

## DOES GENDER HAVE ANY IMPACT ON PORTFOLIO INVESTMENT PERFORMANCE? A CASE STUDY OF CIVIL SERVANTS IN EDO STATE, NIGERIA

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### Abstract

This paper sought to find out if gender played any role on the performance of portfolio held by civil servants in Edo State, Nigeria. The instrument of data collection was by structured questionnaire and analyses by use of regression and correlation matrix. Findings revealed that there was no significant difference in the performance of portfolio held by men and women. The paper recommends the need for the government of Nigeria to encourage the development of more investment trusts and funds because most of the investors on the Nigerian Stock Exchange (NSE) are small unsophisticated investors. Also to improve the level of financial knowledge of the individual investors through enlightenment programmes as this may solve the problem of herding.

**Keywords:** Gender, Portfolio Investment, Returns on Investment, Performance, Herding

### INTRODUCTION

Whether there are investing differences between men and women is one question that has generated of great deal of argument and debate among researchers. It has been a common belief that the portfolio of assets held by men perform better than that held by women in terms of return on investment. Nevertheless, according to Croson and Greezy (2009), Merrill Lynch findings, along with other research suggest that men and women may be significantly closer in their investment views and habits than many people assume. They also opined that where differences occur, they appear to be shaped by social and demographic factors such as education, employment and income than inborn characteristics. In Edo State, educated women invest a great deal in shares. This is so because of the effect of herding. Friends, family members, colleagues in the offices most often do not bother to study events in financial markets before investing because they all herd in the same direction after a so-called leader. The leader only needs to say I have invested in so and so, then others follow suit. The reason for this is not so far-fetched seeing that most investors in Nigeria are financial illiterates. Shiller (2000) outlines a psychological experiment by Deutsch and Gerrard where the human tendency to concur with the majority view was shown. Empirical evidences have shown that most investors in Nigeria especially women are unsure about what stock to invest in, but rather, would be happy to go with the bandwagon to opt out of making personal decision. In a study by Odejimi and Agbada (2014), it was revealed that women lacked the needed access to bank loans without being guaranteed by their husbands or brothers. This effect makes them attempt to free ride the information that the first investor must have had especially if he is man. Some of the women interviewed in the course of getting information for this paper confessed that most often their portfolios had underperformed the market. Some believed they would have been better off if their money was left in fixed deposit accounts. The main focus of this study is to find out if gender has any significant relationship with performance of portfolio investment.

## REVIEW OF RELATED LITERATURE

Gender is one of the most researched factors that appear to determine investment behaviours. Studies find that women take less investment risk in comparison to men. Jianakoplos and Bernasek (1998) report results from findings to further support the hypothesis that a far lower percentage of women than men are willing to take any financial risk at all.

Bajtelsmit and Bernasek (1996) find that sex is the third most important factor in determinants of investors risk attitude and also the third most important factor in investment decision. Findings from studies related to economics for instance also support the view that women are more risk averse, also that almost 50% of women were unwilling to take more risk in return for higher expected return.

Barber and Odean (2001) report that women show less confidence than men in areas related to investment in financial assets. They also find that men trade 45% more than women. They proposed that investors who tend to trade excessively take more risk and make poor investment decisions.

Byrnes et. al (1999) summarized 150 studies from psychology literature which examined differences in risk investment taking by men and women, demonstrating that women on the average take less risk than men.

On the other hand, there are also contradictory evidences demonstrating that women are more risk loving than men. Schubert (2006) shows that women appear less sensitive to probabilities and are more pessimistic about gains than men. He also describes the notion that men are less risk averse than women as a stereotype that leads to discrimination against women in the labour market and keeps women from assuming managerial positions.

Given the African culture and context, Slovic (1966) notes that children are pressured during childhood into behaving according to culture sex roles, which results in a lower propensity for women to take risk. While Byrnes (1999) assumes that the strict and restrictive discipline on the female children during childhood may be a factor to be considered while trying to explain their resistance in engaging in risking ventures.

## METHODOLOGY

This study utilizes the survey research design to examine the relationship between sex and portfolio investment performance of civil servants in Edo State, Nigeria. The survey method was particularly of importance because it affords the opportunity to gather first hand data from many respondents. Civil servants are public sector workers in the various establishments and institutions in the three tiers of government in Nigeria. The Stratified random sampling method was employed so as to give adequate coverage of civil servants in all the tiers in the State.

A total of 215 questionnaires were retrieved from the 360 distributed, the empirical framework employed was based on the conceptual framework as discussed in the literature review involves establishing the relationship that exist or could exist between performance of portfolio and gender.

The data analysis techniques consist of descriptive and statistical analyses. The statistical tool involved the use of regression and correlation matrix.

The Sharpe Performance Index was employed in evaluating portfolio performance. The Sharp Performance Index (Si) uses the standard deviation of the returns as the measure of

risk. In effect, the index standardizes the return in excess of the risk-free rate by the variability of the return. The formula for the calculation of the index is

$$S_i = r_p - r_f$$

Where  $r_p$  represents the realized returns by the individual investor,  $r_f$  is the risk free return which is represented by Treasuring Bill Rate of 364 day tenor in the paper.  $\delta p$  represents the standard deviation of the individual portfolio returns.

Respondents were asked to tick their average returns on investment given in the categories of 10%, 20%, 30% and 40% respectively.

The value for the risk free return represented by Nigeria Treasury Bill Rate is 13.5% (CBN Annual Report, 2013).

### Model Specification

$$PIP = f(\text{Gen, Inc, RT})$$

Where PIP = Portfolio Investment Performance

INC = Income

RT = Risk Tolerance

Gen = Gender

The linear form of equation (1) is specified as

$$PIP = B_0 + B_1 \text{GEN} + B_2 \text{INC} + B_3 \text{RT} + U_t \text{-----} (2)$$

Where  $U_t$  = Stochastic Error Term

$B_0$  = Constant Term or Intercept  
 $B_1 - B_3$  = Parameters of Coefficient.

However, equation (2) is further expanded by use of dummy variables to capture the various levels of risk tolerance, namely:

RT1 (Conservative Investors), RT2 (Moderately Conservative Investors), RT3 (Aggressive Investors).

Therefore, the equation for regression is thus specified as

$$PIP = B_0 + B_1 \text{GEN} + B_2 \text{INC} + B_3 \text{RT1} + B_4 \text{RT2} + B_5 \text{RT3} + U_t$$

Where  $RT1 = 1$  for Conservative Invest, 0 otherwise  
 $RT2 = 1$  for Conservative Invest, 0 otherwise

$RT3$  = Control category represented by the Value of the Intercept.

It is important to note that if a qualitative variable (Risk Tolerance as in this study) has 'm' categories, only (m-1) dummy variables are introduced (Gujarati and Porter, 2009).

Therefore, Aggressive Investors ( $RT3$ ) forms the base, control, benchmark comparison or omitted category. All comparisons are made in relation to the benchmark category.

### A' priori expectations

$B_1 > < 0$  : This direction is not specified because gender can have either a negative or

positive impact on Portfolio Investment Performance.  
 $B_2, B_3, B_4, B_5 > 0$  : These specify positive relationships.

## ANALYSIS & FINDINGS

The main source of data used for this paper was from primary source. The following classifications are obtained from the retrieved questionnaires.

**Table 1: Respondents Classified by Gender**

GENDER	NO OF RESPONDENTS	%
Male	120	56%
Female	95	44%

**Table 2: Respondents Income Classified by category and Gender**

Annual Income (N)	MALE	%	FEMALE	%	TOTAL
Up to 600,000	5	4	8	9	13
600,001 – 800,000	17	14	23	24	40
800,001 – 1.2million	46	38	31	33	77
1.2m – 1.8m	29	24	20	21	49
1.8m – 2m	13	11	7	7	20
2m – 2.5million	6	5	4	4	10
Above 2.5million	4	3	2	2	6
	<b>120</b>	<b>100</b>	<b>95</b>	<b>100</b>	<b>215</b>

The modal class for both male and female represented by an average annual salary of N800,000 to N1.2m constitute about N36% of the respondents.

**Table 3: Respondents Classified by Risk Tolerance and Gender**

Category of Investors	Male	%	Female	%	Total	%
Conservative	47	39	56	100	100	47
Moderately Conservative	55	46	34	87	87	40
Aggressive Investment	18	15	10	28	28	13
	<b>120</b>	<b>100</b>	<b>95</b>	<b>215</b>	<b>215</b>	<b>100</b>

The table 3 reveals that risk tolerance level of the individual investor and this is evidenced in the composition of the assets held in their portfolio. Conservative investors held about 30% of their portfolio in equities and 70% in other assets like bond and treasury bills which are less risky.

Moderately conservative and aggressive investors held 45% and 55% respectively in equities. Results from the table reveals that 56% of the female investors as against 39% of the male were conservative investors. Surprisingly, both male and female investors recorded lowest response rate in the aggressive investors' category.

**Table 4: Respondents Classified by Rate of Return on Investment**

Returns (%)	Male	%	Female	%	Total	%
10	43	36	47	50	90	42
20	54	45	24	25	78	36
30	11	9	21	22	32	15
>40	12	10	3	3	15	7
	<b>120</b>		<b>95</b>	<b>100</b>	<b>215</b>	

Table 4 reveals that only 7% which is 15 respondents had their portfolio perform with a

return of 40% and above. While majority of the respondents both male and female had returns on investment of about 10% as a result of holding about 70% of the assets in less risky assets with lower returns.

Treasury Bills which formed the benchmark for portfolio performance is estimated at 15% (CBN Report 2013). Evidence from the table reveals that 42% of the respondents under performed the benchmark.

### Interpretations

The major objective of the paper is to establish if there is a relationship between Portfolio Investment Performance and Gender. Using Micro-Fit 4.1 for windows and SPSS version 21.0 the following estimates were obtained.

$$PIP = -1.13 + 0.634INC + 0.007GEN + 0.134RT1 + 0.516RT2$$

(-2.76) (3.48) (0.374) (0.76) (2.419)

$$R^2 = 0.61, F\text{-stat, } f [(10.134 (.000))]$$

Figures in parenthesis ( ) represent the T – ratios.

From the estimated regression result, it is shown that Portfolio Investment Performance is positively related to Income, Gender, Conservative and Moderately Conservative Investment.

The crux of this paper which is to examine the relationship between Portfolio Investment Performance and gender reveals that though a positive relationship exist, it did not pass the significance test even at 10%.

Income and moderately conservative investment had positive significant impact on Portfolio Investment Performance but surprisingly, aggressive investment captured by the intercept had a negative impact with -1.13 and significant at 5%. This negative sign can be explained by the fact that aggressive investment is risky asset can be rewarding if all goes well, otherwise it can lead to colossal loss.

**Table 5: Estimated Pearson Correlation Matrix of Respondent**

	PIP	INC	GEN	RT
PIP	1			
INC	0.716	1		
GEN	0.046	0.197	1	
RT	0.480	0.339	0.028	1

A close examination of the above table reveals Portfolio Performance has a strong correlation with income with a coefficient of 0.716 while Risk tolerance and Portfolio investment performance have a good relationship with a coefficient of 0.480. Gender and PIP shows a coefficient of 0.046 indicating a very weak correlation.

### CONCLUSION

Data obtained from the respondents and the results from statistical computation shows that all the variables conformed to a priori expectation except RT3 which represented Aggressive investors. The variable of interest (Gender) did not show any significant difference between investment pattern by men or women worthy of note. Also portfolio held by men did not perform significantly better than that held by women. This leads us to conclude that Gender does not determine the performance of portfolio but rather other

variables like Risk Tolerance level and income played significant role. Our analysis found that 85% of men and 87% of female invested conservatively and moderately conservatively. These findings supports the submission by Croson and Gneezy (2009) on the finding by Merrill Lynch and others, that there is little or no significant difference in investment pattern or performance of portfolio held by men and women. A study of this nature obviously has far reaching policy implications for an economy like Nigeria's that is emerging especially in strengthening the stock market. However, fund was a major limitation especially in the administration of the questionnaires which was done on one- on-one basis, thus the sample population focused only on civil servants in Edo State, Nigeria.

## RECOMMENDATIONS

- That the government of Nigeria encourage the development of more investment trusts and funds because most of the investors on the Nigerian Stock Exchange (NSE) are small unsophisticated investors.
- Another great challenge to the NSE is the need to improve the level of financial knowledge of the individual investors through enlightenment programmes as this may solve the problem of herding.

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