Influence of Demographic Factors on Investment Performance

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Abstract

Investment involves commitment of money with the expectation of earning additional return. Investment performance generally indicates the outcome of an investment programme and it depends on several factors. When making investment different type of investors behave in different manner. Thus it is important to examine the influence of demographic factors of investors on investment performance. The objective of the study is to investigate the influence of demographic factors on the investment performance of household investors in the Northern Province of Sri Lanka. The respondents of the study were 1810 household investors in the Northern Province of Sri Lanka, who were selected under proportionate stratified random sampling technique. The collected data were analyzed with the support of analytical tools of independent t - test and one way ANOVA test. The results of the study reveal that gender, age, educational qualification, occupation and income of investors influence the investment performance whereas marital status of investors has no influence on investment performance. Based on the findings it is recommended to conduct investment training and awareness programme and to design new financial products and services which are particularly appropriate to specific segment of investors.

Keywords: investment, investment performance, demographic factors, return

1. Introduction

People tend to save a part of their current income for the purpose of financing their future consumption. Thus saving arises by sacrificing the current consumption. The money saved by the people are invested in various investment options up to their future consumption. Investment may be expressed as the commitment of resources or funds made in the expectation of realizing benefits that are expected to occur over a reasonably long future period of time (Kevin, 2006). Therefore the major feature of investment is expecting a reward or return. Fundamentally, investors should obtain a return from investments which is at least sufficient to protect the negative outcome of inflation. In other words, investors should obtain a minimum return which is adequate to protect the real value of their saved money. Otherwise it will be impossible to investors to achieve the objective of financing their future consumption. Thus investors need to provided more attention on performance of their investments. Investment performance indicates the outcomes of an investment programme (Feibel, 2003). Investment performance is assessed in terms of return earned by investments and the satisfaction derived by the investors from the investment.

2. Research Problem

Investment performance depends on various factors. Those can be broadly categorized in to economic factors, political factors, social factors and personal factors. Personal factors indicate the demographic features of investors. Talpsepp (2013) indicated that performance of investments of female investors is higher than the performance of male investors and older investors outperform younger investors in both female and male groups. Ozerol, Camgoz, Karan & Ergeneli (2011) mentioned that there is a strong positive correlation between age, education and marital status of investors and their investment performance and authors found that female investors and single investors perform better as compared to men and married investors respectively. Barber and Odean (2001) stated that male investors trade 45% more than female investors and this excessive trading of male investors results in poor return. Thus, this study attempts to identify the influence of demographic factors on investment performance of individual household investors in the Northern Province of Sri Lanka.

3. Objective of the Study

The objective of the study is to identify the influence of demographic factors on the investment performance of household investors in the Northern Province of Sri Lanka.

4. Review of Literature

Barber and Odean (2001) found that single men trade 67 % more than single women and earn annual risk-adjusted net returns which are 2.3 % lower than those earned by single women. Similarly, married women earned a stock market annual risk-adjusted net return 1.4 % more than married men.

Ozerol, Camgoz, Karan & Ergeneli (2011) concluded that female investors as compared to male investors and single investors as compared to married investors perform better in stock investments.

Talpsepp (2013) found that female investors perform better than the male investors and older investors exhibit better performance than younger investors in both female and male investor groups.

Lewellen, Lease & Schlarbaum (1979) conducted a study on, Investment Performance and Investor Behaviour, and concluded that level of education and income of the investors were negatively associated with performance.

Bliss & Potter (2002) examined the influence of gender on risk taking behaviour and performance and concluded that female investors tolerate more risk and earn higher raw returns than males.

Shu, Chiu, Chen & Yeh (2004) have made an attempt to identify the relationship between trading and investment performance and found that although males trade more excessively than females investment performance of males are not significantly lower than women's.

Feng & Seasholes (2008) investigated the investment decisions of over 50 000 individual investors in China and concluded that gender has no effect on the portfolio performances of individual investors.

5. Hypothesis of the Study

The study considers the following hypotheses.

H1: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their gender.

H2:There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their marital status.

H3: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their age.

H4: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their educational qualification.

H5: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their occupation.

H6: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their income.

6. Data Collection

This study is a primary data based study and the relevant data was collected by using a structured questionnaire from 1810 individual household investors in the Northern Province of Sri Lanka under Proportionate stratified random sampling method. The Northern Province of Sri Lanka includes five administrative districts namely, Jaffna, Kilinochchi, Mullaitivu, Mannar and Vavuniya. Selection of sample respondents under proportionate stratified random sampling method involves a process of stratification followed by random selection of

samples from each stratum. Population is stratified in terms monthly income of the household investors. Table 1 shows the profiles of the respondents.

Table 1. Profile of respondents

Demographic Factors		Number of Respondents	Percentage
Gender	Male	1192	65.9
	Female	618	34.1
Age	<30	212	11.7
	31-40	419	23.1
	41-50	557	30.8
	51-60	451	24.9
	>60	171	9.4
Marital Status	Single	1513	83.6
	Married	297	16.4
Educational Qualification	Below G.C.E.O/L	137	7.6
	G.C.E.O/L	266	14.7
	G.C.E. A/L	829	45.8
	Diploma	194	10.7
	Graduate	300	16.6
	Post Graduate	84	4.6
Monthly Income	<25000	242	13.4
	25000-35000	542	29.9
	35001-45000	551	30.4
	45001-55000	297	16.4
	>55000	178	9.8
Occupation	Self Employed	591	32.7
	Private Sector Employee	487	26.9
	State Sector Employee	638	35.2
	Retired	94	5.2

7. Results and Analysis

The influence of demographic factors on the investment performance of individual household investors in the Northern Province of Sri Lanka was examined with the support of analytical tools of independent t - test and one way ANOVA test. The independent t - test was used to determine whether there is a statistically significant difference between the means in two unrelated groups. Whereas the one way ANOVA was used to compare means between three or more groups.

7.1 Gender and Investment Performance

In order to compare the investment performance of male and female household investors, an independent-samples t-test was conducted.

Table 2. Group Statistics: Gender and Investment Performance

Gender	N	Mean	Std. Deviation	Std. Error Mean	Skewness	Std. Error	Kurtosis	Std. Error
Male	1192	3.4525	0.68028	0.019	-0.369	0.071	-0.355	0.142
Female	618	3.3825	0.66141	0.026	-0.433	0.098	-0.217	0.196

The group statistics for Gender and Investment Performance is shown in Table 2 and it indicates that male investors showed higher investment performance (M = 3.4525, SD = 0.6803) than the females (M = 3.3825, SD = 0.6614).

Table 3. Independent samples t-test: Gender and Investment Performance

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.948	.330	2.096	1808	.036	.07001	.033	.00450	.13553
Equal variances not assumed			2.115	1279.931	.035	.07001	.033	.00506	.13496

Table 3 exhibits the results of the Independent samples t-test for Gender and Investment Performance. The p value of the F statistic of Levene's Test for Equality of Variances is greater than 0.05 and thus it can be concluded that the assumption of homogeneity of variance is met. The relevant t value is 2.096 and p<0.05. These statistics it indicates that there is significant difference in the investment performance of male and female investors and particularly, male investors experience higher investment performance than female investors. Thus it can be concluded that there is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their gender.

7.2 Marital Status and Investment Performance

For the purpose of identifying the influence of marital status on investment performance an independent-samples t-test was conducted and the Group statistics for Marital Status and Investment Performance are exhibited in Table 4. According to the Table 4 investment performance mean values of married and single investors are 3.4270 (S.D= 0.6819) and 3.4369 (S.D= 0.6366) respectively.

Table 4. Group Statistics: Marital Status and Investment Performance

Marital Status	N	Mean	Std. Deviation	Std. Error Mean	Skewness	Std. Error	Kurtosis	Std. Error
Married	1513	3.4270	.68191	.018	-0.396	0.063	-0.331	0.126
Single	297	3.4369	.63664	.037	-0.301	0.141	-0.195	0.282

According to the results of the Independent samples t-test for Martial Status and Investment Performance which are exhibited in Table 5 the p value of the F statistic of Levene's Test for Equality of Variances is greater than 0.05 and it implies that the assumption of homogeneity of variance is met. Therefore the relevant t value of the test is -0.231with a p value of 0.817 and since p value is greater than 0.05, it can be concluded that there is no significant difference in the investment performance of married and single investors.

Table 5. Independent samples t-test: Marital Status and Investment Performance

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Differ	95% Confidence Interval of the Difference

						ence	Lower	Upper
Equal variances assumed	2.404	.121	-.231	1808	.817	-.00990	.043	-.09389	.07408
Equal variances not assumed			-.242	439.967	.809	-.00990	.041	-.09027	.07046

7.3 Age and Investment Performance

Influence of age on Investment performance of investors was examined by using one way ANOVA test. The five age groups of household investors considered in the study were 30 years or below, 31 - 40 years, 41 - 50 years, 51 - 60 years and over 60 years. The group statistics for age wise investment performance are shown in Table 6 and it reveals that Investors in the age group of 31 - 40 years exhibit the highest investment performance with the mean value of 3.4851 (S.D=0.6500), whereas, investors in the age group of over 60 years exhibit the lowest investment performance with the mean value of 3.2325 (S.D=0.7798).

Table 6. Group Statistics of Age wise Investment Performance

Age	N	Mean	Std. Deviation	Std. Error Mean	Skewness	Std. Error	Kurtosis	Std. Error
30 Years or Below	212	3.4847	.67511	.04637	-0.238	0.167	-0.392	0.333
31 - 40 Years	419	3.4851	.65004	.03176	-0.450	0.119	0.194	0.238
41 - 50 Years	557	3.4259	.64689	.02741	-0.428	0.104	-0.273	0.207
51 - 60 Years	451	3.4274	.67602	.03183	-0.442	0.115	-0.376	0.229
Over 60 Years	171	3.2325	.77984	.05964	-0.030	0.186	-0.901	0.369

The results of one way ANOVA test between the different age groups of respondents and investment performance are shown in Table 7 and according to the results F statistic is 4.757 and $p<0.05$. A significant F value implies the significant differences in the investment performance based on age.

Table 7. ANOVA: Age and Investment Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.587	4	2.147	4.757	.001
Within Groups	814.496	1805	.451		
Total	823.083	1809			

In this point the fulfillments of the assumptions of the one way ANOVA test was examined. The result of the test of homogeneity of variances is exhibited in Table 8 and it provided a significant (p<0.05) Levene Statistic. It indicates the violation of the assumption of Homogeneity of Variances.

Table 8. Test of Homogeneity of Variances: Age and Investment Performance

Levene Statistic	df1	df2	Sig.
5.878	4	1805	.000

The violation of the assumption of homogeneity of variance pointed out that an alternative ANOVA had to be conducted and warranted the use of adjusted F test of Welch statistic and Brown-Forsythe statistic. Table 9 shows the results of robust tests of equality of means and significant Welch statistic and Brown-Forsythe statistic were found (p<0.05).

Table 9. Robust Tests of Equality of Means: Age and Investment Performance

	Statistic[a]	df1	df2	Sig.
Welch	3.822	4	652.565	.004
Brown-Forsythe	4.494	4	1135.067	.001
a. Asymptotically F distributed.				

Since the Welch and Brown-Forsythe statistics are significant, in order to compare the investment performance groups the Games-Howell post hoc test was conducted and the results of the test are shown in Table 10.

Table 10. Games-Howell post hoc test of Multiple Comparisons: Age and Investment Performance

Dependent Variable: Investment Performance							
	(I) Age	(J) Age	Mean Differenc e (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Games-Howell	30 Years or Below	31 - 40 Years	-.00041	.05620	1.000	-.1544	.1536
		41 - 50 Years	.05873	.05386	.812	-.0889	.2064
		51 - 60 Years	.05729	.05624	.847	-.0968	.2114
		Over 60 Years	.25221*	.07554	.008	.0450	.4594
	31 - 40 Years	30 Years or Below	.00041	.05620	1.000	-.1536	.1544
		41 - 50 Years	.05914	.04195	.621	-.0555	.1738
		51 - 60 Years	.05770	.04496	.702	-.0652	.1806
		Over 60 Years	.25263*	.06756	.002	.0671	.4382
	41 - 50 Years	30 Years or Below	-.05873	.05386	.812	-.2064	.0889
		31 - 40 Years	-.05914	.04195	.621	-.1738	.0555
		51 - 60 Years	-.00144	.04201	1.000	-.1162	.1134
		Over 60 Years	.19349*	.06563	.029	.0131	.3739
	51 - 60 Years	30 Years or Below	-.05729	.05624	.847	-.2114	.0968
		31 - 40 Years	-.05770	.04496	.702	-.1806	.0652
		41 - 50 Years	.00144	.04201	1.000	-.1134	.1162
		Over 60 Years	.19493*	.06760	.034	.0093	.3806
	Over 60 Years	30 Years or Below	-.25221*	.07554	.008	-.4594	-.0450
		31 - 40 Years	-.25263*	.06756	.002	-.4382	-.0671
		41 - 50 Years	-.19349*	.06563	.029	-.3739	-.0131
		51 - 60 Years	-.19493*	.06760	.034	-.3806	-.0093
*. The mean difference is significant at the 0.05 level.							

The results of the Games-Howell post hoc test indicates that the investment performance of investors in the age group of Over 60 Years is significantly different from investors in the other age categories. The mean differences between the age group of Over 60 Years; and 30 Years or Below, 31 - 40 Years, 41 - 50 Years and 51 - 60 Years are -0.25221, -0.25263, -0.19349 and -0.19493 respectively. Therefore, there is a significant difference in the investment performance of household investors in the Northern Province of Sri Lanka based on their age.

7.4 Educational Qualification and Investment Performance

Based on their level of educational qualification, household investors were classified in to six groups namely, Below G.C.E O/L Qualification, G.C.E O/L Qualification, G.C.E A/L Qualification, Diploma Holders, Graduates and Post Graduates. Table 11 shows the group statistics for educational qualification wise investment performance and it indicates that graduates demonstrate the highest level of investment performances with a mean value of 3.5883 (S.D = 0.5953) and investors group with Below G.C.E O/L Qualification demonstrate the lowest level of investment performances with a mean value of 3.3002 (S.D = 0.7492).

Table 11. Group Statistics of Educational Qualification wise Investment Performance

Educational Qualification	N	Mean	Std. Deviation	Std. Error Mean	Skewness	Std. Error	Kurtosis	Std. Error
Below G.C.E O/L	137	3.3002	.74915	.06400	-0.066	0.207	-0.907	0.411
G.C.E O/L	266	3.3139	.73517	.04508	-0.161	0.149	-0.842	0.298
G.C.E A/L	829	3.4059	.67990	.02361	-0.329	0.085	-0.222	0.170
Diploma Holders	194	3.4903	.60317	.04331	-0.674	0.175	0.869	0.347
Graduates	300	3.5883	.59533	.03437	-0.564	0.141	0.020	0.281
Post Graduates	84	3.5119	.59542	.06497	-0.609	0.263	-0.085	0.520

One way ANOVA test between the different educational qualification based groups of respondents and investment performance were conducted the results are shown in Table 12. According to the results the F statistic is 6.771 and $p<0.05$ and the significant F value indicates the significant differences in the investment performance of investors based on their educational qualification.

Table 12. ANOVA: Educational Qualification and Investment Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.162	5	3.032	6.771	.000
Within Groups	807.921	1804	.448		
Total	823.083	1809			

An investigation on the fulfillments of the assumptions of the test reveals that the assumption of Homogeneity of Variances was violated since the results of the test of homogeneity of variances reveals a significant Levene Statistic which is shown in Table 13.

Table 13. Test of Homogeneity of Variances: Educational Qualification and Investment Performance

Levene Statistic	df1	df2	Sig.
8.195	5	1804	.000

The violation of the assumption of homogeneity of variance necessitated the use of adjusted F test of Welch statistic and Brown-Forsythe statistic. The results of robust tests of equality of means are shown in Table 14 and Welch statistic and Brown-Forsythe statistic are significant since $p<0.05$.

Table 14. Robust Tests of Equality of Means: Educational Qualification and Investment Performance

	Statistic[a]	df1	df2	Sig.
Welch	7.126	5	438.668	.000
Brown-Forsythe	6.927	5	944.529	.000
a. Asymptotically F distributed.				

As Welch and Brown-Forsythe statistics are significant, in order to compare educational qualification based groups the Games-Howell post hoc test was applied and Table 15 shows the results of the Games-Howell post hoc test.

Table 15. Games-Howell post hoc test of Multiple Comparisons: Educational Qualification and Investment Performance

Dependent Variable: Investment Performance						
(I) Edu_Qualification	(J) Edu_Qualification	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Below G.C.E O/L	G.C.E O/L	-.01373	.07828	1.000	-.2384	.2110
	G.C.E A/L	-.10573	.06822	.633	-.3023	.0909
	Diploma	-.19015	.07728	.140	-.4121	.0318

	Graduate	-.28815[*]	.07265	.001	-.4970	-.0793
	Post Graduate	-.21172	.09120	.190	-.4741	.0506
	Below G.C.E O/L	.01373	.07828	1.000	-.2110	.2384
	G.C.E A/L	-.09200	.05089	.462	-.2377	.0537
G.C.E O/L	Diploma	-.17643	.06251	.056	-.3553	.0025
	Graduate	-.27442[*]	.05669	.000	-.4366	-.1123
	Post Graduate	-.19799	.07907	.129	-.4259	.0299
	Below G.C.E O/L	.10573	.06822	.633	-.0909	.3023
	G.C.E O/L	.09200	.05089	.462	-.0537	.2377
G.C.E A/L	Diploma	-.08442	.04932	.525	-.2258	.0570
	Graduate	-.18242[*]	.04170	.000	-.3016	-.0632
	Post Graduate	-.10599	.06912	.644	-.3066	.0946
	Below G.C.E O/L	.19015	.07728	.140	-.0318	.4121
	G.C.E O/L	.17643	.06251	.056	-.0025	.3553
Diploma	G.C.E A/L	.08442	.04932	.525	-.0570	.2258
	Graduate	-.09800	.05529	.485	-.2563	.0603
	Post Graduate	-.02157	.07808	1.000	-.2468	.2037
	Below G.C.E O/L	.28815[*]	.07265	.001	.0793	.4970
	G.C.E O/L	.27442[*]	.05669	.000	.1123	.4366
Graduate	G.C.E A/L	.18242[*]	.04170	.000	.0632	.3016
	Diploma	.09800	.05529	.485	-.0603	.2563
	Post Graduate	.07643	.07350	.904	-.1361	.2890
	Below G.C.E O/L	.21172	.09120	.190	-.0506	.4741
	G.C.E O/L	.19799	.07907	.129	-.0299	.4259
Post Graduate	G.C.E A/L	.10599	.06912	.644	-.0946	.3066
	Diploma	.02157	.07808	1.000	-.2037	.2468
	Graduate	-.07643	.07350	.904	-.2890	.1361

*. The mean difference is significant at the 0.05 level.

The results of the Games-Howell post hoc test of multiple comparisons indicates that the investment performances of Graduates group were significantly different from the investor groups with the educational qualification of Below G.C.E O/L, G.C.E O/L and G.C.E A/L. The mean differences between the Graduates group and the groups of Below G.C.E O/L, G.C.E O/L and G.C.E A/L are 0.28815, 0.27442 and 0.18242 respectively and these mean difference are significant at the 0.05 level. Thus it can be concluded that there is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their educational qualification.

7.5 Occupation and Investment Performance

The respondents of the study are classified in to four groups based on their occupation and the groups are Self Employed, Private Sector Employees, State Sector Employees and Retired. A comparison of investment performances of the household investors based on occupation were carried out by using one way ANOVA test and the group statistics for occupation wise investment performance is shown in Table 16.

State sector employees exhibits the highest level of investment performance with a mean value of 3.4855(S.D = 0.6114) whereas the lowest level of investment performance was found in the case of retired household investors with a mean value of 3.1702 (S.D = 0.7751).

Table 16. Group Statistics of Occupation Wise Investment Performance

Occupation	N	Mean	Std. Deviation	Std. Error Mean	Skewness	Std. Error	Kurtosis	Std. Error
Self Employed	591	3.3860	.72595	.02986	-0.283	0.101	-0.741	0.201
Private Sector Employees	487	3.4556	.65488	.02968	-0.445	0.111	-0.066	0.221
State Sector Employees	638	3.4855	.61136	.02420	-0.445	0.097	0.029	0.193
Retired	94	3.1702	.77508	.07994	0.064	0.249	-0.732	0.493

The results of one way ANOVA test between the different groups of respondents based on occupation and investment performance is shown in Table 17 and it reveals a significant F statistic of 7.231(p<0.05). The significant F value implies the significant differences in the investment performance of household investors based on their occupation.

Table 17. ANOVA: Occupation and Investment Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.769	3	3.256	7.231	.000
Within Groups	813.314	1806	.450		
Total	823.083	1809			

The fulfillment of the assumptions of the test was examined and found that the assumption of Homogeneity of Variances was violated since the result of the test of homogeneity of variances indicated a significant (p<0.05) Levene Statistic, which is exhibited in Table 18.

Table 18. Test of Homogeneity of Variances: Occupation and Investment Performance

Levene Statistic	df1	df2	Sig.
13.779	3	1806	.000

In this stage since the assumption of homogeneity of variances was violated, it is necessary to use the adjusted F test of Welch statistic and Brown-Forsythe statistic and Table 19 shows the results of robust tests of equality of means, which reveals significant (p<0.05) Welch and Brown-Forsythe statistics.

Table 19. Robust Tests of Equality of Means: Occupation and Investment Performance

	Statistic[a]	df1	df2	Sig.
Welch	6.132	3	401.034	.000
Brown-Forsythe	6.601	3	548.158	.000
a. Asymptotically F distributed.				

Based on the results of robust tests of equality of means, in order to compare groups the Games-Howell post hoc test was conducted and the results of the test are shown in Table 20.

Table 20. Games-Howell post hoc test of Multiple Comparisons : Occupation and Investment Performance

Dependent Variable: Investment Performance						
(I) Occupation	(J) Occupation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Self Employed	Private Sector Employees	-.06960	.04210	.349	-.1779	.0387
	State Sector Employees	-.09950[*]	.03844	.048	-.1984	-.0006
	Retired	.21579	.08534	.061	-.0065	.4381
Private Sector Employees	Self Employed	.06960	.04210	.349	-.0387	.1779
	State Sector Employees	-.02991	.03829	.863	-.1285	.0686
	Retired	.28538[*]	.08527	.006	.0632	.5076

State Sector Employees	Self Employed	.09950*	.03844	.048	.0006	.1984
	Private Sector Employees	.02991	.03829	.863	-.0686	.1285
	Retired	.31529*	.08353	.001	.0974	.5332
Retired	Self Employed	-.21579	.08534	.061	-.4381	.0065
	Private Sector Employees	-.28538*	.08527	.006	-.5076	-.0632
	State Sector Employees	-.31529*	.08353	.001	-.5332	-.0974
*. The mean difference is significant at the 0.05 level.						

According to the results of the Games-Howell post hoc test of multiple comparisons for significance, the investment performance of Retired group of investors were significantly different from the groups of Private Sector Employees and State Sector Employees with the mean differences of -0.28538 and -0.31529 respectively. In addition, investment performance of Self Employed group were also significantly different from the State Sector Employees with the mean differences of -0.09950. Thus, occupation of investors influences investment performance.

7.6 Income and Investment Performance

The investment performances of the household investors with different level of income were compared with the support of One way ANOVA test. On the basis of their monthly income household investors were classified in to five groups. Table 21shows the group statistics of income wise investment performances of the household investors. Investors group with a monthly income of more than 55000/= show the highest level of investment performances with a mean value of 3.6903 (S.D = 0.6791) and investors group with a monthly income of Less than 25000/= show the lowest level of investment performances with a mean value of 3.1162 (S.D = 0.6912).

Table 21. Group Statistics of Income Wise Investment Performance

Monthly Income	N	Mean	Std. Deviation	Std. Error Mean	Skewness	Std. Error	Kurtosis	Std. Error
Less than 25000/=	242	3.1162	.69124	.04443	0.173	0.156	-0.874	0.312
25000/= to 35000/=	542	3.3838	.67824	.02913	-0.216	0.105	-0.249	0.209
35000/= to 45000/=	551	3.4732	.61660	.02627	-0.505	0.104	0.552	0.208
45000/= to 55000/=	297	3.5253	.65647	.03809	-0.830	0.141	0.048	0.282
More than 55000/=	178	3.6903	.67911	.05090	-0.732	0.182	-0.173	0.362

Table 22 exhibits the results of one way ANOVA test between the different income based groups of household investors and investment performance. According to the results, F statistic is 23.515 and p<0.05 and a significant F value implies the significant differences in the investment performance of household investors based on their income.

Table 22. ANOVA: Income and Investment Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	40.768	4	10.192	23.515	.000
Within Groups	782.315	1805	.433		
Total	823.083	1809			

An examination on the fulfillment of the assumptions of the test indicates that the assumption of Homogeneity of Variances was violated. The results of the test of homogeneity of variances are shown in Table 23 and it reveals that the Levene Statistic is significant since the p value is less than 0.05.

Table 23. Test of Homogeneity of Variances: Income and Investment Performance

Test of Homogeneity of Variances			
Investment Performance			
Levene Statistic	df1	df2	Sig.
5.517	4	1805	.000

The violation of the assumption of homogeneity of variance necessitated the use of adjusted F test of Welch statistic and Brown-Forsythe statistic. The results of robust tests of equality of means are shown in Table 24 and Welch and Brown-Forsythe statistics are significant since p<0.05.

Table 24. Robust Tests of Equality of Means: Income and Investment Performance

	Statistic[a]	df1	df2	Sig.
Welch	21.796	4	668.073	.000
Brown-Forsythe	22.946	4	1290.864	.000
a. Asymptotically F distributed.				

Since the Welch and Brown-Forsythe statistics are significant, the Games-Howell post hoc test was conducted in order to compare groups. Table 25 shows the results of the Games-Howell post hoc test.

Table 25. Games-Howell post hoc test of Multiple Comparisons: Income and Investment Performance

					95% Confidence Interval	
(I) Monthly Income	(J) Monthly Income	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Less than 25000/=	25000/= to 35000/=	-.26754*	.05313	.000	-.4131	-.1220
	35000/= to 45000/=	-.35701*	.05162	.000	-.4984	-.2156
	45000/= to 55000/=	-.40903*	.05853	.000	-.5693	-.2488
	More than 55000/=	-.57409*	.06757	.000	-.7593	-.3889
25000/= to 35000/=	Less than 25000/=	.26754*	.05313	.000	.1220	.4131
	35000/= to 45000/=	-.08947	.03923	.152	-.1966	.0177
	45000/= to 55000/=	-.14149*	.04796	.027	-.2727	-.0103
	More than 55000/=	-.30655*	.05865	.000	-.4675	-.1456
35000/= to 45000/=	Less than 25000/=	.35701*	.05162	.000	.2156	.4984
	25000/= to 35000/=	.08947	.03923	.152	-.0177	.1966
	45000/= to 55000/=	-.05202	.04627	.794	-.1786	.0746
	More than 55000/=	-.21708*	.05728	.002	-.3744	-.0598
45000/= to 55000/=	Less than 25000/=	.40903*	.05853	.000	.2488	.5693
	25000/= to 35000/=	.14149*	.04796	.027	.0103	.2727
	35000/= to 45000/=	.05202	.04627	.794	-.0746	.1786
	More than 55000/=	-.16506	.06358	.073	-.3394	.0092
More than 55000/=	Less than 25000/=	.57409*	.06757	.000	.3889	.7593
	25000/= to 35000/=	.30655*	.05865	.000	.1456	.4675
	35000/= to 45000/=	.21708*	.05728	.002	.0598	.3744
	45000/= to 55000/=	.16506	.06358	.073	-.0092	.3394

*. The mean difference is significant at the 0.05 level.

The Games-Howell post hoc test of multiple comparisons for significance indicates that the investment performances of household investors with the monthly income of Less than 25000/= were significantly different from investors in the entire other income groups. Likewise the investment performances of investors with the monthly income of 25000/= to 35000/= were also significantly different from investors in the entire other income groups except the income group of 35000/= to 45000/=. Further, the investment performances of

investors with the monthly income of More than 55000/= were also significantly different from investors in the entire other income groups except the income group of 45000/= to 55000/=. Therefore it can be concluded that there is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their income.

8. Hypothesis Testing

Hypothesis	Decision
H1: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their gender.	Accepted
H2:There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their marital status.	Rejected
H3: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their age.	Accepted
H4: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their educational qualification.	Accepted
H5: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their occupation.	Accepted
H6: There is a significant difference in the investment performance of individual household investors in the Northern Province of Sri Lanka based on their income.	Accepted

9. Discussion on Findings

According to the results of the independent t test between gender and investment performance, it was found that there is a significant difference in the investment performance of male and female household investors. Male investors exhibit better performance than female investors. Generally male investors tend to take more risk than females and it resulted in higher return. In addition, female investors in the study region highly rely on traditional and low yield investment options such as bank deposits and fail to participate in securities markets. These may be the reasons behind the lower performance of female investors.

The results of the one way ANOVA test between age and investment performance indicate that age has an influence on investment performance of household investors. Younger investors tend to take more risk than elders. This difference in risk taking behaviour is the reason for differences in investment performance based on age. Particularly, investor in the

age group of more than 60 years tend to take very lower level of risk because most of them have fulfilled their life based financial obligations such as education and marriage of their sons and daughters and in this stage they provide more emphasis for safety of their money rather than earning higher return.

It was also found that there is a significant difference in the investment performance of household investors based on their educational qualification. An increase in the level of education of investors results in increased knowledge and awareness in the area investment. It helps them to achieve higher performance.

According to the results of the study, occupation influences the investment performance of household investors. Since retired investor group don't engage in serious investment activities, their investment performance is at lower level. In addition, higher level of job security for the state Sector Employees supports them to take more risk in investment activities in order to earn more return.

It was also observed that there is a significant difference in the investment performance of household investors based on their income. Increased income supports investors to increase their risk taking ability and to improve their performance.

10. Recommendations

It is recommended that in order to improve the knowledge and awareness of female investors and investors with lower level of education proper training and awareness programmes in the field of investment should be conducted. In addition, financial services industry of the Northern Province of Sri Lanka should be restructured. Finally, financial institutions should design new financial products and services which are particularly appropriate to female and elder investors.

11. Conclusion

This study has made an attempt to identify the influence of demographic factors on the investment performance of household investors in the Northern Province of Sri Lanka and found that gender, age, educational qualification, occupation and income of investors influence the investment performance whereas marital status of investors has no influence on investment performance. Future studies in this area may consider the influence of the other demographic factors such as ethnicity and religion on investment performance.

References

Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly journal of Economics,* 261-292. https://doi.org/10.1162/003355301556400

Bliss, R. T., & Potter, M. E. (2002). Mutual fund managers: Does gender matter?. *The Journal of Business and Economic Studies, 8*(1), 1.

Feibel, B. J. (2003) *Investment Performance Measurement*. John Wiley & Sons, Inc., Hoboken, New Jersey.

Feng, L., & Seasholes, M. S. (2008). Individual investors and gender similarities in an emerging stock market. *Pacific-Basin Finance Journal, 16*(1), 44-60. https://doi.org/10.1016/j.pacfin.2007.04.003

Fischer, D. E., & Jordan, R. J. (2002). *Security Analysis and Portfolio Management*. Printice-Hall of India Pvt Limited, New Delhi.

Francis, J. Clark. (1991). *Investments Analysis and Management* (5th ed.). Mc Graw-Hill Inc., USA.

Kevin, S. (2006), *Portfolio Management* (Second ed.). Prentice Hall of India Private Limited, New Delhi, 15.

Lewellen, W. G., Lease, R. C., & Schlarbaum, G. G. (1979). Investment performance and investor behavior. *Journal of Financial and Quantitative Analysis, 14*(01), 29-57. https://doi.org/10.2307/2330654

Ozerol, H., Camgoz, S. M., Karan, M. B., & Ergeneli, A. (2011). Determining the performance of individual investors: the predictive roles of demographic variables and trading strategies. *International Journal of Business and Social Science*, *2*(18), 86-92.

Pandey, I. M. (2008), *Financial Management* (9th ed.). Vikas Publishing House. India.

Prasanna, C. (2009). *Investment Analysis and Portfolio Management* (3rd ed.). Tata Mcgraw Hill Education Pvt, New Delhi.

Shu, P. G., Chiu, S. B., Chen, H. C., & Yeh, Y. H. (2004). Does trading improve individual investor performance?. *Review of Quantitative Finance and Accounting, 22*(3), 199-217. https://doi.org/10.1023/B:REQU.0000025760.91840.8d

Talpsepp, T. (2013). Does Gender and Age Affect Investor Performance and the Disposition Effect?. *Research in Economics and Business: Central and Eastern Europe*, *2*(1), 76-93.