization act of 1982 was implemented which led to accelerated depreciation of the naira. In Nigeria, the management of the exchange rate is vested in the Central bank of Nigeria (CBN) and since the introduction of the structural Adjustment Programme (SAP) in 1986; exchange rate management has been a core macroeconomic policy function. Mordi, (2006) agreed that exchange rate has appreciated and has been relatively stable. Benson and Victor, (2012) and Aliyu, (2011) noted that despite various efforts by the government to maintain a stable exchange rate, the naira has depreciated throughout the 80's to date.

Exchange rate volatility became significant following the breakdown of the Bretton Wood Agreement in 1973 after which exchange rate became flexible among world currencies. Literature put it that exchange rate became more volatile in Nigeria after the introduction of widely known currency control measures called the Structural Adjustment Programme (SAP) in 1986. Volatility in Nigeria manifests in different forms ranging from volatility in real growth rates, price inflation, investment per capita and government revenues per capita to fluctuations in terms of trade and real exchange rate. There are numerous reasons why research into the effect of exchange rate volatility on investment inflows is important for a developing resource-based economy like Nigeria. First, macroeconomic volatility represents a measure of the uncertainty that economic agents face about the future. In turn, uncertainty affects the future level of growth and investment. Second, government policy is often directed towards reducing volatility by smoothing out the fluctuations in the time path of income, price and investment, among others.

According to the literature, exchange rate volatility has to do with the unusual movements of the exchange rate. Exchange rate is one of the economic indicators which directly affect investment as such as its role in the overall economic objectives of a country cannot be underestimated. This gives confidence to why the public sectors, foreign investor and private individual pay a lot of attention to the exchange rate volatility. Since September 1986, when the market determined exchange rate system was introduced via the second tier foreign exchange market, the naira exchange rate has exhibited the features of continuous depreciation and instability. People have not been investing due to exchange rate volatility. This instability and continued depreciation of the naira in the foreign exchange market has resulted in declines in the investment, standard of living of the populace, increased cost of production which also leads to cost push inflation. It has also tended to undermine the international competitiveness of non-oil exports and make planning and projections difficult at both micro and macro levels of the economy. A good number of small and medium scale enterprises have been strangled out as a result of low dollar/ naira exchange rate and so many other problems resulting from fluctuations in exchange rates can also be identified.

The purpose of this paper is therefore, to examine the effect of exchange rate volatility on

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investment and growth in Nigeria. The vector error correction method is applied to estimate the impulse response functions for investment and growth in order to determine how investment and growth responds to exchange rate volatility.

II. Literature Review

Several studies have been conducted on the effect of exchange rate volatility. Few of the studies have conducted both exchange rate volatility on growth and investment in Nigeria.

Manalo, Perera and Rees (2014) examine the effects of exchange rate movements on the Australian economy using the structural vector auto-regression model using seasonally adjusted data at quarterly frequencies for the period of 1985Q1 to 2013Q2. They found out that a temporary 10 per cent appreciation of the real exchange rate that is unrelated to the terms of trade or interest rate differentials lowers the level of real GDP over the subsequent one-to-two years by 0.3 per cent and year-ended inflation by 0.3 percentage points. Chowdhry and Wheeler (2008) in an empirical analysis studied the relationship between volatility of exchange rate for the four developed countries of Canada, Japan, United State and United Kingdom. Using a number of variables this study applied vector auto regressive (VAR) approach and found that shocks to exchange rate volatility have positive and significant impact on flow of FDI. Akeju(2014) also examines the impact of real exchange rate on terms of trade and ecopnomic growth which relies on cointegration techniquies and error correction model using annual data covering from 1980-2012. It was revealed that a real exchange rate moves along the same direction with terms of trade in the long run. Rasaq (2013) examined the impact of exchange rate volatility on the macro economic variables in nigeria and findings shows that exchange rate volatilty has a positive influence on GDP, FDI and trade openess with a negative influence on the inflationary rate in the country. Dada and oyeranti (2012) examines exchange rate and macroeconomic aggregates in Nigeria. The result shows that there is no evidence of a strong direction between changes in the exchange rate and GDP growth. Rather, the countrys growth has been directly affected by fiscal and monetary policies and other economic variables particularly the growth of exports which is marjorly oil. In short, the nature of the effect of exchange rate volatility on investment and growth is yet unresolved. There is therefore the need for more empirical research on the subject matter. This is particularly important in view of the nature of exchange rate in developing countries like Nigeria.

III. Theoretical Underpinnings

Romer in his first paper on endogenous growth in 1986 presented a variant on Arrow's model which is known as learning by investment. He assumes creation of knowledge as a side product of investment. He takes knowledge as an input in the production function of the following form

$Y = A(R)\ F\ (R_i, K_{i\ ,}L_i)$

Where Y = aggregate output/Gross Domestic Product (GDP),

A = public stock of knowledge

R and $R_{i\ =}$ stock of expenditure

i, K_i and L_i = capital stock and labour stock of firm i respectively.

He assume the function F homogeneous of degree one in all its input R_i, K_i, and L_i and treat R_i as a rival good. Romer took three key elements in his model, namely externalities, increasing returns in the production of output and diminishing returns in the production of new knowledge. According to Romer, it is spill-over's from research efforts by a firm that leads to the creation of new knowledge by other firms. In other words, words, new research technology by a firm spills-over instantly across the entire economy. In his model, new knowledge is the ultimate determinant of long-run growth which is determined by investment in research technology. Research technology exhibits diminishing returns which mean that investment in research technology will not double knowledge. Moreover, the firm investing in research technology will not be the exclusive beneficiary of the increase in knowledge. The other firms also make use of the new knowledge due to the inadequacy of patent protection and increase their production. Thus the production of goods from increased knowledge displays increasing returns and competitive equilibrium is consistent with increasing aggregate returns owing to externalities. Thus Romer takes investment in research technology as endogenous factor in terms of the acquisition of new knowledge by rational profit.

IV. Methodology

The goal of the paper is to ascertain if exchange rate volatility enhance investment and economic growth. This study will adopt Vector Autoregressive (VAR model). The vector autoregressive (VAR) model is one of the most successful, flexible, and easy to use models for the analysis of multivariate time series. It is a natural extension of the univariate autoregressive model to dynamic multivariate time series. This study will adapt the model specified by (Sims 1980). He said a *path-order* VAR is also called a VAR with *p* lags. The process of choosing the maximum lag *p* in the VAR model requires special attention because inference is dependent on correctness of the selected lag order:

A *p-th order VAR*, denoted VAR (*p*), is

$$y_t = c + A_1 y_{t-1} + A_2 y_{t-2} + \cdots + A_p y_{t-p} + e_t, \qquad \text{-------------- (i)}$$

where the *l*-periods back observation y_{t-l} is called the *l*-th*lag* of *y*, *c* is a $k \times 1$ vector of constants (intercepts), A_i is a time-invariant $k \times k$matrix and e_t is a $k \times 1$ vector of error terms satisfying.

The model for this study is therefore represented as:

$$EXR = c + A_1Gdp_{t-1} + A_2Invest_{t-2} + A_3Inf_{t-3} + A_4Int_{t-4} + e_t \qquad \text{--------------------- (2)}$$

Where:

EXR = Exchange rate

GDP = Gross Domestic Product

INVEST = Investment

INF = Inflation Rate

INT = Interest Rate

E_t = Error Term

The VAR model is expressed in a system as:

$$EXR_t = c_1 + \sum_{i=1}^{p} \pi_{11,i} EXR_{t-i} + \sum_{i=1}^{p} \pi_{12i} GDP_{t-i} + \sum_{i=1}^{p} \pi_{13,i} INVEST_{t-i} + \sum_{i=1}^{p} \pi_{14,i} INF_{t-i} + \sum_{i=1}^{p} \pi_{15,i} INT_{t-i} + \mu_{1,t} \qquad (3)$$

$$GDP_t = c_1 + \sum_{i=1}^{p} \pi_{11,i} GDP_{t-i} + \sum_{i=1}^{p} \pi_{12i} EXR_{t-i} + \sum_{i=1}^{p} \pi_{13,i} INVEST_{t-i} + \sum_{i=1}^{p} \pi_{14,i} INF_{t-i} + \sum_{i=1}^{p} \pi_{15,i} INT_{t-i} + \mu_{1,t} \qquad (4)$$

$$INVEST_t = c_1 + \sum_{i=1}^{p} \pi_{11,i} INVEST_{t-i} + \sum_{i=1}^{p} \pi_{12i} EXR_{t-i} + \sum_{i=1}^{p} \pi_{13,i} GDP_{t-i} + \sum_{i=1}^{p} \pi_{14,i} INF_{t-i} + \sum_{i=1}^{p} \pi_{15,i} INT_{t-i} + \mu_{1,t} \qquad (5)$$

$$INF_t = c_1 + \sum_{i=1}^{p} \pi_{11,i} INF_{t-i} + \sum_{i=1}^{p} \pi_{12i} EXR_{t-i} + \sum_{i=1}^{p} \pi_{13,i} INVEST_{t-i} + \sum_{i=1}^{p} \pi_{14,i} GDP_{t-i} + \sum_{i=1}^{p} \pi_{15,i} INT_{t-i} + \mu_{1,t} \qquad (6)$$

$$INT_t = c_1 + \sum_{i=1}^{p} \pi_{11,i} INT_{t-i} + \sum_{i=1}^{p} \pi_{12i} EXR_{t-i} + \sum_{i=1}^{p} \pi_{13,i} INVEST_{t-i} + \sum_{i=1}^{p} \pi_{14,i} INF_{t-i} + \sum_{i=1}^{p} \pi_{15,i} GDP_{t-i} + \mu_{1,t} \qquad (7)$$

The VAR (p) system equation (3) to equation (7) can be represented in a reduced form within a matrix framework as:

$$\begin{bmatrix} EXR_t \\ GDP_t \\ INVEST_t \\ INF_t \\ INT_t \end{bmatrix} = \begin{bmatrix} c_1 \\ c_2 \\ c_3 \\ c_4 \\ c_5 \end{bmatrix} + \sum_{i=1}^{p} \begin{bmatrix} \pi_{11} & \pi_{12} & \pi_{13} & \pi_{14} \\ \pi_{21} & \pi_{22} & \pi_{23} & \pi_{24} \\ \pi_{31} & \pi_{32} & \pi_{33} & \pi_{34} \\ \pi_{41} & \pi_{42} & \pi_{43} & \pi_{44} \\ \pi_{51} & \pi_{52} & \pi_{53} & \pi_{54} \end{bmatrix} \times \begin{bmatrix} EXR_{t-i} \\ GDP_{t-i} \\ INVEST_{t-i} \\ INF_{t-i} \\ INT_{t-i} \end{bmatrix} + \begin{bmatrix} \mu_{1,t} \\ \mu_{2,t} \\ \mu_{3,t} \\ \mu_{4,t} \\ \mu_{5,t} \end{bmatrix} \qquad (8)$$

Exchange Rate Volatility is measured by taking the standard deviation of the moving average of the logarithm of real exchange rate, as well as a dummy capturing the amount of times the exchange rate moves above and below the average values of the real effective exchange rate in predetermined intervals.

V. Empirical Result and Discussions

a) *Trend Analysis Result*

This section of this study access the trend of exchange rate volatility on investment and growth in Nigeria from 1986 to 2014. This enables to determine causal relationship among exchange rate volatility, investment and growth proxy as growth rate of gross domestic product (GDP).

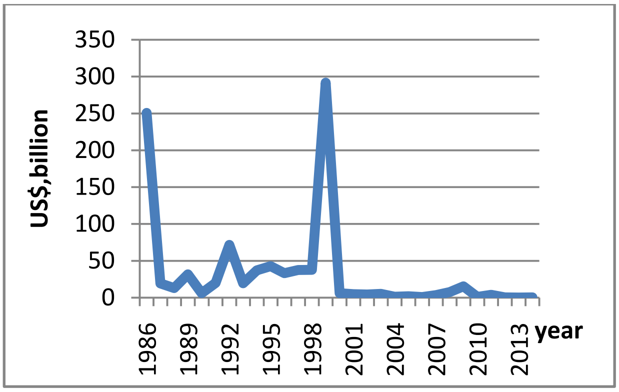


Figure 1 : Exchange rate Volatility (US$'billion)

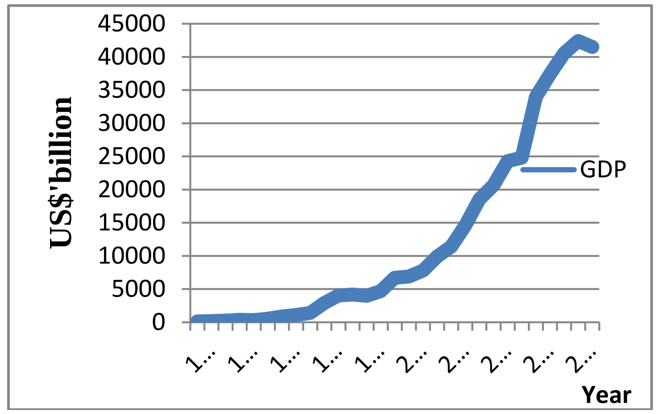


Figure 2 : Gross Domestic Product (US$'billion)

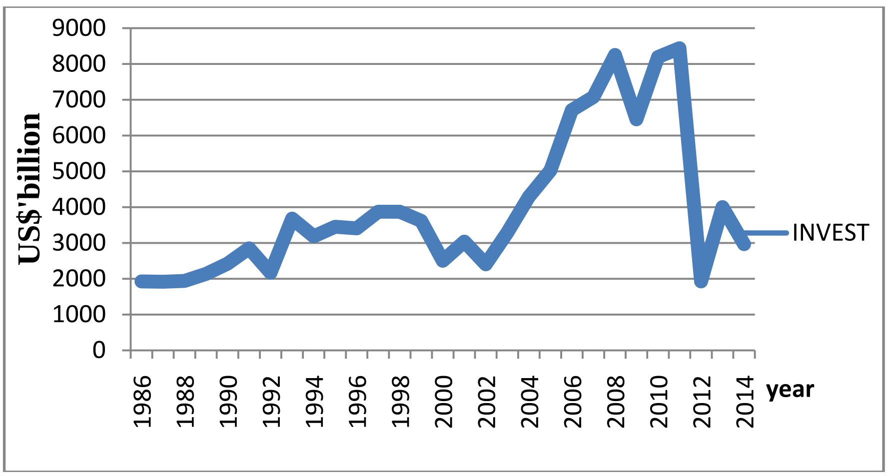


Figure 3 : Investment (US$'billion)

b) Descriptive Statistics Results

Table 1 below presents the results of the time series properties of the variables included in the model. The descriptive statistics was carried out between exchange rate volatility, investment and growth in Nigeria (1986-2014).

Table 1

	EXR	GDP	INFR	INT	INVEST
Mean	33.34287	12636.84	21.23017	12.60615	3965.474
Median	7.461668	6713.575	12.16854	12.59	3408.54
Maximum	291.8318	42396.77	76.75887	23.99	8439.51
Minimum	0.11754	134.6033	0.223606	4.704871	1916.04
Std. Dev.	68.35224	14319.1	19.95911	5.339686	2035.76
Skewness	3.091287	1.008109	1.490246	0.57736	1.078553
Kurtosis	11.3787	2.583133	3.935269	2.512348	2.925836
Jarque-Bera	131.0157	5.12202	11.791	1.898511	5.629148
Probability	0	0.077227	0.002752	0.387029	0.05993
Sum	966.9433	366468.3	615.6749	365.5784	114998.7
Sum Sq. Dev.	130816.8	5.74E+09	11154.25	798.343	1.16E+08
Observations	29	29	29	29	29

Source: Author's computation, 2015.

c) Unit Root Test Results

This pre-test was carried out before estimating the long-run relationship between exchange rate volatility, investment and growth in Nigeria (1986-2014).

Table 2 : ADF Unit Root Test Results (Trend and Intercept)

Variables	ADF	Critical	Level of Order	of
	Statistics	Values	Significance	Integration
EXR	-8.4651	-4.3393	1%	I (1)
GDP	-4.6099	-4.3393	1%	I (1)
INFR	-4.4641	-4.3943	1%	I (1)
INT	-4.52553	-4.3561 1%	I (1)	
INVEST	-6.9921	-4.3393	1%	I (1)

Source: Author's Computation, 2015.

The Augmented Dickey Fuller (ADF) unit-root test results presented in table 2 indicate that exchange rate (EXR), gross domestic product (GDP), inflation (INFR), interest rate (INT) and investment (INVEST) are stationary at first difference. We then applied the Johansen-Juselius (1990) co-integration technique to determine whether there is at least one linear combination of these variables that is I(0).

d) Co-integration

Johansen (1990) approach is use to find out the existence or inexistence of a long-run relationship among the variables employed for this study in other to avoid biased results. The Johansen co-integration test for (EXR), (GDP), (INFR), (INT) and (INVEST) are presented in the table below.

Hp: rank = p (no deterministic trend in the data)

Hr: rank r < p (co-integration relations)

Series: EXR GDP INFR INT INVEST

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistics		Max-Eigen Statistics	
		Likelihood Ratio	5% Sig. lev.	Likelihood Ratio	0.05 Crit. Val.
None	0.795271	97.28870*	69.81889	41.23778*	33.87687
At most 1	0.760883	56.05092*	47.85613	37.20089*	27.58434
At most 2	0.348426	18.85003	29.79707	11.13748	21.13162
At most 3	0.254026	7.712555	15.49471	7.619675	14.26460
At most 4	0.003566	0.092880	3.841466	0.092880	0.7605

** denotes rejection of the hypothesis at 5% significance level. Likelihood ratio test of both Trace and Max-Eigen indicates 2 co-integrating equation(s)*

Source: Author's computation (2015).

The above co-integration result tests for long run relationship between the dependent variable and the independent variables (EXR), (GDP), (INFR), (INT) and (INVEST). For rank (0), since the trace statistics (0.795271) is more than 5% critical value (69.81889), we reject the null hypothesis (there is no co-integration among variables). Otherwise, accept the alternate hypothesis indicating that there is a long run relationship among the variables.

e) Granger Causality Test

Having established that there is a long-run relationship among the variables, the objective of this section is to determine the direction of causality between the dependent variable (EXR) and the independent variables (GDP, INF, INT, INVEST) in Nigeria for the period of 1986 to 2014. The Pair-wise Granger Causality test result is presented in the Table 5 below.

Table 5 : Pair-wise Granger Causality Test Result

Null Hypothesis	Lag	F-Statistic	Probability	Remarks
GDP does not Granger Cause EXR	2	1.29562	0.2938	Accept
EXR does not Granger Cause GDP	2	0.41943	0.6626	Accept
INFR does not Granger Cause EXR	2	0.08482	0.9190	Accept
EXR does not Granger Cause INFR	2	2.23632	0.1306	Accept
INT does not Granger Cause EXR	2	0.02513	0.9752	Accept
EXR does not Granger Cause INT	2	0.17139	0.8436	Accept
INVEST does not Granger Cause EXR	2	0.19013	0.8282	Accept
EXR does not Granger Cause INVEST	2	0.52496	0.5988	Accept
INFR does not Granger Cause GDP	2	0.07808	0.5988	Accept
GDP does not Granger Cause INFR	2	1.72511	0.2014	Accept
INT does not Granger Cause GDP	2	0.03623	0.9645	Accept
GDP does not Granger Cause INT	2	1.71727	0.2028	Accept
INVEST does not Granger Cause GDP	2	6.81810	0.0050	Reject
GDP does not Granger Cause INVEST	2	1.29693	0.2935	Accept
INT does not Granger Cause INFR	2	6.71784	0.0053	Reject
INFR does not Granger Cause INT	2	2.71481	0.0884	Reject
INVEST does not Granger Cause INFR	2	1.23826	0.3093	Accept
INFR does not Granger Cause INVEST	2	0.01137	0.9887	Accept
INVEST does not Granger Cause INT	2	1.55009	0.2345	Accept
INT does not Granger Cause INVEST	2	0.56282	0.5776	Accept

Source: Author's computation, 2015.

The table above shows the causal relationship between exchange rate, investment, interest rate, inflation and growth in Nigeria between 1986 to 2014. The table revealed that GDP and EXR, INFR and EXR, INT and EXR, INVEST and EXR, INF and GDP, INT and GDP, INVEST and INF, INVEST and INT has no causality at 5% significance level.

There is unidirectional causality between INVEST and GDP While INT and INF has bi-directional relationship at Lag 2 and 5% or significance level.

f) Vector Error Correction Estimates Result

The formulated and estimated vector error correction model (VECM) using an optimal lag structure of two is shown below to examine the dynamic effects of exchange rate volatility on investment and growth in Nigeria from 1986 to 2014.

Table 6 : Estimated VECM Results for the Analysis of Exchange rate volatility on investment and growth

Endogenous variable: **EXR _GDP _INFR _INT _INVEST**					
Econometric Method: **VECM Estimate**					
Sample: **1986-2014**					
Equation	D(EXR)	D(GDP)	D(INFR)	D(INT)	D(INVEST)
ECM	-1.383746	-5.879700	0.290144	-0.000359	-23.24526
	(0.54922)	(17.1828)	(0.10537)	(0.03021)	(11.7367)
	[-2.51946]	[-0.34219]	[2.75369]	[-0.01188]	[-1.98057]
D(EXR(-1))	0.322968	8.796626	-0.160456	-0.005085	13.17914
	(0.43047)	(13.4675)	(0.08258)	(0.02368)	(9.19896)
	[0.75027]	[0.65317]	[-1.94296]	[-0.21472]	[1.43268]

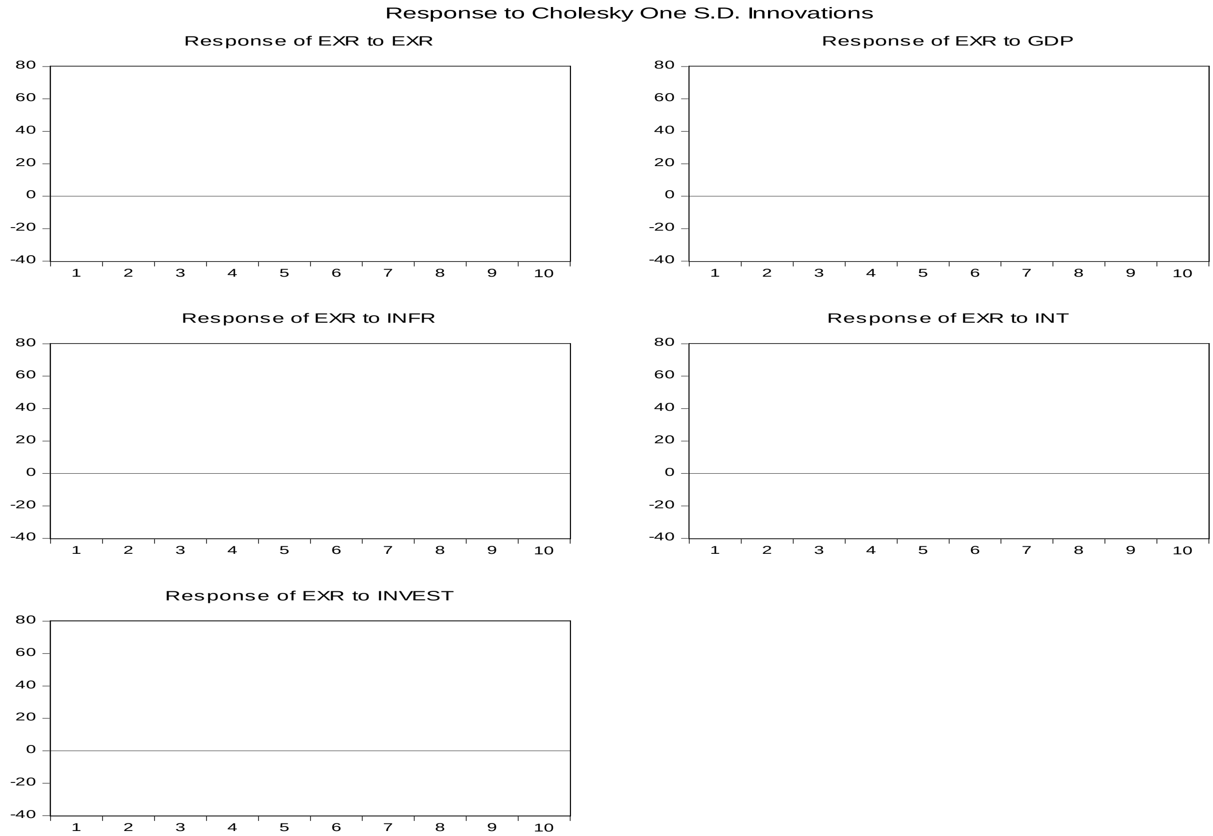
D(EXR(-2))	0.257668	3.262722	-0.063176	-0.020610	7.604156
	(0.26982)	(8.44135)	(0.05176)	(0.01484)	(5.76584)
	[0.95498]	[0.38652]	[-1.22050]	[-1.38856]	[1.31883]
D(GDP(-1))	-0.002614	0.257383	-1.94E-06	-2.31E-05	0.102106
	(0.00752)	(0.23525)	(0.00144)	(0.00041)	(0.16069)
	[-0.34757]	[1.09409]	[-0.00135]	[-0.05573]	[0.63544]
D(GDP(-2))	-0.001446	0.386496	0.001041	3.98E-06	-0.404125
	(0.00735)	(0.23010)	(0.00141)	(0.00040)	(0.15717)
	[-0.19658]	[1.67966]	[0.73801]	[0.00984]	[-2.57124]
D(INFR(-1))	0.380760	-9.943477	0.126762	0.072811	-10.84402
	(0.76110)	(23.8116)	(0.14601)	(0.04187)	(16.2645)
	[0.50027]	[-0.41759]	[0.86815]	[1.73901]	[-0.66673]
D(INFR(-2))	-0.865093	25.63898	-0.521405	-0.047959	13.89294
	(0.78024)	(24.4103)	(0.14969)	(0.04292)	(16.6734)
	[-1.10875]	[1.05033]	[-3.48335]	[-1.11736]	[0.83324]
D(INT(-1))	8.389574	-41.44684	0.369651	0.048553	60.28723
	(4.98301)	(155.896)	(0.95596)	(0.27412)	(106.485)
	[1.68364]	[-0.26586]	[0.38668]	[0.17712]	[0.56616]
D(INT(-2))	-1.732057	178.1472	-0.132236	-0.313833	177.1733
	(4.44637)	(139.107)	(0.85301)	(0.24460)	(95.0168)
	[-0.38954]	[1.28065]	[-0.15502]	[-1.28305]	[1.86465]
D(INVEST(-1))	-0.006871	-0.170825	0.004320	0.000164	-0.602886
	(0.00982)	(0.30718)	(0.00188)	(0.00054)	(0.20982)
	[-0.69976]	[-0.55610]	[2.29366]	[0.30365]	[-2.87335]
D(INVEST(-2))	-0.012772	0.523666	0.002665	-0.000312	-0.123608
	(0.01047)	(0.32746)	(0.00201)	(0.00058)	(0.22367)
	[-1.22021]	[1.59916]	[1.32726]	[-0.54207]	[-0.55263]
C	12.15895	621.3444	-4.560084	-0.477976	673.0130
	(18.4536)	(577.331)	(3.54022)	(1.01515)	(394.345)
	[0.65889]	[1.07624]	[-1.28808]	[-0.47084]	[1.70666]
R-squared	0.632117	0.472427	0.661631	0.509225	0.611142
Adj. R-squared	0.343065	0.057905	0.395769	0.123616	0.305610
F-statistic	2.186868	1.139692	2.488629	1.320573	2.000257
Log likelihood	-136.7861	-226.3082	-93.85828	-61.38034	-216.3972
Akaike AIC	11.44508	18.33140	8.142944	5.644641	17.56901

Source: Authors' computation (2015).

It has been pointed out in the literature that individual coefficients from the error-correction model are hard to interpret in the case of vector-auto-regressive model. Consequently, the dynamic properties of the model are analyzed by examining the impulse response functions and the variance decompositions.

g) Impulse Responses Analysis

The impulse response result allow us to see the shock from the impulse sector which is the exchange rate in this study case and the response sector include investment, and gross domestic product.



Impulse Response plot of exchange rate movement on investment and growth shocks.

Figure I below presents the contemporaneous response of exchange rate to Cholesky one squares variances shocks on investment and growth performance. As shocks in exchange rate (EXR) arise, the response of gross domestic product (GDP) was negative .This is similar to the response of exchange rate (EXR) to investment (INVEST). Contrary, gross domestic product (GDP) and investment (INVEST) react negatively.

h) Variance Decomposition

This section presents the variance decomposition, which seperates the variation in an endogenous variable into the component shocks of the VEC model. The table7 below present the variance decomposition of exchange rate to innovation shocks from investment, interest rate, inflation and growth. In the second column, the labelled "S.E." contains the forecast error of the variable at a given forecast horizon. The source of this forecast error is the variation in the current and future values of the innovations to each endogenous variable in the VECM.. The other columns for each of variables give the percentage of the forecast variance due to each innovation, with each row adding up to 100.

Table 7 : Variance Decomposition Analysis of Exchange rate volatility on Investment and Growth

Period	S.E.	EXR	GDP	INFR	INT	INVEST
1	63.53453	100.0000	0.000000	0.000000	0.000000	0.000000
2	68.11116	87.01636	1.439582	8.704769	2.833542	0.005744
3	74.33258	74.75622	1.292649	7.558204	16.36513	0.027795
4	78.78545	66.56027	1.168008	7.070064	24.79396	0.407697
5	86.02979	57.58950	1.240587	8.290699	32.50966	0.369554
6	91.13239	51.38730	2.520283	12.01408	33.47854	0.599798
7	93.99140	48.84268	2.604488	12.71083	34.99580	0.846201
8	97.84740	45.31313	4.354474	12.15743	37.39347	0.781505
9	102.0088	41.90845	5.637120	12.49281	39.20906	0.752558
10	106.0786	39.00045	6.351065	12.74532	41.19321	0.709953

source: Author's computation,2015.

The table above present the variation in EXR, GDP, INFR, INT and INVEST due to the shocks in decomposed into related policy instruments. The results of the percentage of exchange rate volatility accounted by the considered policy instrument shocks are presented in Table 7.1

Table 7.1 : Percentage of exchange rate, GDP, INFR, INT and INVEST Variation due to Shocks

Overall % share of EXR, GDP, INFR, INT and INVEST shocks				
Exchange rate shocks	Growth shocks	Inflation shocks	Interest rate shocks	Investment shocks
61.24%	2.66%	9.37%	26.28%	0.45%

Source : Authors' computation (2015).

The table revealed that shocks within itself (i.e exchange rate shocks), growth shocks, inflation shocks, interest rate shocks and investment shocks accounted for 61.24%, 2.66%, 9.37%, 26.28% and 0.45% of the total variation in exchange rate volatility in Nigeria respectively. It indicates that Investment is the least among various variable in Nigeria between 1986 to 2014.

VI. Conclusion and Recommendations

This paper examines the relationship between exchange rate, its volatility on investment and growth both theoretically and empirically from 1986 to 2014 in Nigeria. Exchange rate has poorly been managed over time and the time is long overdue to salvage the situation from getting worse. The theoretical issue on exchange rate was discussed and empirical finding were done to know the past findings on authors work that have done research relating to exchange rate volatility. The model adopted for this research work is vector autoregressive model (VAR).The Augmented Dickey Fuller (ADF) test was carried out to test for unit roots for the variables involved. Descriptive statistics was used to understand the data; trend analysis was used to know the trend and pattern of exchange rate volatility on investment and growth. Johansen co-integration test was used to determine whether there is long-run relationship among the variables and the results reveal the presence of two co-integration equations which indicate the existence of long run relationship among the five variables. Granger causality was used to know the causal effect among the variables, impulse response econometric estimators was used to known the impulse responses among the variables, the vector error correction method (VECM) was used to known whether there is any effect and the variance decomposition was also used to know the percentage of shocks in the variable .

Conclusively the volatility in exchange rate has a negative influence on investment and gross domestic product (GDP) which proxed growth and exchange rate volatility has significant influence with inflation and interest rate. The empirical findings are in conformity with Diallo (2009) and Bleaney & Greenaway (2010) results findings.

The general findings in this study have necessitated some policy directions which may be useful recommendations for policy authorities. Since the role of exchange rate volatility in investment indicates slight negative effect, it is appropriate for the authorities to develop sound exchange rate management in the country. The Central Bank should use the allocations and disbursement of foreign currencies as well as the naira to regulate the vacillations in exchange rate over time. Proper effective management of economic and noneconomic factors that will triggers exchange rate volatility.

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Factors Affecting Women's Effectiveness in use of Micro-finance and Microcredit Services; Jimma Zone, Southwest Ethiopia

By Yilkal Wassie Ayen
Jimma University, Ethiopia

Abstract- This study has focused particularly on assessing the loan repayment performance of female headed households on Oromiya Credit and Saving Share Company (OCSSCO) of Jimma Zone Ethiopia. Primary data were collected from 205 female headed households in the study area. With the help of Logit model the study found that family size of the household, health status of the respondent, loan diversion, time of loan application and distance from credit source variables are statistically significant and negatively affect the loan repayment performance of borrowers. While, the age of the borrower, education level of the respondent, experience of the borrower, celebrating of social ceremony, monthly expenditure, application of machinery, installment period and loan seize variables are statistically insignificant in affecting the loan repayment performance of borrowers however their sign was positive.

Keywords: female headed households, loan repayment, logit model.

GJMBR - B Classification : *JEL Code: P49*

FACTORSAFFECTINGWOMENSEFFECTIVENESSINUSEOFMICROFINANCEANDMICROCREDITSERVICESJIMMAZONESOUTHWESTETHIOPIA

Strictly as per the compliance and regulations of:

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Keywords: female headed households, loan repayment, logit model.

I. Introduction

The terms microcredit and microfinance are often used interchangeably, it is important to recognize the distinction between the two. Microcredit refers to the act of providing the loan.Microfinance, on the other hand, is the act of providing these same borrowers with financial services, such as saving institutions and insurance policies. In short, microfinance encompasses the field of microcredit (Sengupta*et.al* 2008).

Microfinance is the supply of loans, savings, money transfers, insurance, and other financialservices to low-income people. Microfinance institutions (MFIs) encompass a wide range ofproviders that vary in legal structure, mission, and methodology offer these financial services toclients who do not have access to mainstream banks or other formal financial service providers(Gutu, 2014).However, microfinance is defined as the provision of financial services to low-income clients, including consumers and the self- employed, who traditionally lack access to banking and related services (Gonzalez-Vega, 2008). Microfinance is a place for the poor and near poor clients to get access to a high quality financial service, which include not just credit but also savings, insurance and fund transfer.

Microcredit or known as micro lending is defined as an extremely small loan given to poor people to help them become self-employed (Nawai and Shariff, 2010). Microcredit was given to the underprivileged individuals for income-generating activities that will improve the borrowers' living standards. The loans characteristics are, too small, short-term credit (a year or less), no collateral required, weekly repayment, poor borrower and mostly women who are not qualified for a conventional bank loan. Usually the loan pays high interest rates because of the high cost in running microcredit program. Microcredit is also used as the extension of very small loans to those who are in poverty that designed to spur entrepreneurship and help them out from poverty group.

Beginning in the mid-seventies, savings and credit institutions started extending small loans togroups of poor women in the villages in order to empower them to invest in micro levelbusinesses. This form of micro-enterprise credit is based on solidarity based group lending whereevery group member is tasked to ensure the repayment of all members (Gutu, 2014).Regarding delivery of financial service, access to women's credit was very limited in Ethiopia. Because of this limited access, the majority of the poor gets financial services from informal sources; like moneylenders, Iqub[1], Iddr[2], merchants, friends and relatives etc. The formal financial institutions have not been interested in delivering credit to the poor because of collateral requirements (Abafita. 2003).

Like in other areas of the world, peoples in Ethiopia are living under poverty. Financial institutions in general and microfinance institutions in particular plays crucial role for the development process ofEthiopia in general and Jimma zone of Oromia in particular. However, no study has been under taken in Jimma zone regarding women's financial services and effectiveness of lending and its impact on repayment performance in particular.

In recent years, the informal and semi-formal lending institutions (such as Iqub, Iddir, Money lenders e.t.c) are becoming the dominant and important source of finance for poor households specially women in

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Ethiopia. Thus, this study has undertake to analyze the extent to which women credit service functions and how default and non-default rates are associated with different personal and socio-economic characteristics of poor women in Jimma Zone, southwestern Ethiopia.

Making women the beneficiaries of credit schemes is a targeting technique to supplement subsistence level of agricultural production. Micro-finance interventions may lead to the empowerment of women by increasing their incomes and their control over that income, enhancing their knowledge and skills in production and trade, and increasing their participation in household decision-making. As a result, social attitudes and perceptions may change, and women's status in the household and community may be enhanced (Kabeer, 1996).

The active participation of women in agriculture has called for the current paradigm of rural economic development via women empowerment. Nweze (1995) observed that rural women: (i) are too poor to save, (ii) lack ability to organize financial self-help activities and (iii) need cheap credit to expand production and income in their farms and non-farm activities. Nwajiuba (1999) accentuates the centrality of credit, especially for women farmers to increase their investment in the absence of adequate savings. Credit is a critical input because it can be used to overcome other obstacles, such as lack of labor. However, the women farmers are perpetually marginalized in the institutionalized credit programmers. Hence, the micro-credits of the rural women farmers must be satisfied largely outside the organized financial markets such as indigenous self help group for the purpose of pooling savings and credit mobilization. Micro-credit is the ultimate economic vehicle, through which poor- women farmers can be empowered economically to overcome poverty.

Many development programs have been extending reasonable amount of credits to rural women since. However, the loan repayment performance of the beneficiaries was found to be verylow. Moreover, factors contributing to the poor loan repayment performance of rural women arenot yet studied. To design appropriate lending strategies and procedures, information onrelative importance of the factors, which affect rural women's loan repayment performance, isnecessary. Hence, this study carried out to answer the following questions: what are themajor socio-economic and institutional factors that affect loan repayment performance of ruralwomen in the study area? What are the sources of credit in the study area? What are the mostimportant factors affecting loan repayment performance of rural women around Jimma?

The general the objective of this study was to investigate the effectiveness of women borrowers to repay their loan back. Specifically; assess the loan repayment performance of women borrowers; identify socio-economic and institutional factors affecting women loan repayment performance; investigate the main source of finance in the area; and provide the mechanisms of improving the effectiveness of women borrowers.

II. Empirical Literature

Although, women are not explicitly excluded from the credit services, they have received virtually no credit from the banks. Several factors are cited by ways of explanation. First, credit is usually administered only to members of farmers' clubs, and women have felt uncomfortable about joining such groups for socio-cultural reasons. In addition, membership in a farmers' club is often at the recommendation of the agricultural extension agents whose contacts are primarily with men. Secondly, although no collateral is required, the applicant for a loan must be seen to be creditworthy, and because women can seldom claim ownership of anything, they are less likely than men to be viewed favorably for credit. Thirdly, the banks cite the small size of the women's fields in order to refuse them credit. In order to get a loan, a woman would have to increase the size of her field up to five or six times its original dimensions, as most banks consider any field under four hectares as unprofitable. Furthermore, lending institutions usually demand a financial guarantee for any loan and only farmers' organizations, of which women are rarely members, are able to supply such guarantees.

Berhanu (2005) studied on the determinants of loan repayment performance of smallholder farmers in North Gondar, Ethiopia. In order to analyze the factors that affect loan repayment, he employed the Tobit model. Land holding size of the family, agro-ecology of the area, total livestock holding, number of years of experience, number of contacts, sources of credit and income from off-farm activities are found to be variables that significantly affect loan repayment performance in the area. The remaining variables (family size, distance between main road and household residence, purpose of borrowing, loan amount and expenditure for social festivals) were found to have insignificant effect on loan repayment performance of smallholder farmers.

Abafita (2003) analyzed the microfinance repayment performance of Oromia credit and saving institution in Kuyu, Ethiopia. According to his finding; sex, loan size and number of dependants are negatively related to loan repayment. On the other hand age was found to be positive, while age squared turned to be negative. Income from activities financed by loan, repayment period suitability and loan supervision are positively and significantly related to loan repayment performance. Moreover, loan diversion is significant and negatively related to loan repayment rate. The negative sign implies that the use of diverted funds for non-income generating purposes.

Assefa (2002) employed a Logit model to estimate the effects of hypothesized explanatory variables on the repayment performance of rural women credit beneficiaries in Dire Dewa, Ethiopia. Out of the twelve variables hypothesized to influence the loan repayment performance of borrowers, six variables were found to be statistically significant. Some of these variables are farm size, annual farm revenue, celebration of social ceremonies, loan diversion, group effect and location of borrowers from lending institution.

Abreham (2002) studied on the loan repayment and its determinants in small-scale enterprise financing in Ethiopia around Zeway area, Ethiopia. He is found out other sources of income, education, and work experience related economic activities before the loan are enhancing loan repayment. While extended loan repayment period is influence the repayment performance negatively. AbsantoandAikaruwa (2013) examine the contribution of credit rationing in loan repayment performance. A case study design was adopted in which Victoria Saving and Credit Cooperative Society (SACCOS), found out that among the factors that were used for credit rationing age influenced loan repayment performance.

Reta (2011) conducted a research with the objective of analyzing and identifying factors that influence the loan repayment performance of the beneficiaries of Addis Credit and Saving Institutions (AdCSI). Age and five business types (baltinaandpetty market, kiosk and shop, services providing, weaving and tailoring and urban agriculture) were important in influencing loan repayment performance of the borrower. In addition, sex and business experience of the respondents were found to be significant determinants of loan repayment rate.

Belay (2002) in Eastern Ethiopia, useda binary Logit model to analyze factors influencing loan repayment performance of rural women. A total of twelve explanatory variables were included in the empirical model and out of these, six were found to be statistically significant. Location of borrowers from lending institution, loan diversion, annual farm revenue and celebration of social ceremonies were highly important in influencing loan repayment performance. The other critical variables include initial credit group formation and farm size.

Ughomeh*et.al* (2008) investigated the determinants of loan repayment performance amongwomen self-help groups in Bayelsa State, Nigeria. The study revealed that credit was available for agriculturalproduction, processing and petty trading among women farmers. Loan repayment percentage was determined to be 83.73%while percentage default was 17.27%. The estimated regression model indicatedthat women as household heads, interest rate and household size, negatively and significantly affected the loan repayment performance of womenfarmers while price stability of farm proceeds and commitment to self helpgroups, positively and significantly affected the loan repayment of womenfarmers in self help groups in the area.

III. Methodology

a) *Data Source, the Study Area and Sampling Technique*

For this study, primary data was collected from sample women borrowers who are benefited from microfinance service during 2013/14. Information is obtained from women's socio-economic characteristics like family resource level, response to loan repayment, experience in credit uses, access to extension services, marketing, education status, source of credit, etc., and individual characteristics like age is obtain through questionnaires.

The study area was on Jimma zone, southwestern Ethiopia. Jimam zone is one of Oromia regional state located at 345 km south west of the Addis Ababa. It has a latitude and longitude of $7^{0}40'$N $36^{0}50'$E. In Jimma Zone, 18Woredas are benefiting from Oromia Credit and Saving Share Company. All Woredas were functionally gave loan to the poor clients. These Woredas can be clustered based on environmental and social-economic characteristics. Of which, 6Woredas are undertaking both cash and cereal crops, the other 7Woredas are cereal crop producing with some mixed farming. The rest 5Woredas are mainly relay on cash crop production.

The researchershave used instruments as self-administered questionnaires and semi-structured interviews to collect primary data from the respondents. Eighteen Woredas were considered for this survey.Of which, 270 respondents are interviewed based on simple random sampling method.Eighteen enumerators who have completed grade 12 and know the local language were recruited and undertake the interview after training.

b) *Empirical Model*

Regression which involves yes or no is a dummy dependent variable regression model. Which are applicable in a wide variety of fields and are used extensively in survey or census-type of data (Gujarati, 1995).The dependent variable in this study was dummy variable, which assumes a value of zero or one depending on whether or not the borrowers default.

When one or more of the explanatory variables in a regression model are binary, we can represent them as dummy variables and proceed to analysis. The loan repayment performance is a dependent variable, which is dichotomous taking on two values, one if the borrower is a non-defaulter and zero otherwise. Estimation of this type of relationship requires the use of qualitative response models. In this regard, the non-linear probability models, Logit and Probit are the possible alternatives.

The ordinary least squire regression, when the dependent variable is binary, produces parameter estimates that are inefficient. Consequently, hypothesis testing and construction of confidence interval become inaccurate and misleading. To alleviate these problems and produce relevant empirical outcomes, the most widely used qualitative response models are the Logit and Probit models.

This study is intended to analyze which and how much the hypothesized regression will relate to the loan repayment performance of women. As already noted, the dependent variable is a dummy dependent variable, which took a value of zero or one depending on whether or not a borrower defaulted. However, the independent variable isboth types that are continuous and categorical.

In the analysis of many studies involving qualitative choices, usually a choice has to be made between Logit and Probit models. According to Amemiya (1981), the statistical similarities between Logit and Probit models make the choice between them difficult. However, Maddala (1983) and Kmenta (1986) reported that many authors tend to agree in that the logistic and cumulative normal functions are very close in the mid-range, but the logistic function has slightly heavier tails than the cumulative normal functions. Pindyck and Rubinfeld (1981) illustrated that the logistic and Probit formulations are quite comparable.

Loan repayment is a dependent variable, while different socio-economic and lender related factors considered as independent variables. In this case the value of this dependent variable is 0 and 1, which stands for 1 if the borrower is a non-defaulter and 0 if the borrower is defaulter. Therefore, loan repayment treated as dichotomous dependent variable. Loan repayment is, therefore, a non continuous dependent variable that does not satisfy the key assumptions in the linear regression analysis. When the dependent variable to be modeled is limited in its range, using ordinary least squares (OLS) may result in biased and inconsistent parameter estimates. To examine the factors affecting the loan repayment, discrete choice model should be used. Thus, the most widely used and appropriate qualitative response models are the Logit and Probit models (Verbeek, 2008).

Assume that there exists a latent (unobserved) variable such that:

$$y_i^* = \beta x_i + \varepsilon_i$$

$$yi = \begin{Bmatrix} 1 \; if y_i^* > 0 \\ 0 \; if y_i^* \leq 0 \end{Bmatrix}$$

Where:

y_i^* = a vector of the latent variable that is not observed for values less than zero and greater than one,

yi = the observed variable, representing the proportion of loan repayment,

β = the unknown parameters that reflecting the impact of change in variable X,

xi = explanatory variables that determine the dependent variable,

ε_i = error terms that is distributed normally with mean 0 and variance σ2,

i = 1, 2, 3….n, represents the number of observations.

Hosmer and Lemeshew (1989) pointed out that a logistic distribution (Logit) has got advantage over the others in the analysis of dichotomous outcome variable in that it is extremely flexible and easily used model from mathematical point of view and results in a meaningful interpretation. Hence, the logistic model is selected for this study.

Therefore, the cumulative logistic probability model is econometrically specified as follows:

$$Pi = F(Zi) = F(\alpha + \sum B_i X_i) = \frac{1}{1+e^{-Zi}} \quad [1]$$

Where, Pi is the probability that an individual will be defaults or does not default given Xi;e denotes the base of natural logarithms, which is approximately equal to 2.718;Xi represents the i^{th}explanatory variables; andα andβ_ι are parameters to be estimated.

The logistic model should be written in terms of the odds and log of odds,

which enables one to understand the interpretation of the coefficients. The odds ratio implies the ratio of the probability (Pi) that an individual would choose an alternative to the probability (1-Pi) that he/she would not choose it.

Therefore,

$$\left(\frac{Pi}{1-Pi}\right) = \left(\frac{1+e^{Zi}}{1+e^{-Zi}}\right) = e^{Zi} \quad [2]$$

Or,

$$\left(\frac{Pi}{1-Pi}\right) = \left(\frac{1+e^{Zi}}{1+e^{-Zi}}\right) = e^{(\alpha+\sum BiXi)} \quad [3]$$

If the disturbance term (ui) is taken into account, the Logit model becomes

$$Z_i = \alpha + \sum_{i=1}^{m} B_i X_i + u_i \quad [4]$$

- X1= age of women respondent
- X2= extension agents visitation
- X3= experience in credit use of women respondents
- X4= total income of women per year
- X5= interest rate of received for loan
- X6= time laps between loan application and disbursement
- D1= loan diversion
- D2= social ceremony

- D3= health problem
- X7= total application costs
- X8= loan size and adequacy
- X9= distance from creditors
- X10= number of installments for which the loan is due for repayment.
- X11= health care expenditure in the family
- X12= family size
- X13= number of social ceremonies per year the respondent celebrates
- X15= amount of birr saved per year

IV. Descriptive and Empirical Results

This part is tried to discuss and examine the factors affecting loan repayment performance of female headed households in Jimma Zone south western part of Ethiopia. Descriptive analysis and empirical result by using Logitmodelare well discussed.The empirical part summaries the significant variable found and the marginal effect as well (see Appendix I).

Table 2 : Descriptive statistics of continuous variables

Variable	Observation	Mean	Std. Dev	Min	Max
Age	205	35.02927	8.292988	18	60
Educ	205	2.941463	3.157079	0	15
Expr	205	2.853659	1.461281	0	8
Famz	205	4.360976	2.127421	1	12
Income	205	26705.34	36719.06	900	100000
Expd	205	101.1707	200.7226	0	2000
Time	205	4.531707	3.419268	4	21
Dist1	205	59.56341	44.18095	1	240
Dist2	205	147.2585	75.7218	3	480
Instal	205	5.62439	4.309177	3	12
Loan	205	4107.439	2440.148	550	25000

Source: Own computation

In this survey study 205 respondents were interviewed based on structured questionnaire.Some respondents are to the maximum 60 years old whereas to the minimum 18 years old young borrowers were benefited from these microfinance institutions. However, illiterate women were benefited, though some Degree completed female beneficiaries were borrowed. Some of the borrowers are experienced and used credit up to eight times. However, some other borrows are lack this experience of borrowing (first time borrowers).

Family size of the households is one of the variables identified to affect the loan repayment performance of borrowers. Large family size is hypothesized to increase the consumption expenditure of the household and hence the reason for loan diversion. Finally, borrowers are unable to repay their loan back at the due date. In this study, the maximum family size of borrowers'are12, however single borrower benefited without family. In addition the annual income of borrower is another variable that affect the loan repayment performance. Annually borrowers earn 900 Ethiopian Birr, however some other rich borrowers earn 100000 Birr. Furthermore, the monthly consumption expenditure of households around the study area is up to 2000 Birr.

In some literatures, the gap between loan application and the time of disbursement is one reason for ineffectiveness arises by borrowers to use the required loan at the right time and way. Few borrowers in this study get loan immediately whereas some other borrowers waited up to 21 days to collect the loan. Besides this, distance from credit source is one factor thataffects the loan repayment performance of borrowers. Remote borrowers take 240 munities to reach to their credit source; however some other borrowers are near by the credit sources. Distance from gridding meal is also considered to be the factor that affects the loan repayment performance of female headed borrowers. Females are most affected by gender sensitive issues. They are responsible forfetching water from the river around rural area and to make tasks like gridding meal. Some female headed household may take 480 munities to arrive at their gridding meal services.

Furthermore, installment period of borrowers can be the reason for the poor performance of borrowers to repay backs their loan at the due date. Customers are supposed to pay their loan back in three installment periods. However some others are by 12 installments. Last but not least, adequacy of loan also another reason for the relative performance of borrowers to pay back the borrowed money.

Prior to running the Logit regression model to estimate the result, the explanatory variables were checked for the existence of multicollinearity problem. Variance inflation factor (VIF) was calculated to check

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the problem of multicollinearity among all explanatory variables and are significantly far below 10(no serious problem of multicollinearity). *STATA 11* version software was used to estimate the Logit model and the effect of socio-economic variables on the loan repayment performance of female headed households.

Table 3 : Logit regression results

Logistic regression				Number of obs =		204
				LR chi2(16) =		33.28
				Prob> chi2 =		0.0068
Log likelihood = -68.545965				Pseudo R2 =		0.1953
Pback	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Age	.0353927	.0331449	1.07	0.286	-.02957	.1003555
Educ	.143629	.0887273	1.62	0.105	-.0302733	.3175314
Expr	.0214224	.1726228	0.12	0.901	-.3169121	.359757
Famz	-2610359	.1328238	-1.97	0.049**	-.5213658	-.0007061
Income	-1.29e-06	8.15e-06	-0.16	0.874	-.0000173	.0000147
Visit	-.3423635	.7007402	-0.49	0.625	-1.715789	1.031062
Cerm	.8343578	.8933848	0.93	0.350	-.9166443	2.58536
Expd	.0016409	.0031462	0.52	0.602	-.0045254	.0078073
Health	-1.275079	.4985709	-2.56	0.011***	-2.25226	-.2978976
Mchi	.0012794	.5498895	0.00	0.998	-1.076484	1.079043
Dive	-1.150317	.6732704	-1.71	0.088 *	-2.469903	.1692688
Time	-.1572343	.0783197	-2.01	0.045**	-.3107381	-.0037304
Dist1	-.0085588	.005172	-1.65	0.098*	-.0186957	.0015781
Dist2	-.0030366	.0031664	-0.96	0.338	-.0092427	.0031695
Instal	.0135395	.1001113	0.14	0.892	-.1826751	.209754
Loan	.0000377	.000112	0.34	0.736	-.0001817	.0002572
_cons	3.508654	1.495382	2.35	0.019	.5777598	6.439549

(*), (**) and (***) means significant at 10%, 5% and 1% respectively

Source: Own computation

Family size: Family size is negative and statistically significant at 1% of significance level on the effectiveness of borrowers. From the Logit regression, it can be concluded that family size can influence the loan repayment performance of female borrowers negatively. Those households with small family size are more likely to perform better than large family size households. Large family size would increase the consumption expenditure of households and hence use their loan to smooth their consumption and would be a reason for loan diversion and default.

Health status of the respondents: Health care expenditure can be another reason for loan default for borrowers. They may use the required money for health care expenditure instead of using for investment, and then at the end of the day they may unable to repay their loan back. Based on this empirical study this variable has negative impact on loan repayment performance at 1% level of significance. Those households visiting a hospital per year are less likely to repay their loan back as compared to others they didn't go to health care services.

Loan diversion: If borrower diverted their loan in to unproductive task than the intended project, then it would have a negative impact. However, if borrowers use the money for the intended projects it would have a positive impact. Thus, it all depends on their performance of the project the loan is diverted to. Therefore the sign of the variable can't be predetermined. However, the Logit result tells as loan diversion has negative and significant impact on the loan repayment performance of borrowers at 10% level of significance. It is obvious that those borrowers used the intended loan for the right project is more likely to pay back their loan at the due date as compared to those borrowers diverted their loan.

Time of loan application: The gap between loan application and disbursement also another crucial variable that affect the loan repayment performances of farmers especially they are relay on seasonal rain feed agriculture. Because ofagricultural production is more of seasonal in developing countries. If the loan is not disbursed at the required date it would be the major obstacle for supplying the necessary input on time. This is not only for the problem of agricultural production, but also for seasonal trading. Thus, this variable has negative effect on loan repayment performance of female headed households in the study area. Those borrowers get fund at the required date can perform better than others waited for the loan for long period. This result is significant at 5% level of significant.

Distance from credit source: Distance is a community-level variable computed as the mean distance from the village to micro finance institution service. The distance is taken approximately as the respondents' replied in this study. This variable had a negative and significant influence on the loan repayment performance of borrowers at significance level of 10%. The effectiveness of borrower is higher when the distance is short. Meaning remote borrowers are more likely unable to repay their loan back as compared to other borrower's settled around the source of credit.

V. Conclusion

The nature of this research is descriptive type and econometric model analysis that incorporates fact finding inquiries and surveys with regard to the loan repayment performance of female headed borrowers. The main objective of this research was to assess and analyze that factors affecting loan repayment performance of female borrowers around Jimma Zone.

With regard to credit default as an effectiveness of loan repayment performance of female headed households for the study; family size of the respondents, health status of the respondents, loan diversion, time of loan application and distance from credit sources variables have a negative and significant impact on the loan repayment performance of female headed households in the study area. Unfortunately, there is no any variable that positively affect the loan repayment performance of female borrowers. However, there are variables like; age of the respondents, education level, experience in credit use, celebrating social ceremony, high monthly expenditure, application of machinery, installment period and loan size are insignificant and positively affecting variable from the Logit model of this study.

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Appendix

Marginal effects

variable	dy/dx	Std. Err.	z	P>z	[95%	C.I.]	X
Age	.0030389	.00286	1.06	0.287	-.00256	.008638	35.0196
Educ	.0123324	.0074	1.67	0.096	-.002179	.026843	2.94118
Expr	.0018394	.01482	0.12	0.901	-.027204	.030883	2.84804
Famz	-.0224133	.01136	-1.97	0.049	-.044688	-.000139	4.36275
Income	-1.11e-07	.00000	-0.16	0.874	-1.5e-06	1.3e-06	26664.7
Visit*	-.0276313	.05305	-0.52	0.602	-.131599	.076336	.730392
Cerm*	.0689127	.07241	0.95	0.341	-.073015	.21084	.421569
Expd .	.0001409	.00026	0.53	0.595	-.000378	.00066	101.667
Health*	-.1237985	.05397	-2.29	0.022	-.229575	-.018022	.406863
Mchi*	.0001098	.0472	0.00	0.998	-.092393	.092613	.29902
Dive*	-.1426551	.10906	-1.31	0.191	-.356406	.071096	.098039
Time	-.0135006	.00627	-2.15	0.031	-.025785	-.001216	4.53922
Dist1	-.0007349	.00047	-1.57	0.117	-.001654	.000185	59.5613
Dist2	-.0002607	.00027	-0.97	0.334	-.000789	.000268	147.392
Instal .	.0011625	.0086	0.14	0.892	-.015692	.018017	5.64216
Loan	3.24e-06	.00001	0.34	0.737	-.000016	.000022	4103.06

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Source: Own computation

Global Journals Inc. (US) Guidelines Handbook 2015

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FELLOW OF ASSOCIATION OF RESEARCH SOCIETY IN BUSINESS (FARSB)

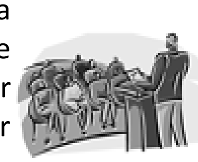
Global Journals Incorporate (USA) is accredited by Open Association of Research Society (OARS), U.S.A and in turn, awards "FARSB" title to individuals. The 'FARSB' title is accorded to a selected professional after the approval of the Editor-in-Chief/Editorial Board Members/Dean.

- The "FARSB" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., FARSB or William Walldroff, M.S., FARSB.

FARSB accrediting is an honor. It authenticates your research activities. After recognition as FARSB, you can add 'FARSB' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, and Visiting Card etc.

The following benefits can be availed by you only for next three years from the date of certification:

FARSB designated members are entitled to avail a 40% discount while publishing their research papers (of a single author) with Global Journals Incorporation (USA), if the same is accepted by Editorial Board/Peer Reviewers. If you are a main author or co-author in case of multiple authors, you will be entitled to avail discount of 10%.



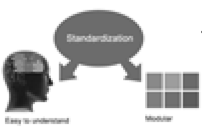
Once FARSB title is accorded, the Fellow is authorized to organize a symposium/seminar/conference on behalf of Global Journal Incorporation (USA).The Fellow can also participate in conference/seminar/symposium organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent.

You may join as member of the Editorial Board of Global Journals Incorporation (USA) after successful completion of three years as Fellow and as Peer Reviewer. In addition, it is also desirable that you should organize seminar/symposium/conference at least once.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The FARSB can go through standards of OARS. You can also play vital role if you have any suggestions so that proper amendment can take place to improve the same for the benefit of entire research community.

As FARSB, you will be given a renowned, secure and free professional email address with 100 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.



The FARSB will be eligible for a free application of standardization of their researches. Standardization of research will be subject to acceptability within stipulated norms as the next step after publishing in a journal. We shall depute a team of specialized research professionals who will render their services for elevating your researches to next higher level, which is worldwide open standardization.

The FARSB member can apply for grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A. Once you are designated as FARSB, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria. After certification of all your credentials by OARS, they will be published on your Fellow Profile link on website https://associationofresearch.org which will be helpful to upgrade the dignity.

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The FARSB is eligible to earn from sales proceeds of his/her researches/reference/review Books or literature, while publishing with Global Journals. The FARSB can decide whether he/she would like to publish his/her research in a closed manner. In this case, whenever readers purchase that individual research paper for reading, maximum 60% of its profit earned as royalty by Global Journals, will be credited to his/her bank account. The entire entitled amount will be credited to his/her bank account exceeding limit of minimum fixed balance. There is no minimum time limit for collection. The FARSC member can decide its price and we can help in making the right decision.

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The ' MARSB ' title is accorded to a selected professional after the approval of the Editor-in-Chief / Editorial Board Members/Dean.

The “MARSB” is a dignified ornament which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., MARSB or William Walldroff, M.S., MARSB.

MARSB accrediting is an honor. It authenticates your research activities. After becoming MARSB, you can add 'MARSB' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, Visiting Card and Name Plate etc.

The following benefitscan be availed by you only for next three years from the date of certification.

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As MARSB, you will be given a renowned, secure and free professional email address with 30 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The MARSB member can apply for approval, grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A.

Once you are designated as MARSB, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria.

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Institutional Fellow of Open Association of Research Society (USA)-OARS (USA)

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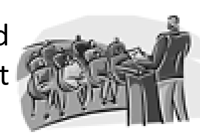
The IFOARS institution is entitled to form a Board comprised of one Chairperson and three to five board members preferably from different streams. The Board will be recognized as "Institutional Board of Open Association of Research Society"-(IBOARS).

The Institute will be entitled to following benefits:

The IBOARS can initially review research papers of their institute and recommend them to publish with respective journal of Global Journals. It can also review the papers of other institutions after obtaining our consent. The second review will be done by peer reviewer of Global Journals Incorporation (USA)
The Board is at liberty to appoint a peer reviewer with the approval of chairperson after consulting us.
The author fees of such paper may be waived off up to 40%.



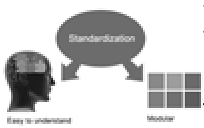
The Global Journals Incorporation (USA) at its discretion can also refer double blind peer reviewed paper at their end to the board for the verification and to get recommendation for final stage of acceptance of publication.

The IBOARS can organize symposium/seminar/conference in their country on behalf of Global Journals Incorporation (USA)-OARS (USA). The terms and conditions can be discussed separately.

The Board can also play vital role by exploring and giving valuable suggestions regarding the Standards of "Open Association of Research Society, U.S.A (OARS)" so that proper amendment can take place for the benefit of entire research community. We shall provide details of particular standard only on receipt of request from the Board.

The board members can also join us as Individual Fellow with 40% discount on total fees applicable to Individual Fellow. They will be entitled to avail all the benefits as declared. Please visit Individual Fellow-sub menu of GlobalJournals.org to have more relevant details.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time. This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.



After nomination of your institution as "Institutional Fellow" and constantly functioning successfully for one year, we can consider giving recognition to your institute to function as Regional/Zonal office on our behalf.

The board can also take up the additional allied activities for betterment after our consultation.

The following entitlements are applicable to individual Fellows:

Open Association of Research Society, U.S.A (OARS) By-laws states that an individual Fellow may use the designations as applicable, or the corresponding initials. The Credentials of individual Fellow and Associate designations signify that the individual has gained knowledge of the fundamental concepts. One is magnanimous and proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice.

Open Association of Research Society (US)/ Global Journals Incorporation (USA), as described in Corporate Statements, are educational, research publishing and professional membership organizations. Achieving our individual Fellow or Associate status is based mainly on meeting stated educational research requirements.

Disbursement of 40% Royalty earned through Global Journals : Researcher = 50%, Peer Reviewer = 37.50%, Institution = 12.50% E.g. Out of 40%, the 20% benefit should be passed on to researcher, 15 % benefit towards remuneration should be given to a reviewer and remaining 5% is to be retained by the institution.

We shall provide print version of 12 issues of any three journals [as per your requirement] out of our 38 journals worth $ 2376 USD.

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- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.

- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10%discount if one is co-author or main author among group of authors.
- The Fellow can organize symposium/seminar/conference on behalf of Global Journals Incorporation (USA) and he/she can also attend the same organized by other institutes on behalf of Global Journals.
- The Fellow can become member of Editorial Board Member after completing 3yrs.
- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

"
- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of “Difference of Opinion [if any]” among the Board members, our decision will be final and binding to everyone. "

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The paper should be in proper format. The format can be downloaded from first page of 'Author Guideline' Menu. The Author is expected to follow the general rules as mentioned in this menu. The paper should be written in MS-Word Format (*.DOC,*.DOCX).

The Author can submit the paper either online or offline. The authors should prefer online submission.Online Submission: There are three ways to submit your paper:

(A) (I) First, register yourself using top right corner of Home page then Login. If you are already registered, then login using your username and password.

(II) Choose corresponding Journal.

(III) Click 'Submit Manuscript'. Fill required information and Upload the paper.

(B) If you are using Internet Explorer, then Direct Submission through Homepage is also available.

(C) If these two are not convenient, and then email the paper directly to dean@globaljournals.org.

Offline Submission: Author can send the typed form of paper by Post. However, online submission should be preferred.

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Page Size: 8.27" X 11'"

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- Font type of all text should be Swis 721 Lt BT.
- Paper Title should be of Font Size 24 with one Column section.
- Author Name in Font Size of 11 with one column as of Title.
- Abstract Font size of 9 Bold, “Abstract” word in Italic Bold.
- Main Text: Font size 10 with justified two columns section
- 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

Before submitting your research paper, one is advised to go through the details as mentioned in following heads. It will be beneficial, while peer reviewer justify your paper for publication.

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1) Substantial contributions to conception and acquisition of data, analysis and interpretation of the findings.

2) Drafting the paper and revising it critically regarding important academic content.

3) Final approval of the version of the paper to be published.

All authors should have been credited according to their appropriate contribution in research activity and preparing paper. Contributors who do not match the criteria as authors may be mentioned under Acknowledgement.

Acknowledgements: Contributors to the research other than authors credited should be mentioned under acknowledgement. The specifications of the source of funding for the research if appropriate can be included. Suppliers of resources may be mentioned along with address.

Appeal of Decision: The Editorial Board's decision on publication of the paper is final and cannot be appealed elsewhere.

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Manuscripts should be uploaded via this online submission page. The online submission is most efficient method for submission of papers, as it enables rapid distribution of manuscripts and consequently speeds up the review procedure. It also enables authors to know the status of their own manuscripts by emailing us. Complete instructions for submitting a paper is available below.

Manuscript submission is a systematic procedure and little preparation is required beyond having all parts of your manuscript in a given format and a computer with an Internet connection and a Web browser. Full help and instructions are provided on-screen. As an author, you will be prompted for login and manuscript details as Field of Paper and then to upload your manuscript file(s) according to the instructions.

To avoid postal delays, all transaction is preferred by e-mail. A finished manuscript submission is confirmed by e-mail immediately and your paper enters the editorial process with no postal delays. When a conclusion is made about the publication of your paper by our Editorial Board, revisions can be submitted online with the same procedure, with an occasion to view and respond to all comments.

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

4. MANUSCRIPT'S CATEGORY

Based on potential and nature, the manuscript can be categorized under the following heads:

Original research paper: Such papers are reports of high-level significant original research work.

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

Research articles: These are handled with small investigation and applications

Research letters: The letters are small and concise comments on previously published matters.

5.STRUCTURE AND FORMAT OF MANUSCRIPT

The recommended size of original research paper is less than seven thousand words, review papers fewer than seven thousands words also.Preparation of research paper or how to write research paper, are major hurdle, while writing manuscript. The research articles and research letters should be fewer than three thousand words, the structure original research paper; sometime review paper should be as follows:

Papers: These are reports of significant research (typically less than 7000 words equivalent, including tables, figures, references), and comprise:

(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.

(f) Results should be presented concisely, by well-designed tables and/or figures; the same data may not be used in both; suitable statistical data should be given. All data must be obtained with attention to numerical detail in the planning stage. As reproduced design has been recognized to be important to experiments for a considerable time, the Editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned un-refereed;

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

(h) Brief Acknowledgements.

(i) References in the proper form.

Authors should very cautiously consider the preparation of papers to ensure that they communicate efficiently. Papers are much more likely to be accepted, if they are cautiously designed and laid out, contain few or no errors, are summarizing, and be conventional to the approach and instructions. They will in addition, be published with much less delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and to make suggestions to improve briefness.

It is vital, that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

Format

Language: The language of publication is UK English. Authors, for whom English is a second language, must have their manuscript efficiently edited by an English-speaking person before submission to make sure that, the English is of high excellence. It is preferable, that manuscripts should be professionally edited.

Standard Usage, Abbreviations, and Units: Spelling and hyphenation should be conventional to The Concise Oxford English Dictionary. Statistics and measurements should at all times be given in figures, e.g. 16 min, except for when the number begins a sentence. When the number does not refer to a unit of measurement it should be spelt in full unless, it is 160 or greater.

Abbreviations supposed to be used carefully. The abbreviated name or expression is supposed to be cited in full at first usage, followed by the conventional abbreviation in parentheses.

Metric SI units are supposed to generally be used excluding where they conflict with current practice or are confusing. For illustration, 1.4 l rather than 1.4 × 10-3 m3, or 4 mm somewhat than 4 × 10-3 m. Chemical formula and solutions must identify the form used, e.g. anhydrous or hydrated, and the concentration must be in clearly defined units. Common species names should be followed by underlines at the first mention. For following use the generic name should be constricted to a single letter, if it is clear.

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Many researchers searching for information online will use search engines such as Google, Yahoo or similar. By optimizing your paper for search engines, you will amplify the chance of someone finding it. This in turn will make it more likely to be viewed and/or cited in a further work. Global Journals Inc. (US) have compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Key Words

A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search:

- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

Acknowledgements: Please make these as concise as possible.

References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

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Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.

Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.

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For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

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Figure Legends: Self-explanatory legends of all figures should be incorporated separately under the heading 'Legends to Figures'. In the full-text online edition of the journal, figure legends may possibly be truncated in abbreviated links to the full screen version. Therefore, the first 100 characters of any legend should notify the reader, about the key aspects of the figure.

6. AFTER ACCEPTANCE

Upon approval of a paper for publication, the manuscript will be forwarded to the dean, who is responsible for the publication of the Global Journals Inc. (US).

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(Free of charge) from the following website:

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Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

8. Use the Internet for help: An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

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.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

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 though 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.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

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

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- 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

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· 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

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- 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:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- 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.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- 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.
- Shape the theory/purpose specifically - do not take a broad view.
- 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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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	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
Methods and Procedures	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
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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