

External Reserves Management and Economic Development in Nigeria (1980-2008)

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Abstract

External reserves which are variously called International Reserves, Foreign Reserve or Foreign Exchange Reserves. In recent years, issues related to the management of external reserves have gained prominence, and reserves management practices have evolved rapidly. Effective management of foreign exchange reserves is one of the major macroeconomic objectives of countries like Nigeria. This is against the background of rapid rise and accumulated challenges currently facing many emerging economics, especially oil producing countries (CBN 2007). This paper examined the management of external reserves and economic development in Nigeria between 1980-2008. The empirical result of the data analysis revealed that there is statistical significant relationship in the management of Nigerian external reserves. Hence, the need for an effective and efficient management of Nigeria's external reserves is imperative and recommended that reserve management should seek to ensure that adequate reserves are available such that risks are controlled in a prudent manner and reasonable earnings are generated over the medium to long term on the funds invested.

Keywords: *External Reserves, Management, relationship, CBN, Macroeconomic variables*

1.0 Introduction

In recent years, issues related to the management of external reserves have gained prominence, and reserves management practices have evolved rapidly. Effective management of foreign exchange reserves is one of the major macroeconomic objectives of countries like Nigeria. This is against the background of rapid rise and accumulated challenges currently facing many emerging economics, especially oil producing countries (CBN 2007).

External reserves are variously called International Reserves, Foreign Reserve or Foreign Exchange Reserves. While there are several definitions of international reserves, the most widely accepted is the one proposed by the IMF in its Balance of Payments Manual, 5th edition. It defined international reserves as consisting of official public sector foreign assets that are readily available to, and controlled by the monetary authorities for direct financing of payment imbalances, and directly regulating the magnitude of such imbalances, through intervention in the exchange markets to affect the currency exchange rate and/or for other purposes (CBN 2007).

The level of external reserve in a country is influenced by external sector developments such as international trade transactions, exchange rate, external debt and other related external obligations. However, when foreign reserves are used for financing domestic foreign exchange needs they could exert pressures on the internal monetary environment. Thus, if a country's trade volume increases, banks and other financial intermediaries may exert increasing pressure on her foreign reserves. This scenario calls for a continuous effort

by a country at effectively managing her foreign reserves to an optimum level that would sustain her numerous external commitments (CBN 1997).

Foreign reserves management is the technique of optimizing a nation's external resources to meet its economic needs. In Nigeria, the Central Bank has the sole responsibility of management of foreign reserves. The components of foreign reserves include monetary gold, reserve position at the International Monetary Fund (IMF), holding of special drawing right (SDRs) and foreign exchange which are convertible currencies of other countries (CBN 1997).

2.0 Review of Related Literatures

Aluko (2007), observed that External reserves has, in recent times, played significant role in the Nigeria economy. It has increased the level of money supply and therefore impact positively on the level of economic activities as more funds became available for investment in productive activities. Employment was in turn generated, output increased and consumption boosted. With their multiplier effects on the economy coupled with the efficient management of the financial resources, standard of living of the people improved considerably. Also, the contribution of the manufacturing sector to Gross Domestic Product (GDP), which has continued to dip, witnessed a boost.

In a related study (Obaseki 2007) noted that the uses of external reserves cannot be over emphasized. Essentially, external obligations have to be settled in foreign exchange. Therefore, the stocks of reserves become important as a source of financing external imbalances. Other uses to which external reserves can be put are to intervene in the foreign exchange market, guide against unforeseen volatility and maintain natural wealth for future generations.

Typically, the purpose of holding reserves is to allow the central bank an additional means to stabilize the issued currencies from shocks. In addition to meeting the transaction needs of countries, reserves are used as a precautionary purpose to provide a cushion to absorb unexpected shocks or a sharp deterioration in their terms of trade or to meet unexpected capital outflows, like the negotiated exit payment of the Paris Club Debt by Nigeria. Reserves are also used to manage the exchange rate through intervention in the foreign exchange market. Thus, the motives for holding adequate level of external reserves can therefore be summarized as the reasons why individuals hold money (CBN 2007).

Sound foreign reserves management practices are important because they can increase a country's overall resilience to shocks as the central bank will have the ability to respond effectively to financial crisis. Sound foreign reserves management can equally support but not substitute for sound macroeconomic management. Similarly, inappropriate economic policies can pose serious risks to the ability to manage foreign reserves. However, the process of foreign reserves management has spanned over the areas of risk management, securitization and the use of derivatives (Anifowose 1997).

External reserves have impacted significantly on the development of Nigeria economy over the years. According to (Ojokwu 2007), Foreign Direct Investment (FDI) into the country increased from \$42.4 million in 1997 to \$540.17 million in 2002 at an exchange of ₦118 to a dollar, while the level of investment increased in 1999 from ₦4.24 billion to ₦63.74 billion in 2002. He added that employment increased from 4,093 in 1999 to 10,885 in 2002, while revenue allocation to States and Local Government Areas grew from ₦156.06 billion in 1999 to ₦44.074 billion at August 2004. The Federal Government has also made significant progress in the war against corruption. All these are indicative of progress economically.

2.1 *Concept of External Reserves*

Prior to the inception of the Central Bank of Nigeria in 1959, the country formed part of the defunct West African Currency Board (WACB). In that period, management of external reserves posed little or no problems to the country because the manner in which the Board operated prevented such problems from arising. Optimal deployment of reserves then was really not an issue since Nigeria's non-sterling earnings were deposited in London in exchange for credit entries in the sterling accounts maintained there (Aizenman 2005).

Subsequently, the 1959 Act which established the Central Bank of Nigeria (CBN) required the Bank to hold external reserves solely in Gold and Sterling. With the amendment in 1962 of this Act, the Bank acquired the mandate to maintain the country's foreign exchange reserves not only in sterling balance but also in non-sterling assets such as gold coin or bullion, bank balances, bills of exchange, government and government-guaranteed securities of countries other than Britain and treasury bills in other countries. The monetary options available to the country widened upon joining the International Monetary Fund (IMF) in 1961 to include many more assets (Yuguda 2003).

The problems of reserve management began during the periods of the First National Development Plan in 1962 to 1966 and the Nigerian Civil War of 1967 to 1970. In these periods, financing the plan and the war consumed a large portion of the country's reserves. Also, the tempo in the foreign trade sector dropped, following the disruption of economic activities in the country. The problems became compounded immediately after the war in the wake of the Federal Government's efforts to reconstruct and reactivate the war ravaged economy which continued to demand immense foreign exchange reserves. Because of the exigencies of this period, the CBN became committed to maintaining an 'adequate' level of external reserves (Olawoyin 2005).

In a related development, (Odozi 2000) noted that in addition to the problem of depleting reserves; Nigeria faced a new scenario with reserve management. Following the admission into the organisation of Petroleum Exporting Countries (OPEC) in 1973 and the oil boom of the era, the problem of reserve management switched from that of 'inadequate' to that of 'excess reserves'. This remained so until 1981 when the country was hit by the global economic recession that led to a consistent decline in her external reserves. In the light of this development, economic stabilisation measures revolving stringent exchange control, which ran from April 1982 to June, 1986 (when accretion to external reserves was low), were introduced. By the end of 1985, it was evident that the use of stringent economic controls was ineffective in restraining external reserves depletion. To this end, exchange and trade controls were discontinued in 1986, following the adoption of market based policy measures, the Structural Adjustment Programme (SAP) in July 1986. However, after more than seven years of liberation, government felt that the overall performance of the economy was unsatisfactory. Hence, in January 1994, some measures of control were re-introduced which saw the CBN as the sole custodian of foreign exchange and together with its designated agents, the avenues for foreign exchange important. Again the trade and exchange policies in 1994 failed to substantially achieve the desired objectives. The guided deregulation introduced in 1995, among other things, abolished the 1962 Exchange Control Act, in a bid to enhance the flow of capital and the reserves position of the country. Other measures aimed at boosting the external reserves included the introduction of an Autonomous Foreign Exchange Market (AFEM) for the purpose of trading in foreign currencies at market determined rates and further liberation of the foreign exchange system in 1997 and the trade and exchange regime in 1998.

The scope of this study covers external reserves management and its effects on economic development in Nigeria between the periods of 1980 – 2009. The study also looked into the problems associated with foreign reserves management as well as its relationship with gross domestic product (GDP). The other area covered is how best external reserves can be prudently managed for the overall benefit of Nigeria. The research was concluded with a theoretical framework adopted for the study.

2.3 Sources of Nigeria External Reserves Inflows

Nigeria's external reserves derive mainly from the proceeds of crude oil production and sales. Nigeria produces approximately 2,000,000 barrels per day of crude oil in joint venture with some international oil companies, notably Shell, Mobil, and Chevron. Out of this, Nigeria sells a predetermined proportion directly, while the joint venture partners sell the rest. The joint venture partners pay Petroleum Profit Tax to the Federal Government through the Federal Board of Inland Revenue (CBN 2007).

The five categories of revenue from crude oil production and sales are:

- i) *Sale of Nigeria's Crude Oil Equity:* The Nigerian National Petroleum Corporation (NNPC) has the responsibility for the sale of Nigeria's crude oil. Receipts from such sales are warehoused into our foreign accounts and constitute part of external reserves.
- ii) *Royalties:* These are funds paid by oil companies to the nation arising from the commercial exploitation of Nigeria's oil resources. The Petroleum Act of 1969 provides a percentage to be paid as loyalty on the chargeable value of the crude oil/petroleum spirit production in a particular period.
- iii) *Petroleum Profit Tax (PPT):* This is the tax paid by oil companies on profit arising from their operations. A tax rate of 85% effective 1st April 1975 was specified by the Petroleum Profits Tax Act.
- iv) *Penalty for Gas Flaring, Rentals, Signature Bonuses:* Foreign exchange is realized from penalties for gas flaring, rental payments from Oil Prospecting License (OPL), conversion to oil mining lease, oil exploration license, and concession block allocation. Also signature bonus (an amount payable at the signing of an agreement for the award of OPL as part of the validity process of oil contract agreement) is a source of foreign exchange.
- v) *Receipt from Gas Sales:* Other sources of foreign exchange inflows include: Withholding Tax, Value Added Tax, Company Income Tax, Education Tax, and Rent/interests received from investments abroad personal home remittances.
- vi) Export products from non oil sources agricultural produce, processed and semi-processed products, etc.

- vii) Grants and other miscellaneous receipts (CBN, 2007). In Nigeria, over 85 percent of foreign exchange reserves is realized from the oil sector.

3.0 Statement of Research Problem

The importance of external reserves to any country cannot be overemphasized. It can be said to be the official public sector foreign assets controlled by the central bank of a country. The reserve position of Nigeria at any given time is a reflection of the circumstances prevailing in the international oil market (George 2007). The size of Nigeria's external reserves has been fluctuating over the years. The stock of reserves which was US\$7.47 billion at end of December 2003, increased by 127 percent to US\$16.96 billion in 2004. It could finance 18.4 months of imports. The import cover was much higher than the West Africa Monetary Zone (WAMZ) minimum requirement of 6 months. *See chart and table as appendage:*

From the foregoing, the researcher is of the opinion that external reserves generally have focused mainly on the concept, nature, sources, size, the foreign exchange disbursement and months such reserves could finance importation. Against this backdrop, this work sees the following as constituting the major statement of problem for this study.

- i. The non-utilization of Nigeria's huge external reserves for the development of infrastructure/social services
- ii. The poor management of the reserves which has, to a large extent affected the growth of the economy.

4.0 Objectives of the Study

The broad objective of this study is to examine the effects of external reserves management on economic development in Nigeria.

The specific objectives are:

- i. To examine the relationship between external reserves and the explanatory variables.
- ii. To also examine the extent to which external reserves account for financial stability.

5.0 Hypotheses of the Study

In pursuance of the set objectives of this study, the following hypotheses were drawn for testing, where economic development is the dependent variable.

- i. There is no significant relationship between external reserves and the explanatory variables (Gross domestic product, export oil, non-oil, import oil, non-import oil and political stability).
- ii. There is no significant relationship between external reserves and financial stability.

6.0 Relevance of the Study

The importance of the study cannot be over-emphasized. It is believed that this study will provide an appropriate framework for the analysis of foreign reserves management and its effects on economic development. Such a framework will help identify the key variables of foreign reserves management and its effects on the economy.

7.0 Model Specification

The study adopted the econometric model in evaluating the role of external reserves in the Nigeria economy. The econometric model used was to determine the relationship between external reserves and selected macroeconomic variables (gross domestic product, GDP, export oil, non-export oil, non-import oil, capital goods, non-capital goods and political stability) towards adopting a policy option.

Evans and Egwakhe (2008) observed that external reserves were held with a view to making the economy more attractive to foreign investment, which would, in turn, improve the economic performance of the nation. Hence the expectation that external reserve has a relationship with the level of economic productivity captured by GDP and other variables.

In their empirical investigation of the role of external reserves on the Nigerian economy, Evans and Egwakhe (2008), used the Ordinary Least Square (OLS) technique and adopted a model of the form:

$$\ln(R_i) = a_0 + a_1 \ln(E_i) + a_2(I_i) + e_i \quad (1)$$

Where :

L_n represents natural log transformation, i is time lag, R is ratio of external reserve to GDP, E is ratio of exports to GDP, I is ratio of imports to GDP, e_i is error term and a_s are parameters.

Following the model of Evans and Egwakhe (2008), the researcher adopted their formulation with a little modification. That is, export was divided into oil export and non-oil export because they are the major components of export. Oil export constitutes about 90 percent and the other 10 percent is non-oil export. In the modification, import was also broken into two, that is, capital goods and non-capital goods because these are also the major components of import. In addition to the modification of Evans and Egwakhe (2008), GDP was included because it captures the level of economic activity. A dummy variable was also introduced as a proxy for political stability. It takes the values of 0 for stability and 1 for instability.

7.1 Variable Descriptions

The data collected are within a time frame of 1980 and 2009. It includes the following variables: EXTR – External Reserves, GDP – Gross Domestic Product, EXOIL – Export Oil, NEOIL – Non-Export Oil, NOILMP – Non-Oil Import, CPG – Capital Goods, NCPG – Non-Capital Goods, POLST – Political Stability.

7.2 Model Specification and Adoption

One model was adopted in this study. That is,
 $EXTR = f(GDP, EXOIL, NEOIL, NOILMP, CPG, NCPG, POLST)$
The model was adopted based on the formulation of Evans and Egwakhe (2008) and operationalized as:
 $EXTR = \beta_0 + \beta_1 GDP + \beta_2 EXOIL + \beta_3 NEOIL + \beta_4 NOILMP + \beta_5 CPG + \beta_6 NCPG + \beta_7 POLST + U$

8.0 Research Methodology

This chapter specifically deals with the technique of enquiry underlying the study. Attention has been focused on source of data, model formulation and method of data analysis.

8.1 Source of Data Collection

The data used in this study were mainly secondary data. They covered the period of (1986 – 2009) and were obtained from various sources, notably the Central Bank of Nigeria (CBN) annual reports (2007, 2008 and 2009), CBN statistical bulletin (2008, 2009 and 2010) and economic journals. Others were obtained from textbooks and the internet.

8.2 Data Analysis Techniques

The technique used in this study is the Ordinary Least Square (OLS) estimation technique. The test instruments in the OLS are the T-statistics and F-test which were used to test the significance of variables and the overall significance of the regression respectively. Other test instruments also employed were the Durbin Watson test which was used to test the presence or absence of auto correlation between and among the explanatory variables and the adjusted R square used to test the percentage variation of the dependent and the independent variables.

8.3 Result of Empirical Analysis

The estimate of the model

$$EXTR = 917401.8 + 0.661458GDP + 0.202 EXOIL - 36.00NEOIL - 0.012NOILMP + 141.67CPG - 500.6398 NCPG - 9562011.POLST \quad (2)$$

From the OLS result, $R^2 = 0.66$ which shows that there is high positive correlation among the variables at 66.1%. The adjusted R-squared = 0.548 implies that the co-efficient of determination indicated that the degree of analysis is accurate and the independent variables (GDP, EXOIL, NEOIL, NOILMP, CPG, NCPG, and POLST) are capable of explaining the dependent variable (EXTR) by 54.8%, while 45.2% of the explanatory variable is captured or accounted for by error and other factors. The result of Durbin Watson (2.6065) revealed that there is no presence of serial autocorrelation, which means the model is good for policy evaluation. The individual analysis of the variables shows that the coefficient of β_1 is 0.6615 which implies a positive relationship between the regressor variable, gross domestic variable, and the dependent variable, external reserves. It further implies that a unit change in gross domestic product brought about a 0.6615 change in external reserves.

The estimate of β_2 is 0.20222. As expected, it shows a direct relationship between export oil and external reserves such that a unit change in export oil resulted in 0.2022 changes in external reserves. -36.0074 is the estimated value of β_3 which shows a negative relationship between non-oil export and external reserves. The implication is that a unit change in non-oil export resulted in a -36.0074 variation in external reserves. The estimate of β_4 is -0.0126 which also signals an inverse relationship between non import and external reserves. What this signifies is that a -0.0126 change occurred as a result of a unit change in non-oil import. For β_5 , 141.6775 is estimated value. This shows a positive relationship between capital goods and external reserves. Impliedly, a unit change in capital goods resulted in a 141.6775 variation in external reserves. The coefficient of β_6 is -500.6398. It demonstrates a negative relationship between non capital goods and external reserves. This further means that a change in non-capital goods brought about a negative change of -500.6398 in external reserves. For β_7 , -956201.1 is the coefficient. This shows an inverse relation between political stability and external reserves. Impliedly, a unit change in political stability resulted in a -956201.1 change in external reserves.

The values of t-ratio for β_1 , β_2 , β_3 , β_4 , β_5 , β_6 and β_7 are 0.644, 0.145, -0.962, -0.036, 0.092, -0.349, and -0.770 respectively, while that of the statistical table at 5% level of significance is 2.056. Since the value of the T-ratio from the statistical table is greater than that which was calculated, it means that the estimates of $\beta_1 - \beta_7$ are statistically significant. We therefore reject $H_0: \beta_1 = 0, \beta_2 = 0, \beta_3 = 0, \beta_4 = 0, \beta_5 = 0, \beta_6 = 0, \beta_7 = 0$ and accept $H_1: \beta_1 \neq 0, \beta_2 \neq 0, \beta_3 \neq 0, \beta_4 \neq 0, \beta_5 \neq 0, \beta_6 \neq 0$ and $\beta_7 \neq 0$.

9.0 The summary of findings is as follows:

- i) The empirical analysis shows a positive relationship between external reserves and some explanatory variables. The variables include gross domestic product, export oil, and capital goods. These account for 54.8% variation in external reserves.
- ii) The study has also shown that a negative relationship exist between external reserves and non-oil export, non-capital goods, non-import, and political stability.
- iii) External reserve was also found to be negatively related to macroeconomic stability, hence the non-utilization of this reserve to provide social services and infrastructure.

10.0 Recommendations

The study has shown that there is a positive correlation between external reserves and the growth rate of GDP, EXOIL and CPG. It is therefore important for appropriate policy formulation and implementation of such policies to encourage and boost the growth rate of these variables.

Since there is a direct relationship between external reserves and GDP, the need to diversify the economic base and encourage agriculture becomes instructive. With this, our non oil export will be increased. This is because if we encourage agricultural production, it will not only guarantee food security, increase the nation's GDP and foreign earnings, but it will generate employment and incomes thereby increasing the standard of living of the average Nigerian. If agriculture is encouraged, it will also act as a buffer to cushion shocks arising from the volatility as well as the instability in the international oil market.

From the empirical analysis, it was also observed that a positive relation exist between external reserves and EXOIL. It follows therefore that the downstream oil sector needs to be encouraged. To do this end, government should provide an enabling environment such that the multinationals are protected and youth restiveness in the Niger Delta nipped in the bud permanently.

Against the general consensus that a stable political climate encourages both local and foreign investment, our empirical result deviated from this by showing a negative relationship between political stability and external reserves. It is against the backdrop of this scenario that the researcher is of the opinion that our democracy should be practiced according to the rules and cost of governance drastically reduced.

Also, government should encourage and partner with the private sector. Such public/private sector partnership will reduce the unemployment scourge and consequently relax the political tension that has continuously characterized the political in recent times.

Furthermore, there should be deliberate and systematic effort to use part of the reserves for infrastructural development and save part of it for future generation as oil, which is the main source of this reserve accumulation is a wasting asset. This can be given impetus through an appropriate constitutional provision.

11.0 Conclusion

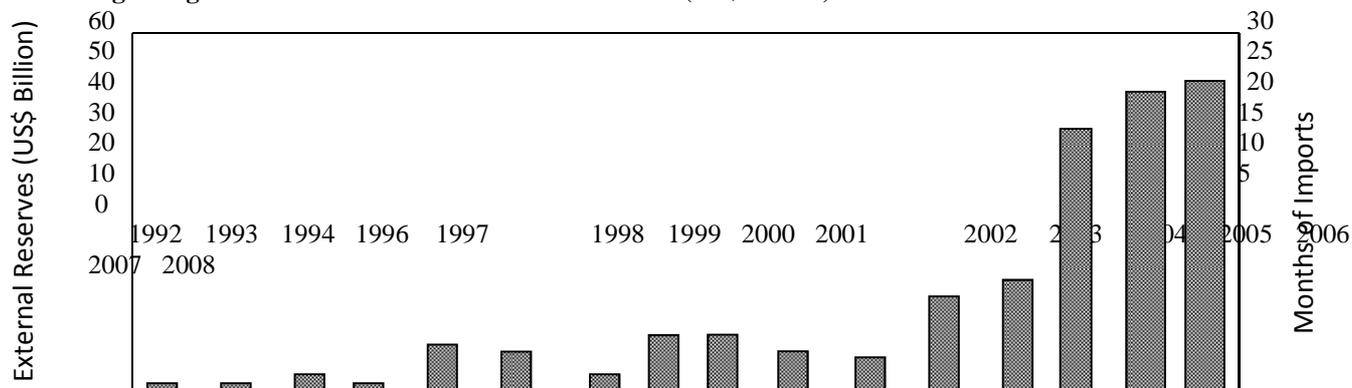
Over the years, the Nigerian economy has witnessed a lot of socio-economic and political challenges. These challenges notwithstanding, it is the researchers' opinion that with determination and sincerity of purpose, we shall actualize the desired economic growth and development. The challenges may be daunting, but we have all it takes to face them squarely. In conclusion, the need for an effective and efficient management of Nigeria's external reserves is imperative. This is because poor management of external reserves may put at risk other elements or components of national policy. For instance, an official exchange rate policy can cause severe economic damage. Hence, reserve management should seek to ensure that adequate reserves are available such that risks are controlled in a prudent manner and reasonable earnings are generated over the medium to long term on the funds invested.

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Appendix

Fig. 1 Nigeria's Stock of External Reserves Position (US\$ Billion)



Source: CBN Annual Report and Statement of Accounts (1997 – 2008) editions and CBN Statistical Bulletin, Vol. 16, Dec. 2008.

**Table1:
Recent Trends in Nigeria's External Reserves (1992 – 2008)**

Year	Stock of External Reserves (US\$ Billion)	Percentage change in stock of reserves	Months of imports cover	External debt stock (US\$ Billion)	Ratio of reserves/stock of external debts
1992	0.70	***	***	***	***
1993	1.30	85.71	***	***	***
1994	1.70	30.77	3.00	29.43	0.06
1995	1.40	-17.65	2.10	32.58	0.04
1996	4.10	192.90	7.60	28.06	0.15
1997	7.58	84.90	9.60	27.09	0.28
1998	7.10	-6.30	9.20	28.91	0.25
1999	5.50	-22.50	7.60	28.07	0.20
2000	9.90	80.00	13.60	28.27	0.35

Source: CBN Annual Report and Statement of Accounts (1997 – 2008) editions and CBN Statistical Bulletin, Vol. 16, Dec. 2008.

*** Not available .

Table2: Result of Empirical Analysis

The model specified in the study was estimated using the ordinary least square regression technique. The result obtained is summarized below:

Regression Result of Model

Variables	Coefficient	Standard Error	T=Statistics	Prob.
GDP	0.661458	1.026505	0.644379	0.5263
EXOIL	0.202154	1.391980	0.145228	0.8859
NEOIL	-36.00743	37.42813	-0.962042	0.3470
NOILIMP	-0.012592	0.351806	-0.035793	0.9718
CPG	141.6775	1541.058	0.091935	0.9276
NCPG	-500.6398	1432.677	-0.349444	0.7302
POLST	-956201.1	1240965	-0.770530	0.4496
C	917401.8	1149267	0.798249	0.4337

R^2 0.6612, R^{-2} 0.5483, F-stat 5.8549, DW Stat. 2.6066

Source: *SPSS Result Output*

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