Relative Income and Household Saving Behavior

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Abstract

The purpose of this study is to see the relationship between relative income and urban household saving performance. For the purpose of this study primary data from 354 respondents is used. Descriptive statistics is used for analysis purpose.   The finding of the study indicates that, most of the households' financial situation is similar with their references. Most of the households save a little portion of their periodic income although they don't give any particular attention. According to the cross tabulation result, as family's relative income becomes better than their reference, their propensity to save is will be improved. As per the result of the one way ANOVA, there is no significant mean difference among households economic situation is worse, little worse, similar, better or best. The overall Kruskal-Wallis H test result and the post hoc test among worse and better, worse and best, little worse and better, little worse and best, similar and better, and similar and best economic situation under their first most important references indicates the presence of significant differences. Likewise, there is a significant mean difference among little worse and better, little worse and best, similar and better, and similar and best economic situation relative to their reference second most important reference group but not among worse and better, and worse and best economic situation. Lastly, it is recommended that future researchers to see the impact of economic condition on saving amount using a regression analysis and by including rural households.

Key words: Bahir Dar, Ethiopia, Households, Perceived position, Saving Behavior

1.1 Introduction

Saving is undeniably considered as a strategic variable in the theory of economic growth. Saving is one of the most important determinant variables of economic growth. It is extensively regarded as a key factor for promoting long-run economic growth. There is a positive relationship between saving/investment and economic growth as an established fact. As a result savings and investment have taken as vital drivers in taking the economic growth process advance through accumulating capital (Teshome et al. 2013, Aghion et al. 2006, Ahmad et al. 2006 and Mehta 2013). So, saving has not only been described as a key financial and economic issue but also represent a fundamental driving force of economic growth and development at large (Mumin, Razak and Domanban 2013).

However, the saving/investment and growth relationship is not conclusive. The precise relationship between savings and growth is still a subject of debate (Carpenter and Jensen 2002). Some empirical evidences suggests that the strong correlation between saving and economic growth largely because high growth leads to high savings, not the other way around (Carroll 2000). On the other evidences noted as it is difficult to reconcile with standard growth models, since ahead- looking consumers with standard utility should save less in a fast-growing economy (Carroll 2000). This is due to the fact that they know they will be richer in the future than they are today. If admitted and assume that growth drives saving, then

the principal focus of government policies will be directly on promoting growth like technological innovation or further development of human capital than saving.

There are more than enough reasons to promote saving especially in developing countries. Economic history suggests that countries that were able to accumulate high levels of domestic investment largely financed by domestic savings achieved faster rates of economic growth and development (Mehta 2013). Long run economic growth of a country depends on persistent investment which is financed by domestic savings or through foreign capital inflows (Khan, Gill and Haneef 2013). The experiences of the high-performing Asian economies as well is a live witness for sustainable high rates of growth, substantial physical capital accumulation is required (Elbadawi and Mwega 2000). Similarly, the fundamental internal limitation developing countries faced in funding their developmental plans is their failure to accumulate enough domestic savings (Chhoedup 2013). The financial infrastructure in general, the credit and insurance markets in particular in developing countries are very limited and the social coverage as well is fragile. Thus, a high level of savings helps the economy to progress on a continuous growth path since investment is mainly financed out of savings (Shadid 2011) - domestic savings helps an economy in developing productive investments. Therefore, developing countries policy should focus on promoting savings in order to accumulate capital. Promoting saving in those developing and underdeveloped countries is a question of survival as it is a primary instrument to induce economic growth (Mehta 2013).

Private saving in Sub-Saharan Africa has a declining trend (from more than 11 per cent of disposable income in the 1970s to less than 8 per cent in the 1980s and only partially recovered (to less than 9 percent) in the 1990s). Moreover, saving in Sub-Saharan Africa was not only lower relative to other regions but also less stable. Yet another worrisome feature of saving and investment in Sub-Saharan Africa is the region's heavy dependence on overseas saving, mostly foreign development support, to finance the gap between investment and saving (Elbadawi and Mwega 2000).

Ethiopia, as part of Sub Saharan Countries, is experiencing a severe domestic resource gap (Abay 2011). As can be observed from the graph (Fig. 1), the ratio of domestic savings to gross domestic product (GDP) over time (from 1981 to 2013) indicates the poor performance saving in Ethiopia. Besides it experiences a decreasing trend over many periods. For example, during the period of 1986-1990 the average domestic saving to GDP was 17%, in the period of 1991-1995 failed to 13%. In the 1996-2000 too failed 11%. Yet again it decreases from 15% (2001-2006) to 10% (2006-2010).

Figure 1: Average Domestic Saving to GDP of Ethiopia across Time
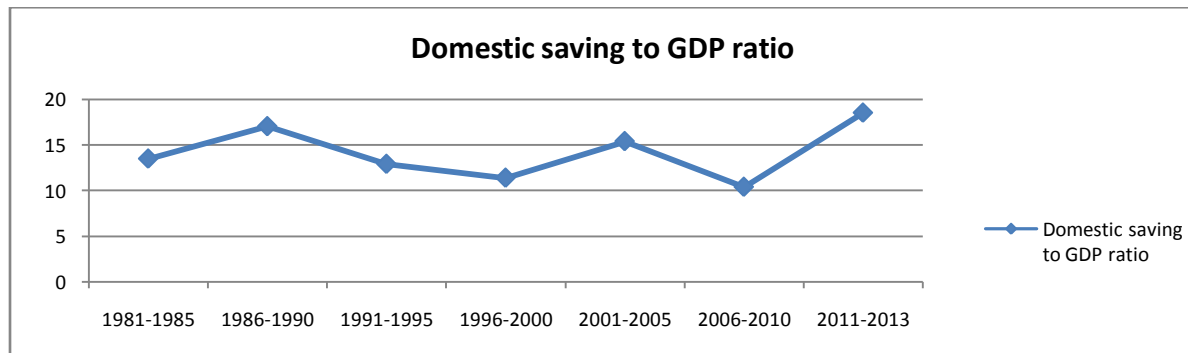
Source: The World Bank

With respect to the growth of domestic savings rate, Ethiopian savings rate does not record a significant change for the last 33 years (1981-2013) relative to other countries in the region. It has grown only from 13.48 (in 1981-1986) to 14.16 (in 2011-2013). However, if we see Niger it has grown from 3.98 to 16.7, Burkina Faso from -3.98 to 20.8, Chad from -5.38 to 25.57 and Mauritania from -1.98 to 29.2 from the period 1981-1986 to the period of 2011-2013 (see table 1 below).

Table 1: Average Domestic Saving to GDP across Periods

Period/ country	Ethiopia	Angola	Burkina Faso	Botswana	Chad	Mauritania	Gabon	Niger	Morocco	Nigeria
1981-1985	13.48	0	-3.98	28.76	-5.38	-1.98	53.56	3.98	18.94	24.42
1986-1990	17.04	0	3.26	44.98	-10.2	9.84	30.18	27.02	21.16	27.02
1991-1995	12.9	12.08	10.48	36.22	-3.82	25.98	40.82	2.54	19.24	23.72
1996-2000	11.38	30.88	7.34	38.08	5.44	11.2	50.74	2.88	20.8	17.8
2001-2005	15.4	34.33	20.8	28.97	25.57	29.2	56.37	16.7	21.53	26.43
2006-2010	10.38	38.68	10.02	33.2	25.24	18.18	55.9	20.46	24.4	20.46
2011-2013	18.53	34.33	20.8	28.97	25.57	29.2	56.37	16.7	21.53	26.43
Average	14.16	30.06	9.82	34.19	8.92	17.37	49.13	12.9	21.1	23.75

Source: The World Bank

This indicates that Ethiopia has lower saving performance relative to the aforementioned Sub Saharan Africa countries.

Due to this dismal performance of domestic saving mobilization in Ethiopia, there is a huge gap between saving and investment. Therefore, this particular study has investigated the determinants of urban household saving behavior of Bahir Dar city of Ethiopia. The rest of the paper organized as follows: section two literature reviews, section three data and methodology, section four analysis and section five concluding remarks.

1.2 Literature Review

The relative income hypothesis of James Duesenberry (1949) is based on two hypotheses: past peak income hypothesis and relative income hypothesis. Duesenberry hypothesized is that the present consumption of the families is influenced not just merely by present levels of absolute and relative income, but also by levels of past peak income/consumption attained. According to this hypothesis consumption spending of families is motivated by the habitual behavioral pattern. At a period of propensity, consumption will increase and gradually adjust itself to a higher level. Once people attain a particular peak income level and become accustomed to that standard of living, it will be difficult for a family to reduce that level of consumption once attained. As income decreases consumption falls but proportionately less than the decrease in income as the consumer dissaves to maintain consumption. Thus at the time of depression consumption rises as a fraction of income while in prosperity consumption does increases slowly as a fraction of income.

In his relative income hypothesis (which is the focus of this study), consumption is not depends on absolute income but on the relative income – income relative to the income of every individual in the society in which an individual lives. Every individual behavior is not independent but interdependent of the behavior of every other individual. According to Duesenberry (1949), real understanding of the consumer behavior must begin with a full recognition of the social character of consumption patterns. That means individuals attitude towards consumption and saving is influenced largely by its income in relation to others. A rich person will have a lower average propensity to consume (higher average propensity to save) as he needs a smaller portion of its income to maintain its consumption pattern. On the other side a relatively poor person will have higher average propensity to consume (lower average propensity to save) as it tries to maintain the consumption standards of its neighbors' or associates. There is a tendency on the part of the people to imitate the consumption standards maintained by their confreres. That means when households care about their consumption relative to others, individual saving rates decrease with their relative position. The percentage of income consumed by an individual is dependent on its percentile position in the income distribution. Thus, an individual is less concerned with absolute level of consumption rather by relative levels.

Empirical literatures in relative income hypothesis showed inconsistent results. Alvarez-Cuadrado and Vilalta (2012), in their study of Income inequality and saving in the United States (US), provide evidence for the positive relation between relative income and savings. When US households care about their consumption relative to others, individual saving rates decrease with reference income. Similarly the result shown in the study of Gruber (2011), households in China who earns more than the average in their locality save a larger fraction of their income. That is, households with the same income are likely to consume more in high income locations. Fan and Abdel-Ghany (2004) as well investigated the Patterns of Spending Behavior and the Relative Position in the Income Distribution. The outcome approved that relative income is the most important determinant of consumers' spending/saving decisions.
Drechsel-Grau and Schmid (2013) also established that the changes in the saving rate of households are not only driven from changes in own disposable income but are also influenced by the income and/or the consumption of richer households. Further in different studies of income inequality and consumption (like Krueger and Perri (2005), Meyer and Sulliva (2009), Brzozowski et al (2009), Jeppelli and Pistaferri (2009), and Beech et al (2014)) found that income inequality is higher and has grown faster than consumption inequality. Reference group influence on consumption may be one of the reasons for the result.

On the contrary Nyhus (2002) provides no relationship evidence between perceived relative economic situation and financial savings within the higher group although the relationship in the low income and

middle-income group is significant. Jin, Li and Wu (Undated) to in their study of Income Inequality, Status Seeking, Consumption and Saving Behavior in China, they found that the increase in income inequality among households' reference group significantly discourages households' consumption (encourages saving) with the exception of education expenditure after controlling families' income. Moreover, this effect becomes stronger when the family income declines or when the head of the family becomes younger and younger. Based on the existing theoretical and empirical literatures, the purpose of the current study is examining the relationship between relative income and household savings behavior.

1.3 Data and Method of Analysis

The data for the purpose of this study is collected from 354 households using standard questionnaire. Respondents were asked to complete the questionnaire that consist their saving status, saving amount and their financial situation relative to their first and second most important group. This enables to have both categorical and continuous data for the independent variable 'saving behavior'.

The data is analysed using descriptive statistics which helps describe, show or summarize data in a meaningful way although do not allow to make conclusions beyond the data analysed. In addition, one way Analysis of variance is used to determine significance differences among the means of the variables.

1.4 Results and Discussions

From 354 sample respondents almost 80 per cent (mode) are male household head and majority of them (46.9%) are young (median), they are between 25 and 34 ages, and 33.9 per cent of them are between the age of 35 and 44. Surprisingly, there is no a single individual above the age of 65 years who participated in the study as a matter of chance. Of the total respondents 69.5 per cent are married (mode).

Regarding their level of education, 55.9 per cent (median) of them are first degree holders and 24.6 % obtain their university second degree. With respect to their occupation (mode), 52 per cent of the participants are government employees (31.4% in civil services and 20.6% in government development organizations/agencies), 17.8 per cent in nongovernmental organizations (NGOs) and16.9 per cent works in private organizations, and while12.7 per cent run their own businesses.

Concerning the total annual income of households, 22.6 per cent (median) of the households' annual income is above Br.100, 000.00 (which is equivalent to $5,100[1]) and 12.4 per cent are between ETB 40, 000.00 and 50, 000.00, while 3.7 per cent do not know their annual income.

Participants in this study were asked to compare their financial situation with their first and second most important group. Most (Median) households have similar financial situation with their first (42.7%) and second (46%) reference group. Of course, considerable number of households in the study is in a better/best situation from their first (39%) as well as second (35.3%) reference group.

1.4.1 Saving Status and Perceived Position Relation

With respect to the present situation of their households regarding saving, the majority of the respondents (61.9%) described as they save a little from their annual income. While 22 per cent of them answered as they 'manage to make ends meet on their income' – meaning usually all their income is spent (see fig. 1 below).

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[1] As of July 2014 exchange rate using online currency converter 1USD ≅ 0.051 ETB

Figure 2: Saving status of Households
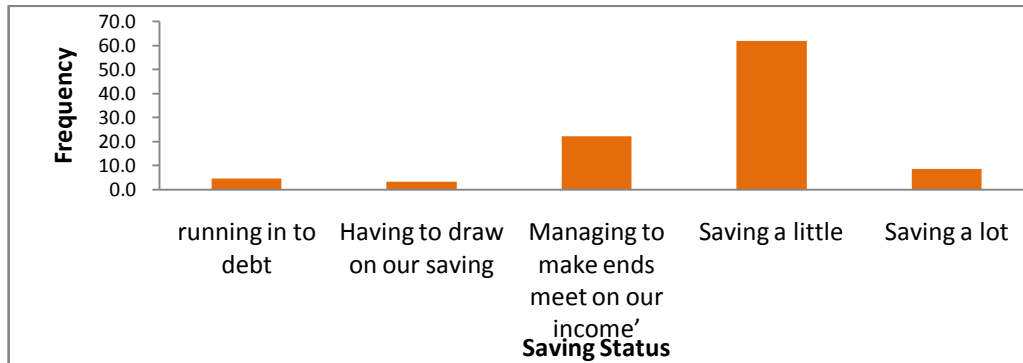
Source: own data

Concerning ways of household saving money, 33.1 per cent answered as they save whatever is left by the end of the period without paying any particular attention - they don't have saving plan. They do save only when their periodic consumption is less than their income of the same period. Of course, significant numbers of household (35%) save regularly by putting money aside every period – we can say they are committed to make savings. When we come to the actual saving amount, 17.2 per cent do not give response and 21.5 per cent respond as they have zero savings. The maximum amount of saving is ETB 750,000.00 and the mean saving amount is ETB 32,287.20.

However, their response towards their saving amount is not consistent with their saving status. The number of households who answered as they save little and lot is 249 but the number of households who notify their actual amount of saving is 217. Additionally, when we compute the difference in income and consumption and compare with their actual saving, there is a significant variation. Thus, it is difficult to take as it is their actual saving amount. Actually this is expected as the community is not transparent due to different reasons like fear of tax if they tell actual saving amount.

The main theme of this study is to see the relationship between households' perceived position in their reference group and their saving status. Thus, to see this, we have run a cross tabulation between the two. As can be depicted from table 2 below, when households financial situation relative to their first most important group improved, their tendency to save is also improved. For instance from the households whose financial condition is worse than their reference group only half do save a little but no one do save a lot. Whereas from those whose status is better/best relatively, 84.78 per cent answered as they made saving periodically. Even most (54.3%) of the households with a similar financial position do save part of their income.

Table 2: Cross tabulation between Saving Status and First Most Important Group

		Saving status					
		running in to debt	Having to draw on our saving	Managing to make ends meet on our income'	Saving a little	Saving a lot	Total
Worse	Count % within first most impo	2 16.7%	2 16.7%	2 16.7%	6 50.0%	0 0.0%	12 100.0%
	% within Saving status % of Total	12.5% .6%	18.2% .6%	2.6% .6%	2.7% 1.7%	0.0% 0.0%	3.4% 3.4%
little worse	Count % within first most impo	4 7.5%	0 0.0%	11 20.8%	37 69.8%	1 1.9%	53 100.0%
	% within Saving status % of Total	25.0% 1.1%	0.0% 0.0%	14.1% 3.1%	16.9% 10.5%	3.3% .3%	15.0% 15.0%
Similar	Count % within first most impo	8 5.3%	8 5.3%	47 31.1%	82 54.3%	6 4.0%	151 100.0%
	% within Saving status % of Total	50.0% 2.3%	72.7% 2.3%	60.3% 13.3%	37.4% 23.2%	20.0% 1.7%	42.7% 42.7%
Better	Count % within first most impo	1 .9%	1 .9%	15 13.0%	82 71.3%	16 13.9%	115 100.0%
	% within Saving status % of Total	6.3% .3%	9.1% .3%	19.2% 4.2%	37.4% 23.2%	53.3% 4.5%	32.5% 32.5%
Best	Count % within first most impo	1 4.3%	0 0.0%	3 13.0%	12 52.2%	7 30.4%	23 100.0%
	% within Saving status % of Total	6.3% .3%	0.0% 0.0%	3.8% .8%	5.5% 3.4%	23.3% 2.0%	6.5% 6.5%
Total	Count % within first most impo	16 4.5%	11 3.1%	78 22.0%	219 61.9%	30 8.5%	354 100%
	% within Saving status % of Total	100.0% 4.5%	100.0% 3.1%	100.0% 22.0%	100.0% 61.9%	100.0% 8.5%	100.0% 100.0%

Source: own data

Similarly, cross tabulation has made between perceived positions of households with their second most important group and saving status to see simply how they are related. The result indicates that as we move from worse to best relatively (see table 3 below), the proportion savings a lot is increasing (from 0 in worse financial situation to 30% best financial situation). Likewise, 80.8 per cent of the respondents in a better/best condition have periodic savings.

Table 3: Cross Tabulation between Saving Status and Second Most Important Reference Group

		Saving status					
		running in to debt	Having to draw on our saving	Managing to make ends meet on our income'	Saving a little	Saving a lot	Total
Worse	Count	2	1	0	5	0	8
	% within second most important	25.0%	12.5%	0.0%	62.5%	0.0%	100.0%
	% within Saving status	12.5%	9.1%	0.0%	2.3%	0.0%	2.3%
	% of Total	.6%	.3%	0.0%	1.4%	0.0%	2.3%
little worse	Count	5	1	14	33	2	55
	% within second most important	9.1%	1.8%	25.5%	60.0%	3.6%	100.0%
	% within Saving status	1.4%	.3%	4.0%	9.4%	.6%	15.7%
	% of Total	31.3%	9.1%	18.7%	15.1%	6.7%	15.7%
Similar	Count	6	5	44	102	6	163
	% within second most important	3.7%	3.1%	27.0%	62.6%	3.7%	100.0%
	% within Saving status	37.5%	45.5%	58.7%	46.6%	20.0%	46.4%
	% of Total	1.7%	1.4%	12.5%	29.1%	1.7%	46.4%
Better	Count	3	3	13	70	16	105
	% within second most important	2.9%	2.9%	12.4%	66.7%	15.2%	100.0%
	% within Saving status	18.8%	27.3%	17.3%	32.0%	53.3%	29.9%
	% of Total	.9%	.9%	3.7%	19.9%	4.6%	29.9%
Best	Count	0	1	4	9	6	20
	% within second most important	0.0%	5.0%	20.0%	45.0%	30.0%	100.0%
	% within Saving status	0.0%	9.1%	5.3%	4.1%	20.0%	5.7%
	% of Total	0.0%	.3%	1.1%	2.6%	1.7%	5.7%
Total	Count	16	11	75	219	30	351
	% within second most important	4.6%	3.1%	21.4%	62.4%	8.5%	100.0%
	% within Saving status	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	4.6%	3.1%	21.4%	62.4%	8.5%	100.0%

Source: own data

Most of the households (66.3%) whose financial situation is similar to that of their reference group are in a saving status (either they save a little or a lot). From the result we come to understand that households have similar saving pattern relative to their first as well as second most important group. Thus our result supports the well established hypothesis that consumption is not depends only on absolute income but on income relative to the income of every individual in the society in which an individual lives.

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1.4.2 The one-way Analysis of Variance (ANOVA)

Further, the researchers run one way ANOVA in order to determine the presence of any significant differences among the means of economic conditions labelled as worse, little worse, similar, better and best relative to their first most important groups taking the independent variable of saving ratio (see table 4 below).

Table 4: the P-Value of One way ANOVA for First Most Important Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.153	4	.288	.792	.531
Within Groups	126.989	349	.364		
Total	128.142	353			

Similarly, as indicated in table 5 below, we run one way ANOVA for second most important economic condition to check any significant differences among means. Unfortunately, in both cases the calculated p-value is higher than α value of 0.05. As a result the researchers have no enough evidence to reject the null hypothesis that there is no significant mean difference among groups.

Table 5: the P-Value of One way ANOVA for Second Most Important Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.479	4	.370	1.019	.397
Within Groups	126.663	349	.363		
Total	128.142	353			

Therefore, it is not necessary to proceed to post hoc tests. Post hoc tests are to be run to confirm where the differences occurred between groups- meaning they should only be run when you have an overall significant difference in group means.

However, the absence of significant differences between groups may be from the nature of the data for saving ratio. We compute saving ratio using family annual income and family consumption expenditure. As we determine the ratio taking the median income and median expenditure there are many nil and negative ratios. We forced to take these saving ratios data instead of the ordered data we have as one way ANOVA needs an interval or ratio scale dependent variable. To test whether there are an overall significant mean difference between groups using ordered dependent variable (i.e. saving status), we run a non parametric test called Kruskal-Wallis H Test.

Kruskal-Wallis H Test

The Kruskal-Wallis H test (sometimes also called the "one-way ANOVA on ranks") is a rank-based nonparametric test that can be used to determine if there is a statistically significant mean difference

between two or more groups of an independent variable on a continuous or ordinal dependent variable. It allows the comparison of more than two independent groups. Therefore, taking the saving status they categorize their family saving situation as 'Running into debt', 'Having to draw on our saving', 'Managing to make ends meet on our income', 'Saving a little' and 'Saving a lot' ordered dependent variable we run a Kruskal-Wallis H test with ordered (labelled as worse, little worse, similar, better and best) independent variable of perceived position in their reference group.

Table 5: First most important group Test Statistics[a,b]

	Saving status
Chi-Square	38.037
Df	4
Asymp. Sig.	.000

a. Kruskal Wallis Test
b. Grouping Variable: first most important group

Table 6: Second most important group Test Statistics[a,b]

	Saving status
Chi-Square	19.353
df	4
Asymp. Sig.	.001

a. Kruskal Wallis Test
b. Grouping Variable: second most important group

Unlike the one way ANOVA, the overall Kruskal-Wallis H test results of the analysis indicates that there is a significant mean difference among groups (see table 5 and 6 above). Meaning the p-value in their first and second most important reference group is 0.000 and 0.001 respectively. Thus, we have enough evidence not to accept the null hypothesis. Because the overall test is significant, there is a need to apply post hoc test or pairwise comparisons among the groups.

Pairwise Comparison
Conducting pairwise comparisons after obtaining a significant kruskal-wallis H test in spss is the measure whether or not each pair of independent variable conditions has a mean difference on the dependent variable. The pariwise comparisons are conducted using the Mann-Whitney U test to decide precisely how they differ.

Following the tests conducted to evaluate pairwise differences among the five groups, perceived position does seem to affect saving status, but only in the following cases. The result indicates the presence of significant difference between worse and better, worse and best, between little worse and better, little worse and best, similar and better, and similar and best economic situation groups with a p-value of 0.001, 0.014, 0.003, 0.011, 0.000 and 0.001 respectively, under their first most important references. While between the rests of the groups there is no significant difference. Under their second most references in financial situation, there is a significant differences between little worse and better, little worse and best, similar and better, and similar and best with a p-value of 0.002, 0.033,0.000 and 0.029, respectively. Unlike their first important references between worse and better, and worse and best there is no significant difference apart from other groups. However, there is no significant mean difference among households whose income gap is narrow (like between worse and little worse, worse and similar, and little worse and similar economic situation).

To sum up, relative economic situation affects the saving status of the households. Households in a higher (better/best) economic position relative to their reference group have a higher propensity to save. This result is in conformity with the result of Fan and Abdel-Ghany (2004), Drechsel-Grau and Schmid (2013), Krueger and Perri (2005), Meyer and Sulliva (2009), Brzozowski et al (2009), Jeppelli and Pistaferri (2009), and Beech et al (2014).

1.5 Concluding Remarks

Most of the households (80 per cent) are with male household head and the majority of them are young, they are between 25 and 34 ages. More than 80 per cent of the participants are well educated (they have minimum of first degree). Concerning their employment, majority of them are government employees. 22.6 per cent of the households' annual family income is more than ETB.100, 000.00. Regarding their financial position relative to their first and second most important group, most of them are in a similar situation. Of course, considerable number of households in the study is in a better/best situation from their first as well as second reference group.

With respect to their saving status, the majority of the respondents described as they save a little from their annual income. While 22 per cent of them answered as they 'manage to make ends meet on their income' – meaning usually all their income is spent. Significant number of household who have periodic savings answered as they save whatever is left by the end of the period without paying any particular attention - they don't have saving plan. The result of the cross tabulation between financial situation and saving status depicted as households financial situation relative to their most important group is improved, their tendency to save is also improved. Households have similar saving pattern relative to their first as well as second most important group.

The result of the one way ANOVA analysis to determine the presence of any significant differences among the means of economic conditions depicted that the calculated p-value is higher than α value of 0.05. Thus, the researchers have no enough evidence to reject the null hypothesis that there is no significant mean difference among groups. Finally, it is recommended that future researchers to see the impact of economic condition on saving amount using a regression analysis and by including rural households.

The overall Kruskal-Wallis H test result and the post hoc test among worse and better, worse and best, little worse and better, little worse and best, similar and better, and similar and best economic situation under their first most important references indicates the presence of significant differences. Likewise, there is a significant mean difference among little worse and better, little worse and best, similar and better, and similar and best economic situation relative to their reference second most important reference group but not among worse and better, and worse and best economic situation.

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