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VOLUME 15

ISSUE 11

VERSION 1.0



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE

VOLUME 15 ISSUE 11 (VER. 1.0)

OPEN ASSOCIATION OF RESEARCH SOCIETY

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE

Volume 15 Issue 11 Version 1.0 Year 2015

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Economic Impact Assessment: A Review of Literature on the Tourism Industry

By Antonio Kido-Cruz, Teresa Kido-Cruz & James Killough

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Abstract- By having a model of economic impact, it is possible to create scenarios to analyze in which sectors of the economy a demand/supply shock will result in the most benefit/loss for countries interested in promoting their tourism sector. Particularly useful in this task is the analysis of multipliers for gross domestic product, added value and employment. In developing countries, tourism plays an important role, and one would therefore expect to find corresponding studies on economic impact published in journals of high academic quality. However, upon observation of important tourism journals, it is witnessed that this is not the case for Latin America.

Keywords: *tourism industry, economic impact, multipliers.*

GJMBR - B Classification : *JEL Code : L83*



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Economic Impact Assessment: A Review of Literature on the Tourism Industry

Antonio Kido-Cruz ^α, Teresa Kido-Cruz ^ο & James Killough ^ρ

Abstract- By having a model of economic impact, it is possible to create scenarios to analyze in which sectors of the economy a demand/supply shock will result in the most benefit/loss for countries interested in promoting their tourism sector. Particularly useful in this task is the analysis of multipliers for gross domestic product, added value and employment. In developing countries, tourism plays an important role, and one would therefore expect to find corresponding studies on economic impact published in journals of high academic quality. However, upon observation of important tourism journals, it is witnessed that this is not the case for Latin America.

Keywords: *tourism industry, economic impact, multipliers.*

I. INTRODUCTION

The economic impact of tourism refers to changes in the economic contribution resulting from specific events or activities related to tourism. "These changes in the economic contribution generate three types of impacts or effects: direct effect, indirect effect and induced effect. The ability to estimate such impacts requires the development of an economic model" (Dwyer *et al.*, 2010). The main economic models used to measure these effects are: (a) the tourism satellite account (TSA); (b) the input-output model; (c) the social accounting model; and (d) the computable general equilibrium model.

a) *Brief review of the economic models of the economic contribution of tourism*

a. In the tourism satellite account, it is stated that it is an instrument designed to provide a systematic and integrated framework of information on tourism's supply and demand rather than being the most accurate method of measuring the sector's contribution to the added value or gross domestic product (GDP). In fact, the methodology developed for this is relatively simple; it considers only the direct effects. The basis for the calculation of tourism added value and tourism GDP in the tourism satellite account is the application of the ratio between the added value and the extent to which activities characteristic to tourism participate (UNWTO, 2014). It is important to mention that the TSA represents the theoretical and informative basis for the development of computable general equilibrium models.

b. Tourism spending generated by visitors to a tourist destination represents an injection of money into that tourist destination. This new injection of money leads to an increase in the direct effect as well as the indirect effect, which in turn impacts as an increase in economic activity of the tourist destination. Almost any industry is liable to be affected by a new injection of money to some extent by these direct and indirect effects. These effects are known as multiplier effects in the economy. A multiplier effect represents the number by which a given change in tourism activity generated by tourism spending is multiplied. The size of this multiplier effect will determine the impact of tourism (positive or negative) on macroeconomic aggregates such as the GDP, added value, level of income or sales, employment level and/or tax level.

The input-output multipliers are derived directly from the required coefficients of the matrix based on the input-output information tables. The added value multipliers measure the net change in the economic activity in each stage of production and represent the preferred measure, in this model, for assessing the economic contribution due to a shock on final demand (Dwyer and Forsyth, 2010).

c. The social accounting model is another means of estimating the direct and indirect effects as well as the induced effects of tourism on the economy, but this model presents a more complete economic structure since it includes inter-institutional transfers. A social accounting matrix is an extension of the input-output tables that provides an additional detail in the breakdown of consumers and factors of production, and it relates the calculation of added value with its distribution by institutional sectors (Ferri and Uriel, 2004).

d. The computable general equilibrium models (CGE) represent markets of goods, services and factors of production as well as productive sectors and demand groups (households). Each market, each sector and each household is governed by its own economic interests which are what determine its final behavior when faced with external shocks. These models generate a system of equations that characterize the production, consumption, trade and government activities within an economy. They incorporate the entire mechanism of the tourism satellite accounts, input-output model and the social

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accounting matrix, while also incorporating the mechanism to study congestion effects among activities, markets and sectors, and it is possible to estimate the direct, indirect and induced effects through multipliers (Dwyer and Forsyth P, 2010).

The general equilibrium models are not used specifically to estimate the contribution made by tourism to the GDP or to imports but rather to construct scenarios that simulate the potential impacts on the whole economic system associated with certain changes (arrivals, spending, taxation, etc.). The estimate of the impacts generated by tourism growth by use of these models shows, generally, numbers lower than those obtained through input-output models, because in the former the inter sectoral reallocation of resources and, as a consequence, displacement effects are possible.

II. MATERIAL AND METHODS

This research is basically a revision analysis which, according to some methodologists such as Luborsky (1994), involves the discovery of patterns and categories in the information used.

a) Research design

Following the procedure of Xiao and Smith (2006), research papers from three databases included in the Virtual Library of the Universidad Michoacana de San Nicolas de Hidalgo were consulted. Articles of a 10-year period (2004-2015) in the following journals were reviewed: Annals of Tourism Research (ATR), Economic Modelling (EM), Tourism Management (TM) and Journal of International Tourism Research (JITR). These journals represent a wide range in terms of their scope and reach of research in the area of tourism. The choice of this set of journals and the time frame is mainly a reflection of the practicality and availability of sources as well as the factor of academic impact. Pechlaner *et al.*,

(2004) analyzed 22 tourism and hospitality journals in terms of frequency of readers, scientific relevance, practical relevance, reputation, and importance for the academic area of study, and they found that, according to their criteria, "Annals of Tourism Research", "Journal of Tourism Research" and "Tourism Management" were the top three choices.

Title, subtitle, keywords and summary (abstract) were taken into account during the initial selection of articles. During the second stage of evaluation, the only articles considered were those explicitly containing the following terms: "tourism satellite account models", "tourism input-output models", "tourism social accounting matrix" and "computable general equilibrium models applied to tourism". Additionally, searches were performed for "direct, indirect and induced tourism effects" or "tourism multipliers". It is important to mention that economic impact models (tourism satellite account, input-output, social accounting and general equilibrium) that had as a main theme references to environment, natural resources and/or sporting events were not included in this evaluation as they were considered part of a matrix extension unlike measurements of the economic impact of tourism.

Twenty-six articles met the criteria specified in the first round of selection. On closer examination, and according to the selection criteria previously mentioned, only twenty-two articles were chosen for final analysis.

III. RESULTS

a) Coding of journals

Table 1 describes the coding of articles selected from different journals analyzed. Six articles were selected from the journal Annals of Tourism Research (ATR), three from Economic Modelling (EM), ten from Tourism Management (TM) and three from the Journal of International Tourism Research (JITR).

Table 1 : Critical reading and coding of data

| ATR | EM | TM | JITR |
|----------------------|---------------------|----------------------|------------------------------|
| 32: 367-385 (2004) | 28: 473- 481 (2011) | 25: 307-317 (2004) | 8: 347- 354 (2006) |
| 33: 1099-1120 (2006) | 32: 429-439 (2013) | 27: 292- 305 (2006) | 11: 311- 318 (2009) |
| 35: 107-126 (2007) | 41: 99- 108 (2014) | 28: 1507-1517 (2007) | DOI: 10.1002/jtr.1990 (2014) |
| 37: 136-153 (2009) | | 30: 232- 239 (2009) | |
| 38: 630-650 (2010) | | 33: 133- 142 (2012) | |
| 46:1-15 (2014) | | 33:790- 801 (2012) | |
| | | 34: 25-36 (2013) | |
| | | 40: 27- 34 (2014) | |
| | | 40: 126- 136 (2014) | |
| | | 48: 11- 20 (2015) | |

These articles were numbered sequentially in the order of volumes, page numbers and year of publication in the journal. For example, the first article selected from *Annals of Tourism Research* is found in volume 32 on pages 367 to 385 with a length of 18 pages and was published in 2009. The first article selected from the journal *Economic Modelling* is found in volume 28 on pages 473-481 with a length of 9 pages and published in the year 2011. From *Tourism Management*, the first article corresponds to volume 25 covering pages 307 to 317 (10 pages long) and published in the year 2004, and finally in the *Journal of International Tourism Research* only three items were found, of which the first corresponds to volume 8 on pages 347-354 from the year 2009.

Zhao and Brent (2007) carried out research on academic leadership in tourism research worldwide, as measured by the number of articles published in eight journals in the field of tourism between 1985 and 2004. Fifty-seven researchers were identified as the most prolific since each of them published at least 11 articles in the period under review.

Of the total of 57 leading authors on tourism, all of them were identified as having a doctoral degree level

which would indicate a very strong correlation between doctoral-level education and academic leadership. These degrees were awarded by a total of 40 universities, with special notice given to Texas A & M University from which a total of 7 prominent researchers in the field of tourism have graduated. Moreover, it is worthy of special mention that these seven researchers graduated from the same doctoral program offered by the university's Department of Recreation, Park and Tourism Sciences. The University of Western Ontario takes second place with five of the leading scholars in tourism, followed by Pennsylvania State University with 4, and four universities each providing 2, namely Clemson University, the University of Bradford, James Cook University and Monash University.

b) *Characteristics and profiles of main authors*

In order to describe and contrast some of the general characteristics of the authors with those found in the study of Zhao and Brent, the results on the characteristics and profiles of the main authors of this study are described in Table 2.

Table 2 : General characteristics of the authors

| NAME | ACADEMIC DEGREE | DISCIPLINE | UNIVERSITY DEGREE WAS OBTAINED | WHERE UNIVERSITY EMPLOYED | WHERE |
|---|-----------------|--------------------------------|---|--|-------|
| Denise Elby Konan | Ph.D. | | | | |
| Adam Blake (appears in three articles) | Ph.D | Economics & Econometrics | University Of Nottingham | Bournemouth University | |
| Stephen Pratt (appears in three articles) | Ph.D | | University Of Nottingham | The University Of The South Pacific | |
| Peter Forsyth (appears in three articles) | | | Monash University, Australia | | |
| Douglas C. Frechtling | Ph.D. | Philosophy | The George Washington University, Washington D.C. | The George Washington University, Washington D.C. | |
| Amit Sharma | Ph.D | Computer Science | Cornell University, Ithaca, NY | Iowa State University, Usa | |
| Ana Isabel Guerra | Ph.D | Business and Economic Sciences | Universidad Autónoma De Barcelona | Universidad Autónoma De Barcelona | |
| Larry Dwyer | Ph.d | | | University of New South Wales, NSW 2052, Australia | |

| | | | | |
|-----------------------------|--------|---------------------------------|--------------------------------------|--------------------------------------|
| Jan Oosterhaven | Pd.D. | Economic Sciences, | University Of Groningen (RUG) | University Of Groningen (RUG) |
| Samuel Seongseop Kim | Ph.D. | | Texas A&M University | The Hong Kong Polytechnic University |
| Susanne Becken | Ph.D. | Resource Management And Tourism | Lincoln University, New Zealand | Griffith University, Australia |
| Xianming Meng | Ph.D. | | Northeastern University | Australian Research Council (ARC) |
| Ya-Yen Sun | Ph.D. | | | National University Of Kaohsiung |
| Luis Robles Teigeiro | Ph.D | | | |
| Andre Carrascal I. | Ph.D | Economics | University Of Santiago De Compostela | |
| K. Ali Akkemik* | Ph D. | | Nagoya University, Japan | Kadir Has University |
| Djauhari Pambudi | Ph. D. | | | |

First, by comparing the profile of academics versus non-academics, it is shown that the vast majority of these authors are academics in the sense that they are affiliated with colleges, universities or research institutions.

Secondly, in terms of geographical distribution of these authors, it was found that English-speaking countries or regions dominate since the media selected for this analysis are journals exclusively in English.

c) *Research Methodology*

The following characteristics of the published articles selected are described in order to obtain certain homogeneity in the analysis: (1) topics and/or model used, (2) objective, place and time of research, (3) main results and/or multiplier effects.

d) *GDP multiplier effects / employment / income / added value / taxes / sectoral interrelation of tourism*

Six articles were selected from the journal *Annals of Tourism Research*. Two of these use the tourism satellite account, and four use a general equilibrium model.

In the first study, a tourism satellite account is used; it is published in 2004 and refers to the case of Tanzania. The study emphasizes the possibility of using a "bottom-up" approach when building a satellite account and points out the importance of being careful in the process of building a tourism account rather than just focusing on the final results.

The second study using the tourism satellite account is from the year 2009 and represents a review of the importance of the relationship between the tourism satellite account and System of National Accounts adopted by major multilateral development agencies around the world so that their results can be directly comparable with the main macroeconomic aggregates produced by the system, such as gross domestic product, added value and employment.

The third study is an application of a general equilibrium model for the UK in 2006. The model was used to examine and compare the effects of increases in the key factors of production: physical capital, human capital, innovation (represented by total factor productivity) and the competitive environment. The effects are calculated as the value of the change in welfare through variation in productivity. The article analyzes a 1% increase in physical capital, human capital and total factor productivity.

Two main points emerge from the results. First of all, in the case of tourism-related sectors, increases in productivity due to financial and physical capital are not substantial. This indicates that it is not important to prioritize increases in one type of capital over another. In the case of all economic sectors, the growth of human capital (labor productivity) is more beneficial than physical capital although, once again, the differences are not substantial.

This means that policies should not be formulated by focusing on one particular sector independently of the others but rather must take into account the effects on all of them. The results indicate that a 59% change in added value is obtained in the subsector of hotels and motels, while restaurants obtain 73%.

The fourth study reports a computable general equilibrium model and was implemented in Brazil in 2007. The main results show that a 10% increase in foreign demand leads to increases in domestic prices of, on average, around 0.7%, which reduces consumption by about 8.5%. The increase in the welfare of Brazil is around 106 billion USD, which means that the country benefits by \$45 for every \$100 of additional tourist spending (i.e., a multiplier of 0.45 is reported). The study also emphasizes distributional effects of tourism in the country and conclude that the lowest income household benefits but less than some higher income households.

In the fifth equilibrium model, the case of Fiji published in the year 2010 is studied. The analysis describes an input-output model with the objective of estimating direct and indirect effects on the economy in a scenario of an increase of 1 million USD in tourist spending for data in periods of boom and bust. The results indicate that an increase of \$1 million in tourist spending increases revenues by \$219,000 during no expansion periods (which would correspond to the year 1967), while \$1 million in tourist spending in the post-stagnation phase (2002) generates \$722,000.

Another way to assess the impact of different sectors of the economy is to examine the unweighted added value multiplier by sector over time. In absolute terms, the government sector has the highest direct multipliers followed by the art and entertainment subsector and the rental real estate sector. The food and beverage sector has a relatively low multiplier placing it between 13th and 16th place in size, but the indirect multiplier is at 3rd and 4th place in 2002 and 2005. The lodging sector is located between the 7th and the 13th place for direct added value multiplier compared to all other industries. However, the indirect multiplier lies at sixth and seventh place in periods after 2002. The transport sector has a low direct and indirect multiplier throughout the entire time period analyzed.

When performing a comparative analysis of forward and backward linkages of tourism sectors, it is found that, in general, these sectors have weak forward links. The lodging industry presents a forward link index ranging from 0.74 to 0.81, while in the food and beverage sector a Rasmussen index was estimated ranging from 0.77 to 0.87. The real estate and rental subsector is the sector with a tourist vocation that has strong forward linkages.

The sixth model refers to a general equilibrium model whose main objective was to analyze the impact on tourism of the recent boom in mining activity in

Australia and was published in the year 2014. This paper examined how Australian tourism is affected by the country's mining boom. However, the effect is different for each of the subsectors related to tourism. Tourism can be considered an input (export) industry and as an output (import) industry. Domestic tourism and outbound tourism are imperfect substitutes for each other. The exchange rate appreciation makes Australia a tourist destination with a higher price and therefore less competitive from the perspective of the rest of the world.

The positive income effect since the mining boom produces a long-term benefit for domestic tourism (increasing annually up to 0.49%). This occurs mainly by means of an increase in household incomes, consumption and the additional demand for tourism services associated with the air and land transport sector.

The average long-term increase in outbound tourism (around 1.15% per year) is more than double the rate of increase in demand for domestic travel.

The exchange rate appreciation effect varies depending on the source markets and on the segments and purpose of the visit. For example, during the period 2000-2010, the changes in spending and in the number of international tourist visitors to Australia are not uniform. While some countries have experienced declines in the number of visitors, especially Japan and some European countries, there have been some real success stories, as is China. The number of Chinese tourists has increased, but the 45% appreciation of the Australian dollar against the Chinese renminbi is associated with a decline in spending per visitor of 38%. This phenomenon has also occurred in other main source markets: United Kingdom (- 29%), USA (- 44%), New Zealand (- 17%), Japan (- 32%) and Indonesia (- 29%).

Three articles were consulted from the journal *Economic Modelling*, two of which are about computable general equilibrium models and one develops an input-output model.

The first study of general equilibrium refers to Hawaii's economy in the year 2011. The simulation of a 10% increase in Hawaii's tourist spending would cause an increase of 9.1% in gross state product and an increase of 2.1% in the total economy. Also it would cause a 2.43% increase in the locality's employment.

The second general equilibrium model is applied to situations of uncertainty in the US economy in 2013. An interesting scenario that models the role of uncertainty could be a hypothetical boom in tourism demand. Where there is an asymmetric shock, the possibility of a future tourism demand increase results in a welfare loss of 2.7 million USD, which reflects the non-linear behavior of the model.

An additional scenario modeling symmetrical effects (50% probability of a 10% increase in tourism and 50% probability of a 10% decline in tourism)

generates once again an overall marginal increase of 2.7 million USD in economic welfare, reflecting the adverse character of the agents.

The third input-output study includes as case studies Brazil, the United States and China and was published in 2014. The results show that a 10% increase in final demand generates an average multiplier effect of 1.5 on the Brazil's GNP, highlighting the refined petroleum subsector with a multiplier of 1.96 in contrast to the electrical and optical equipment sub sector which has a multiplier of 1.72. In the case of China, the average effect on the economy is 2.09, with the highest multiplier effect (2.61) on the electrical and optical equipment sub sector and the least effect (2.39) on construction. Finally, the US economy would experience an average multiplier effect of 1.76, where the food and beverage sector has a multiplier of 2.02 and the textile sector 1.77.

Ten articles were selected from the journal *Tourism Management*, five of which use general equilibrium models, and five of which use input-output models.

The first study published in 2004 documents the advantages and disadvantages of the use of input-output models versus the computable general equilibrium model, indicating a preference for the use of the latter.

The second study focuses on the economy of Scotland and was published in 2006 using a general equilibrium model. The prognosis for change in the international tourism expenditure would increase the GDP to 34.3 million GBP and generate 3,737 full time jobs in Scotland. The UK government would receive 58.3 million GBP in tax revenue. The additional expenditure by visitors from the United States would lead to an increase in GDP of up to 6.3 million and would generate 677 additional jobs. Finally, the effects of the appreciation of the US dollar against the pound sterling would lead to a 4.4 million reduction of the Scottish GDP.

The third case study corresponds to the economy of Taiwan in 2007. The objective was to model the effect of the installed capacity on the country's tourism industry under an input-output model. In 1999, the average occupancy rate was 62% and the proportion of jobs in relation to total sales was 0.4972. This proportion would rise to 0.6681 if the employment rate decreased by 42%. Furthermore, this ratio would drop to 0.3436 if the employment rate increased to 87%. The proportion of revenue in relation to total sales is less sensitive to changes in hotel occupancy since they range between 0.38 and 0.44 in reference to the same variation range in employment rate (between 42% and 87%).

By using the information from income multipliers in relation to sales, it is found that the type I multipliers (direct and indirect effects) remain constant with respect to occupancy rates, while type II multipliers (direct,

indirect and induced effects) may vary up to 73% in relation to the base year when occupancy rates fluctuate between 42% and 87%. The variation is due to the change in income rates (the percentage of sales is transferred as compensation to employees) in the hotel sector, which subsequently leads to significant induced effects.

The type I employment multiplier differs substantially since it stands within the range of 1.01 (for every 1 million USD in sales) with an occupancy rate of 42% up to a multiplier of 0.56 jobs per \$1 million in sales with an occupancy rate of 82%. The type I income multiplier is more stable since it has a range with a maximum difference of 6% in relation to the base amounts for hotel occupancy which were defined as between 42% and 82%.

These mixture of results are summarized as business exercising constant economies of scale, I-O impacts are unbiased but for services following economies of scale traditional I-O models are biased and they must be taken into account.

The fourth article was published in 2009 and uses a general equilibrium model applied to the country of Bali. The objective was to measure the effect of a decline in international tourism on the economy of Bali due to a series of bombings. The results suggest that in Bali the GDP could decline 2.33% while in Jakarta and Yogyakarta the corresponding quantities are 0.35% and 0.27%. Employment in Bali fell by 4.93%, household consumption decreased around 4.68%, investment dropped by 6.79%, exports fell by 16.34% and imports suffered a decline of 8.95%.

The fifth study refers to a general equilibrium model applied in New Zealand and was published in 2012. It models the effect that an increase in oil prices would have on tourism. The available gross national income decreases by 1.7% when, as an international reference, the international price of oil doubles; in addition, there is a 9% decrease in the real value of exports from tourism services. As a result of rising oil prices, there are several impacts due to the exchange rate and elasticities, but it is clear that this phenomenon affects all segments of visitors to New Zealand, particularly visitors from the UK.

The sixth study was published in the year 2012 and carried out a study of social accounting matrix for the Turkish economy. The main objective of the study was to estimate the impact on the economy as measured by product, added value and tourism employment. The total expenditure of foreign tourists was about 1.3 million USD in 1996 and about \$1.9 million in 2002. The full impact of international tourism expenditure on production was 1.054% of total production in 1996 and 1.049% of total production in 2002. The total impact of international tourism demand on the global added value was 0.896% of the GDP in 1996 and 1.325% of the GDP in 2002.

Finally, the impact on employment as a percentage of total employment was 0.58% in 1996 and 0.61% in 2002. As for the number of job positions, there were 117,983 positions in 1996 and 130,541 positions in 2002. One billion new Turkish Liras (YTL) in spending by international tourists generates 0.9 jobs in 1996 and 0.8 in 2002.

The seventh document examines a general equilibrium model for the economy of Singapore in 2013. The main objective was to evaluate the impact on the national economy by the public policy on tourism. The simulation results show that the policies are effective, but the effectiveness varies between the different policies. In terms of the real GDP, the tax refund policy on tourists' purchases and the policy of subsidies on investment in the tourism industry have a similar effect, but the first generates less tax revenue for the state. Considering the same loss of tax revenue from tourism subsidy policies, the policy of tourism expenditure deduction from both goods and local tourism services can significantly induce a higher GDP growth.

If total tourism expenditure is considered rather than real GDP, the tax deduction policy on purchases is higher than the other two subsidy policies. At the sectoral level, the basic tourism sectors and those closely related to tourism experience positive effects with the three types of policies analyzed especially the lodging and clothing sectors. However, most of the manufacturing sectors and those unrelated to tourism are negatively affected, with the exception of the electricity and real estate sectors and nonprofit sectors. Generally speaking, the policy of tax deduction on the purchase of tourism goods and services is more effective than the policy of subsidy on investment in the tourism industry and the subsidy policy of support and development assistance with events and tourism fairs.

The eighth article applied a general equilibrium model in Australia for the year 2014. The objective was to analyze the impact on the economy before and after the implementation of a fee charged to passengers departing from the country. The overall effect of the increase in the price of visiting the country is modeled under two demand price elasticity scenarios, the first assuming an elasticity of -0.5 and the second simulating the effects of an elasticity of -1.0. In the first scenario, with an elasticity of -0.5, a tourist tax increase of 17% has a positive impact (via tax collection) on the GDP of 2.21 million USD and a positive impact on welfare of \$49.8 million.

However, this same increase has a negative impact on the tourism industry. The tourism product declines \$8.5 million, the real tourism GDP suffers a fall of \$4.5 million and a total of 66 full-time direct jobs are lost. Under the scenario of a -1.0 price elasticity of the tourism demand, the positive effects on the domestic product and welfare of the whole economy are \$4 million

and 51 million respectively, mainly due to the increased tax collection. The tourism sector loses 12.3 million in its product, and the real tourism product decreases to 6.46 million. A total of 95 direct jobs are no longer generated. The results confirm that the tourism industry will be negatively affected, although the Australian economy will gain in general. Therefore, a conflict of interest is likely between the tourism sector in particular and the whole economy. The study aims to inform on the positive and negative effects of an increase on the tax for departing the country.

The ninth study was applied in 2014 to the hotel and restaurant sector for a group of OECD member countries. The objective was to estimate the tourist multipliers in their respective economies. The result is a description of the process for obtaining the multiplier for the industry of hotels and restaurants with high explanatory power. The significant explanatory variables found are: population, GDP per capita, and percent of imports on the GDP.

Finally, the tenth article refers to a study of the social accounting matrix for 2014 in the region of Galicia in Spain. The main objective was to estimate the tourism demand's effect on the income of the region's inhabitants. The results show significant positive effects across all income groups. However, high-income households benefit more than those with low incomes, contributing to a slight increase in income inequality in the region.

For the Journal of International Tourism Research only three articles were selected. The first refers to China in 2006 and uses an input-output model with type II multipliers. The results show that 1.64% of the gross national product, 1.40% of household income and 1.01% of employment depends on international tourism.

The second is an article published in 2009 for the case of South Korea after applying an input-output matrix to the exhibition industry. In summary, the total exhibition receipts of US\$645.7 million produced US\$1.2 billion in output; 21 692 full-time equivalent jobs, US\$260 million in personal income for residents, US\$577.4 million in value-added, US\$54.2 million in indirect tax and US\$104.3 million in imports.

The third article was published in 2014 and used an input-output model to measure the impact of tourism in the different provinces of China. Due to the larger multiplier effects, the most economically developed provinces will experience greater economic benefits as a result of new increases in tourism. However, some economically less developed provinces also experience benefits from an increase in tourism. Increases in visitor arrivals in these provinces have the potential to benefit both the tourism sectors as well as the sectors that demand and supply inputs and services to these industries. This is an attractive source of economic development in less developed provinces.

IV. CONCLUSIONS

After reviewing and describing the published works, it is important to note that of all the selected articles almost 50% refer to studies based on input-output models and social accounting while the remaining 50% are based on computable general equilibrium models. Only two studies were found for a Latin American country: Brazil. No studies were found for Mexico. The effects of tourism on the economy are clearly displayed whether one type of model or another is used. However, changes in supply and/or demand in an economy could modify input-output structures through price factors, productivity of factors of production and input ratio, making important to work with the dynamics of the markets when necessary.

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE

Volume 15 Issue 11 Version 1.0 Year 2015

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Goal of Business-A Review Paper

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Introduction of the Study- The main aim of business is to fulfill the need of the human beings to create a harmony. Though this aim is debatable right since its origin. The scholars defines the goals of business in their studies differently. A numerous studies evaluated the concept of sustainable business and its social responsibility towards society and the nature. *Wheeler & McKague (2002)* evaluates the role of the business in development and evaluates the function and responsibility of the NGOs, development agencies and government in the same. The study also evaluates the Social-Global Economic Trends. *Nelson & Prescott (2003)* inspects the role of Business and its role in the Millennium development of the world society. Study attempts the questions that what are the business goals how are they relevant and how the business can achieve them. *Fitzgerald KBE & Mandy Cormak (2005)*, *Modesto & Oliveira (2006)* & *Terziev (2012)*, attempts to investigate the role of the business organizations in the society and their social responsibility towards.

GJMBR - B Classification : JEL Code : M16



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The Goal of Business-A Review Paper

Sanjeet Singh ^α, Dr. Jagmeet Bawa ^ο & Dr. Gagan Deep Sharma ^ρ

I. INTRODUCTION OF THE STUDY

The main aim of business is to fulfill the need of the human beings to create a harmony. Though this aim is debatable right since its origin. The scholars defines the goals of business in their studies differently. A numerous studies evaluated the concept of sustainable business and its social responsibility towards society and the nature. *Wheeler & McKague (2002)* evaluates the role of the business in development and evaluates the function and responsibility of the NGOs, development agencies and government in the same. The study also evaluates the Social-Global Economic Trends. *Nelson & Prescott (2003)* inspects the role of Business and its role in the Millennium development of the world society. Study attempts the questions that what are the business goals how are they relevant and how the business can achieve them. *Fitzgerald KBE & Mandy Cormak (2005)*, *Modesto & Oliveira (2006)* & *Terziev (2012)*, attempts to investigate the role of the business organizations in the society and their social responsibility towards. *Henderson (2005)* investigates the role of the business in the present era with the justified definition of profit oriented organization. The study also attempts to find that how a business can contribute to the social welfare of the society. *Goodwin et.al (2008)* studies the Goals of Economic Activities and the recent trends in the economy. *Pirson (2010)* studies the concept of common wealth to shareholder value maximization and the changing role of the business organizations in the present era. *Porter (2011)* investigated the Role of Business in Society for Creating Shared Value and sustainability. The study attempts to find out the reason behind the disconnection between the Business and Society. *Schaltegger et.al (2011)* evaluates the business models and the drivers which make a business long term sustainable in the society. Study further evaluates the role of radical innovations in the sustainable business. *Aakhus (2012)* evaluates the concept of share value to classify its precincts and limits as an agenda for understanding the role of benevolence and CSR relative to the role of business in society. *Kaur (2013)* investigates the role of agriculture business in building sustainable society and studies the concept of sustainable agriculture with changes occur in it over the

time. *Sangeet et.al (2013)* explores the role of Agriculture in Sustainable economic development in India and India's current position in world agriculture. *Pal & Sahay (2014)* evaluates the role of the private schools in creating a sustainable society.

II. GEOGRAPHICAL BOUNDARY AND METHODOLOGY

Scholars have done their studies in the difference parts of the world. *Fitzgerald KBE & Mandy Cormak (2005)* selected the data of the major countries of the world. *Porter (2011)* has done his study in Costa Rica, Guatemala, Colombia, and Ghana, Kenya. *Kaur (2013)* has done the study in the major agriculture states of Punjab. *Sangeet et.al (2013)* has done her study in the major agricultural states of India i.e., Punjab, Haryana, U.P etc. *Pal & Sahay (2014)* has done their study in the schools of Nepal. Researchers used different methodologies to investigate and evaluate the variables and data for the purpose of the research. *Wheeler & McKague (2002)* selects the Private capital Flow, Foreign Investment Flow, and GDP data as the variables and uses Bar and Charts to show the trends. *Nelson & Prescott (2003)* selects the Education, Health, Food & Manufacturing industry for the purpose of study and selected Poverty, Health, Employment & Business as the research variables. *Henderson (2005)* uses Economic Progress, Business role & Society as the variables for the study. *Modesto & Oliveira (2006)* selects the exploratory method for the study and selects Society, business organization, societal marketing & strategic marketing as major variables for the research. *Porter (2011)* used Food Chain industry, Kenya's Cut Flower Cluster, Nestle, Nespresso, Sports Industry, Whole food markets as sample and Shared Value, Social Dimension as the variables for the research. *Schaltegger et.al (2011)* selects cases for business sustainability; business case drivers; business model; business model innovation & radical innovation for the evaluation purpose. *Aakhus (2012)* used the case study method for the research and selected shared value model, Business, Society and CSR as the variables for the study. *Terziev (2012)* selects Social Responsibility, Transparency, Society and Employees as the variables to evaluate. He selects Education, Health & Service industry as the sample for the study. *Kaur (2013)* uses climate change, crop rotation, organic farming and sustainable development as the factors to study. *Sangeet et.al (2013)* selected Agriculture, Plan Outlay in Agriculture, Population, and Employment across Various

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Sectors in India, Share of Different Sectors in GDP, India's Imports and Exports of Agricultural Commodities as the variable for the purpose of study. The data has been defined with the help of graphs and tables. *Pal & Sahay (2014)* uses empirical method for the purpose of research and selected School heterogeneity, Efficiency, Private school premium, Social objectives and Rural-urban dichotomy as the variable for the study and used Mean, Standard Deviation and Inverse Mill's ratios for the evaluation of the data.

III. FINDINGS OF THE STUDIES

Different findings have been reveal by the scholars in their respective research studies about the sustainable business and its role in the society. *Wheeler & McKague (2002)* address the vital role of the NGOs and government agencies in the development of the society and states that these organizations should take the responsibility to built a sustainable society. Further, study depicts that by supporting new mindsets and new assumptions on business and development, and learning from a myriad of new experiments, we need to prepare to take new chances on our future. *Nelson & Prescott (2003)* argued that the business must make the basic need products and services such as water, energy, nutrition, health-care, housing and education to the society at affordable price at the same time the business can create the employment for the society and help the economic development. Study also insists on the role of business to save environment as well by using eco-environment resources. At the end the research stated that there is a need for the First World (Develop Countries) to understand that they can get sustainable development only when the Third World (Developing Countries) get develop. *Fitzgerald KBE & Mandy Cormak (2005)* finds that the citizen in the society we impact through the way we run our business operations. If we not seen to be committed to the community within which we are allowed to operate, they will make their consumer choices in the favor of others. *Henderson (2005)* indicates in his study that most of the private organizations are still driven by the market-directed economy and do not think about the society and welfare. *Modesto & Oliveira (2006)* uncovers that the company managers should make a connection with the society and understand the need of the customers properly. Research also reveals that the companies who dominate the customers cannot sustain for long term. *Goodwin et.al (2008)* reveals in the study that both extrinsic and intrinsic motivation is required for the balance the economic activities. Study also reveals that the four economic activities named as resource maintenance, production, distribution and consumption are basically related with the three basic questions which are: which products need to produce and how much quantity needs to be produced and how much need to be store; Which kind of process and techniques

used by whom and which ethics and principle should use while the production and distribution system. *Pirson (2010)* unearth in his study that it is important to impart business education and knowledge in students and it is vital to make them aware about the role of the business in the society. Study also reveals that in the present era the shareholders value maximization is related more with the technical skills whether it need to management education oriented. *Porter (2011)* argued that the transformation in the thinking and practice of the corporations in the society is highly needed. The study further reveals that the concept of shared value will be better for the corporation because it leads to sustainable innovation, productivity and economic growth. *Schaltegger et.al (2011)* reveals in his study that to understand the case of business sustainability one has to understand the drivers i.e, costs and cost reduction, sales and profit margin, risk and risk reduction, reputation and brand value, attractiveness as employer, and innovative capabilities of the business, which influenced the societal and environmental activities of the business. Study also argued that the sustainable business model is requisite for create the customer loyal and to fulfill the shared value concept. *Aakhus (2012)* unearth in the study that Shared Value Method is the most practical method for regain the public trust in the corporations and make the business long time sustainable. Study also defines that the connotations for the industries are clear, SVM poses a challenge to NGOs, governments and, in particular, to those who educate future leaders. *Terziev (2012)* depicts in his study that the business is responsible towards the society as long as it is responsible to increase the wealth of the shareholders who all are the part of the society. Further the study indicates that apart from this every business has some natural responsibilities towards the society and the environment and the organizations must comply with these responsibilities. *Kaur (2013)* reveals that there is a need for devising new policies encouraging green farming as an alternative to farming coupled with use of chemical fertilizers, investment in water harvesting, endorsing small farm mechanization, competent water use technologies and using a balanced fertilizer in crop production. Study further explains that improvement in agriculture has to look into the aspects of social equity, environmental sustainability and people's participation. Sustainable enlargement is not only about preserving our resources but also altering our culture to make preservation our way of life. *Sangeet et.al (2013)* reveals in their research that the agriculture is a vital part of the economy and the importance of it cannot be ignored at any cost. Research further indicates that agriculture is still an important source of employment and source of income for a huge population of India. Study suggests the revitalization of corporative institutions, agriculture research and export promotion to develop the Indian

agriculture in a sustainable way. The findings of the research indicates that by sustainable development of agriculture in India scarce and restricted resources can be used optimally and proficiently which will help save the corrosion of environment for the future generations. Pal & Sahay (2014) unearth in the study that socially motivated schools perform farm better than the government and the private schools whether the company run schools are expensive and students score more marks in these schools. The study also suggests that education is vital for creating peace building through social inclusion and cohesiveness.

IV. DISCUSSION

Though a number of scholars have define the role of business and evaluate the influence of various aspect of society on it. But there is a gap visible in all the studies that none of the study is covering all the aspects or level on which human is living which are Individual, Family Society or Nature. The studies are mainly focusing on the smaller goals such as profit, CSR, Environmental concern or society alone. In his study Terziev (2012) argued that the business is mainly responsible towards society but there are other aspects too which a business should deal with. In other study Sangeet et.al (2013) portrays agriculture as the main concern of the business. Though these are the concern of the business but we cannot define these as the goal of the business. There are other scholars too who evaluation business in isolation and argued that the business should be sustainable. The scholars also defined business as a competitive opportunity for providing the customers a better product. Bassiry & Jones (1993) described by giving the reference of Adam Smith's capitalism in their study that a business should be competitive where a number of people compete with each other to fulfill the needs of the buyer. Though it may give the choice to buyer but it also encourage the sellers to manipulate things to get more profit or to win over the competitors. Scholars also reveal business as tool to utilize the human resource for the development of the organization. Florida (2003) gave a theory of creative capitalism. The theory indicates that the firm has to identify a specific group of people with the skills which may benefit the growth for the firm and use the resource properly to lead the race in this knowledge-based economy. It gives an indication that the business is not made for human being but the human exists for fulfilling the business needs. In the other case the researchers discussed that the primary goal of business is to become sustainable. Schaltegger et.al (2011) discussed in his study that to make a business sustainable the business should reduce cost, risk and increase brand value. The study reveals some major issues which are vital for business but not discussed that how to make a business sustainable. Only the risk reduction or cost cutting cannot make a business sustainable but the business have to define its goals properly and then to

fulfill the goals in process to become sustainable. After the depth evaluation of the studies it may be conclude that the business model or the main goal of the business is broader than just mere profit or to concentrate on any one part but the main goal of the business is to create a harmony at all the levels where human society is living.

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE

Volume 15 Issue 11 Version 1.0 Year 2015

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Influencing Components of Human Savings Behavior in Sylhet City

By Mohammad Kamrul Ahsan

Metropolitan University, Bangladesh

Abstract- Saving can be defined as difference between individual's disposable income and its consumption. Saving is the normal human nature. This study aims at identifying some important components which influence human saving behavior. A highly structured questionnaire was prepared to collect primary data from 350 depositors from the different banks of Sylhet City in Bangladesh. Several tools (Descriptive Statistics, Factors Analysis and Multiple Regression Analysis) have been used to find out core cause of human savings. The researcher has found at least 15 components that influence human saving behavior. So there have been 1 dependent variable i.e., saving fascination and 15 different independent variables i.e., to be rich man, to buy durable goods, Children education, to travel in future, etc. The findings of the study reveal five core components which influence human saving behavior mostly i.e., to have enough social security, to earn profit, for some dependent persons, to be rich man and to travel in future.

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GJMBR - B Classification : *JEL Code : E21*



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Influencing Components of Human Savings Behavior in Sylhet City

Mohammad Kamrul Ahsan

Abstract- Saving can be defined as difference between individual's disposable income and its consumption. Saving is the normal human nature. This study aims at identifying some important components which influence human saving behavior. 350 depositors from the different banks of Sylhet City in Bangladesh. Several tools (Descriptive Statistics, Factors Analysis and Multiple Regression Analysis) have been used to find out core cause of human savings. The researcher has found at least 15 components that influence human saving behavior. So there have been 1 dependent variable i.e., saving fascination and 15 different independent variables i.e., to be rich man, to buy durable goods, Children education, to travel in future, etc. The findings of the study reveal five core components which influence human saving behavior mostly i.e., to have enough social security, to earn profit, for some dependent persons, to be rich man and to travel in future. This propensity of individual saving behavior to financial institutions leads to the development of a country's economic strengths because as many people save as much as financial institutions provide loans to the development projects.

Keywords: save, components, saving behavior.

I. INTRODUCTION

Saving is normally considered in economics as disposable income minus personal consumption expenditure. In other words, it is regarded as income that is not consumed by immediately buying goods and services. For the purpose of this study, it must be emphasized that "saving" refers to deposits in saving accounts. Thus, the studies focus on financial saving of households held by banks and microfinance institutions (Issahaku, 2011).

Generally, savings outlets where rural households deposit their savings are of two main types: formal and informal financial institutions (Ahmad *et al*, 2006). Formal savings outlets include commercial banks, mobile banking or daily savings enterprise, microfinance and micro credit banks and the informal savings outlets include mutual savings, Susu and self-saving which basically involves keeping the money at home or with a trusted member of the community. Susu is a form of saving undertaken by a group of people with a common interest. The group could consist of co-workers, traders in the same area or even neighbors who agree to make contributions periodically (daily, weekly or monthly) and the total sum is given to one of

the members at a time at the end of a defined period (usually a month) until the cycle goes round every member (Obi-Egbediet *at*, 2014). Classical regards capital accumulation as the key to economic progress. They, therefore, lay emphasis on larger savings. They are of opinion that only capitalists and landlords are capable of saving. The working class is incapable of saving because it gets wages equal to the subsistence level (Rehmanet *al*, 2011).

The study is structured as follows. Following the introduction, 'section 1' shows objectives, hypothesis and methodology, 'section 2' says the limitations of this paper, 'section 3' has the literature review, 'section 4' consists of analysis and findings, recommendations and conclusions are in 'section 5' and 'section 6' offers references.

a) Objectives

The main objective of this paper is to discover the influencing components of human saving behavior. The subsequent objective is to measure the relationship between the influencing components and saving fascination.

b) Hypothesis

H_0 : There is no significant relationship between the influencing components of human saving behavior and saving fascination.

H_1 : There is significant relationship between the influencing components of human saving behavior and saving fascination.

c) Data Sources and Methodological Issues

The present study is basically based on primary data. These primary data have been collected from the Sylhet City during June 2015 to November 2015. The depositors from different banks and non-banking financial institutions have been addressed in this study. The sampling population of this study includes 350 depositors from Sonali Bank Ltd (50), Trust Bank Ltd(50), Modhumoti Bank(50), City Bank(50), United Commercial Bank Ltd(50), AB bank Ltd(50), National Bank Ltd(25), IDLC Finance Limited(25) in the Sylhet City. This study followed the random sampling method representative population. The primary data have been collected by using a highly structured questionnaire which contain two parts: Part 1 demographic information and part 2 influencing components of human saving behavior. To find out the influencing components of

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human saving behavior, fifteen components have been considered as independent components and only one component is considered as dependent component that is saving fascination. These fifteen components are rated by Five Points Likert Scale. These are: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Average, 4=Satisfied, 5=Strongly Satisfied. To verify the collected data relating to influencing components several statistical analyses i.e., Descriptive Analysis, Factors Analysis and Multiple Regression Analysis have been conducted. All the econometric problems like auto correlation and Multicollinearity are checked. The researcher has used SPSS 20 software to analyze these analyses. The researcher has referred to various books, journals and periodicals as the vital source of secondary data.

II. LIMITATIONS

The major limitations are:

1. Different people have different opinions, different adoptions and different saving behaviors.
2. These data have been collected from Sylhet region. So, actually it cannot be representing the actual saving behavior of human.
3. Some people are unwilling to provide information because they are worried about tax related issues.
4. It is presumed that the people, who has an account, has a habit of saving.

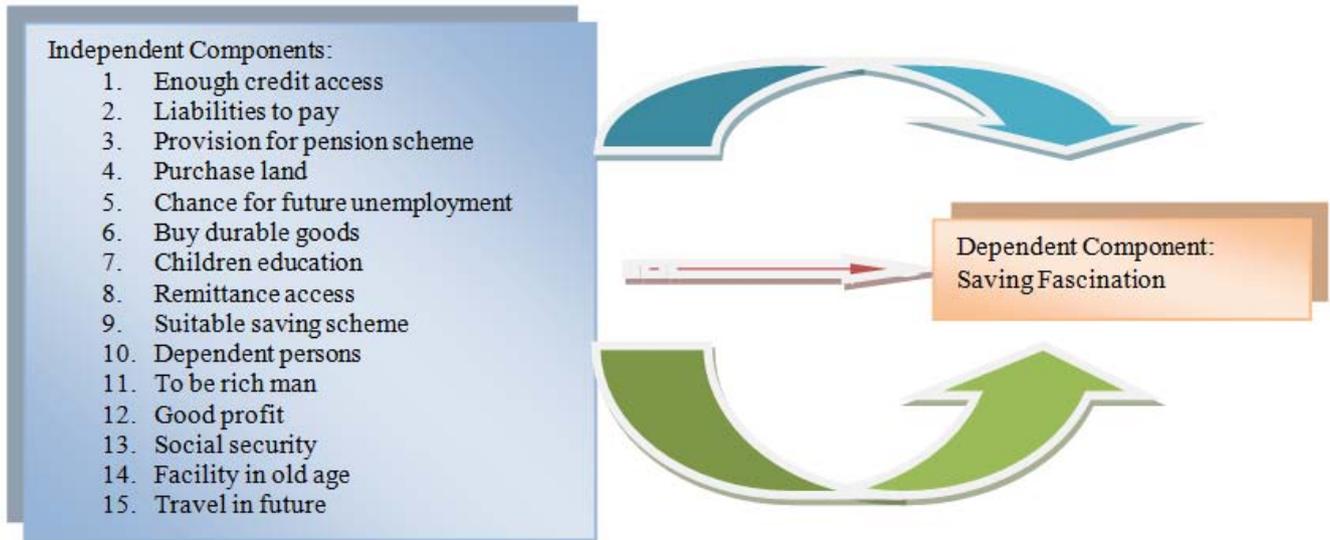
III. LITERATURE REVIEW

Saving is the normal nature of human because everyone is conscious about his future. To be safe in future they can make savings. They can spend these savings in the rainy day. There are some variables which influence to saving. Saving is one of the important variables for economic growth of any country. Saving is about income that is not consumed by immediately buying goods and services (Manyama, 2007). Abid and Afridi, (2010) showed in their paper that saving is an important variable in the theory of economic growth. Several studies have been conducted to assess saving behavior. These studies include Qureshi (1981), Giovanni (1983), Khan (1988), Burney and Khan (1992), Siddique and Siddique (1993), Khan and Nasir (1998), and Ayub (2001). Most of these studies have analyzed saving behavior in overall Pakistan and then broken it down to the rural/urban level. In all these studies the effects of different variables like income, real and nominal rate of interest, rate of inflation, rate of growth of income, output rate, lagged output per capita, lagged population growth rate, foreign and domestic saving ratio, degeneracy ratio, age, education, employment status, earning status, occupation, purchase of jewelry, assets, imports, exports, foreign aid, bank credit, prime interest rate, workers' remittances, private capital outflows, expected inflation rate, development of financial institutions, residence location, secondary earner, sex, consumption pattern etc. have been studied over saving pattern.

There are a number of determinants of saving. The level of savings depends on various factors such as income, interest rates, fiscal factors, demographics factors as well as psychological, cultural and social factors. Among the economic factors the interest rate is also considered as an important factor affecting the level of savings. The demographic variables like percentages of children and old people are very important determinants of savings (Fraczek, 2011). Middle-aged people tend to have higher incomes with lower propensities to consume and higher propensities to save. He argued also that there is a positive relation between income and saving for poor countries (Deaton, 2005). According to (Shem, 2002), personal attributes include: individual level of monthly income; individual level of education; individual's age; gender; size of household and; major source of income. Institutional characteristics are: interest rate on loans; distance from financial institutions; collateral for loan; time required to process a loan; minimum balance requirement; loan repayment method; restrictions on loan use; loan repayment period, and; loan amount. Choice of a financial institution directly implies a choice of saving, credit and transaction services thereof. The main factors influencing the choice of savings institutions include: security for savings, membership to the savings institutions and being able to qualify for group assistance. Individual's age is expected to be negatively correlated with saving, such that, older people save less and the younger save more (Lawrence *et al.*, 2009). Horioka and Terada-Hagiwara (2012) argued that the main determinants of savings in Asia are: the old dependency ratio, income levels and the level of financial sector development.

Burney and Khan (1992) explained that various socio economic and demographic factors as determinants of savings. Impact of Income, earning status, occupation, and age square of household head on saving were appeared to be positive but inverse of household income, dependency ratio, education, employment status, secondary earner and age were inversely related to savings of urban and rural households. Rogg, (2000) said that according to economic theory, credit access is expected to have several influences on savings: impatient consumers will be tempted to borrow and consume more in the present, hence save less; some current savers will reduce their saving since future needs can be financed more easily through credit; no change in saving will occur for the very patient and highly risk-averse savers.

a) Conceptual Framework



Source: Author's Compilation, 2015

The researcher has shown how independent variables hypothetically affect the dependent variables.

IV. ANALYSIS AND FINDINGS

a) Demographic Information

Table No. 1 : Personal Profile of the Respondents

| S. No. | Demographic Profile | Number | Percentage |
|--------|---------------------------|--------|------------|
| 1 | Gender | | |
| | Male | 260 | 74.3 |
| | Female | 90 | 25.7 |
| | Total | 350 | 100 |
| 2 | Age Groups | | |
| | 20 to 30 | 89 | 25.4 |
| | 31 to 40 | 176 | 50.3 |
| | 41 to 50 | 67 | 19.1 |
| | 51 and above | 18 | 5.1 |
| | Total | 350 | 100 |
| 3 | Employment Status | | |
| | Employed | 218 | 62.3 |
| | Unemployed | 132 | 37.7 |
| | Total | 350 | 100 |
| 4 | Profession | | |
| | Employee | 151 | 43.1 |
| | Businessman | 83 | 23.7 |
| | Student | 67 | 19.1 |
| | Others | 49 | 14.0 |
| | Total | 350 | 100 |
| 5 | Level of Education | | |
| | Undergraduate | 90 | 25.7 |

| | | | |
|---|-----------------------|-----|------|
| | Graduate | 138 | 39.4 |
| | Postgraduate | 106 | 30.3 |
| | Others | 16 | 4.6 |
| | Total | 350 | 100 |
| 6 | Marital Status | | |
| | Married | 249 | 71.1 |
| | Unmarried | 101 | 28.9 |
| | Total | 350 | 100 |

Source: Author's analysis of research data, 2015

From the above table the researcher has found that males (74.3%) are more than females in number. Most of them are in the age group of 31 to 40 (50.3%), employed (43.1%), graduate (39.4%) and married (71.1%).

b) *Influencing Components of Human Savings Behavior*

Table No. 2 : Descriptive Statistics

Descriptive Statistics

| | N | Mean | Std. Deviation | Variance |
|--------------------------------|-----|--------|----------------|----------|
| social security | 350 | 3.8114 | .88857 | .790 |
| good profit | 350 | 3.7343 | .81583 | .666 |
| dependent persons | 350 | 3.6943 | 1.05750 | 1.118 |
| to be rich man | 350 | 3.6800 | .86670 | .751 |
| travel in future | 350 | 3.6486 | 1.02375 | 1.048 |
| facility in old age | 350 | 3.6400 | 1.08208 | 1.171 |
| children education | 350 | 3.6343 | 1.18635 | 1.407 |
| buy durable goods | 350 | 3.5400 | 1.12148 | 1.258 |
| purchase land | 350 | 3.5371 | 1.22418 | 1.499 |
| liabilities to pay | 350 | 3.2314 | 1.11547 | 1.244 |
| provision for pension scheme | 350 | 3.1686 | 1.10877 | 1.229 |
| remittance access | 350 | 3.0829 | 1.23997 | 1.538 |
| suitable saving scheme | 350 | 3.0057 | 1.04070 | 1.083 |
| enough credit access | 350 | 2.9629 | 1.08720 | 1.182 |
| chance for future unemployment | 350 | 2.8371 | 1.28438 | 1.650 |
| Valid N (listwise) | 350 | | | |

Source: Author's analysis of research data, 2015

More mean and less standard deviation is the important component of influencing the human saving behavior. Here, it is clear that 'Social Security' is the main and most important component that influences human to have the saving behavior. Then important components are 'Wish to get good profit', 'For dependent persons', and 'To be rich man'. Less important components are 'There have a chance of future unemployment' and 'To have enough credit access'.

c) *Reliability and Validity Test*

For having high quality research results, it is needed to have valid and reliable data collection. The correct data will show the true results. So, it is necessary to test the validity and reliability to determine whether the tools used in the study are valid and reliable. Reliability of questionnaire was validating with the computation of Cronbach alpha. The value of Cronbach alpha indicates

that $\alpha \geq 0.90$ = Excellent (Very High Reliability); $0.70 \leq \alpha < 0.90$ = Good (High Reliability); $0.60 \leq \alpha < 0.70$ = Acceptable; $0.50 \leq \alpha < 0.60$ = Poor and $\alpha < 0.50$ = Unacceptable (Cronbach LJ (1951); Cortina, J.M. (1993).

Table No. 3 : Reliability Test

| Case Processing Summary | | | Reliability Statistics | | |
|-------------------------|-----------------------|-----|------------------------|------------------|------------|
| | | N | % | Cronbach's Alpha | N of Items |
| | Valid | 350 | 100.0 | .790 | 16 |
| Cases | Excluded ^a | 0 | .0 | | |
| | Total | 350 | 100.0 | | |

a. Listwise deletion based on all variables in the procedure.

Source: Author's analysis of research data, 2015

Here, for 16 items (including dependent component), Cronbach alpha is 0.790 which is greater than 0.70 and less than 0.90. That means the researcher has used highly reliable data for analysis.

d) Sample Adequacy and Sphericity Test

The researcher will do the factor analysis. For this reason, it is needed to know the suitability of dataset for factor analysis (Principle Component Analysis). The following table 4 (Table 4) gives information about sample sufficiency index KMO by Kaiser-Meyer-Olkin, which compares the sizes of the observed correlation coefficients to the sizes of the partial correlation coefficients for the sum of analysis variables is (0.706)

70.6%, and it is reliable because it overcomes (0.70) 70% by far (cut-off above 0.50) (Yong, 2013). In addition, supposition test of sphericity by the Bartlett test (H_0 : There is no significant relationship between the influencing components of human saving behavior and saving fascination.) is rejected on a level of statistical significance $p < 0.0005$ for Approx. ChiSquare = 1370.085. Consequently, the coefficients are not all zero, so the second acceptance of factor analysis is satisfactory (Anastasiadou, 2011). As a result, both acceptances for the conduct of factor analysis are satisfactory and it can proceed with it.

Table No. 4 : Sample Adequacy and Sphericity Test

| KMO and Bartlett's Test | |
|--|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .706 |
| Approx. Chi-Square | 1370.085 |
| Bartlett's Test of Sphericity df | 105 |
| Sig. | .000 |

Source: Author's analysis of research data, 2015

e) The Scree Plot Graph

The Scree plot shows the graphical representation of eigenvalues and guides to determine the essential factorial axis. The criterion of eigenvalue or characteristic root (Eigenvalue) ≥ 1 was used for defining the number of the factors (Kaiser, 1960).

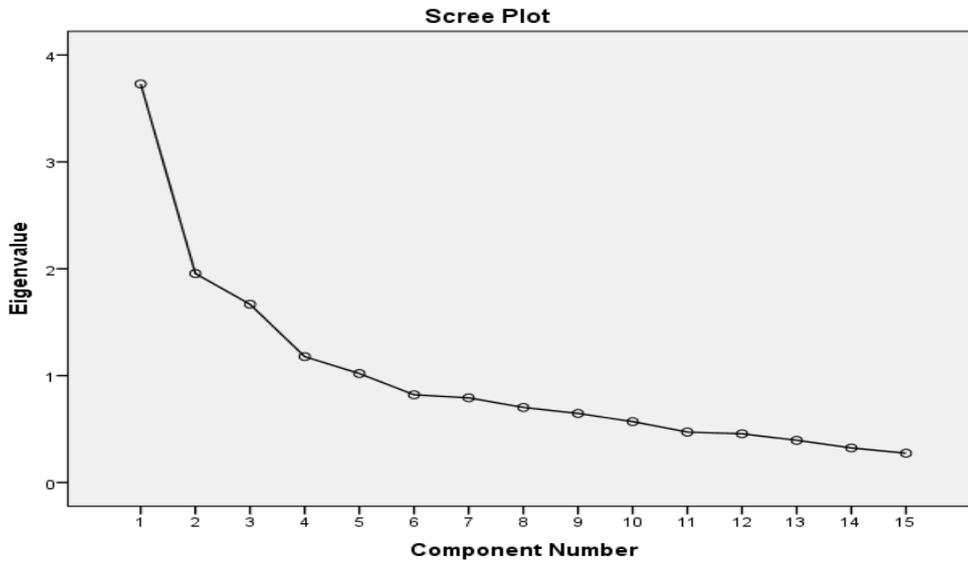


Figure 1 : Scree Plot Graph

Source: Author's analysis of research data, 2015

The above figure shows that the distinguished break up to the fifth factors, whereas after the fifth factor an almost linear part of the eigenvalue curve follows. Here only five factors have eigenvalue over 1.00 i.e.,

3.729, 1.955, 1.667, 1.178, and 1.020 for the 1st, 2nd, 3rd, 4th and 5th factor respectively. (Table No. 5) and decide whether they interpret data in a satisfactory way.

Table No. 5 : Eigen values and Variance

Total Variance Explained

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.729 | 24.863 | 24.863 | 3.729 | 24.863 | 24.863 | 2.249 | 14.990 | 14.990 |
| 2 | 1.955 | 13.036 | 37.899 | 1.955 | 13.036 | 37.899 | 2.035 | 13.569 | 28.559 |
| 3 | 1.667 | 11.114 | 49.013 | 1.667 | 11.114 | 49.013 | 1.898 | 12.652 | 41.211 |
| 4 | 1.178 | 7.853 | 56.866 | 1.178 | 7.853 | 56.866 | 1.700 | 11.330 | 52.541 |
| 5 | 1.020 | 6.797 | 63.662 | 1.020 | 6.797 | 63.662 | 1.668 | 11.121 | 63.662 |
| 6 | .821 | 5.472 | 69.134 | | | | | | |
| 7 | .792 | 5.281 | 74.415 | | | | | | |
| 8 | .703 | 4.684 | 79.099 | | | | | | |
| 9 | .646 | 4.307 | 83.405 | | | | | | |
| 10 | .569 | 3.796 | 87.201 | | | | | | |
| 11 | .472 | 3.146 | 90.347 | | | | | | |
| 12 | .456 | 3.038 | 93.385 | | | | | | |
| 13 | .395 | 2.632 | 96.017 | | | | | | |
| 14 | .323 | 2.156 | 98.173 | | | | | | |
| 15 | .274 | 1.827 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

Source: Author's analysis of research data, 2015

The table No. 5 displays the Eigen value in terms of percentage of variance explained. So, factor 1 explains 24.836% of total variance. It is clear that the first few factors explain relatively large amounts of variance (63.662%) whereas subsequent factors explain only

small amounts of variance. SPSS 20 extracts all factors with eigenvalues greater than 1, which leaves with five factors. These five factors explain 63.662% of total variance.

Table No. 6 : Communalities
Communalities

| | Initial | Extraction |
|--------------------------------|---------|------------|
| enough credit access | 1.000 | .657 |
| liabilities to pay | 1.000 | .748 |
| provision for pension scheme | 1.000 | .531 |
| purchase land | 1.000 | .701 |
| chance for future unemployment | 1.000 | .690 |
| buy durable goods | 1.000 | .680 |
| children education | 1.000 | .700 |
| remittance access | 1.000 | .486 |
| suitable saving scheme | 1.000 | .766 |
| dependent persons | 1.000 | .666 |
| to be rich man | 1.000 | .516 |
| good profit | 1.000 | .611 |
| social security | 1.000 | .690 |
| facility in old age | 1.000 | .583 |
| travel in future | 1.000 | .523 |

Extraction Method: Principal Component Analysis.

Source: Author's analysis of research data, 2015

The communalities in the Extraction column reflect the common variance in the data structure or the proportion of variance explained by the underlying factors. i.e., 65.70% of variance associated with question 1 (Component 1 i.e., Enough credit access) is

common, or shared, variance. The common communality table shows that each question has the Extraction value more than 0.50 which represent the satisfactory quality of the measurements from the model of 5 factors (Anastasiadou, 2011).

Table No. 7 : Rotated Component Matrix
Rotated Component Matrix^a

| | Component | | | | |
|--------------------------------|-----------|------|------|-------|------|
| | 1 | 2 | 3 | 4 | 5 |
| social security | .756 | | | | |
| good profit | .732 | | | | |
| to be rich man | .640 | | | | |
| travel in future | .551 | | | | |
| dependent persons | .476 | | | -.446 | .462 |
| children education | | .808 | | | |
| buy durable goods | | .806 | | | |
| purchase land | | .588 | .405 | .434 | |
| liabilities to pay | | | .841 | | |
| enough credit access | | | .778 | | |
| provision for pension scheme | | | .527 | | |
| chance for future unemployment | | | | .791 | |

| | | | | | |
|------------------------|--|--|--|------|------|
| facility in old age | | | | .639 | |
| suitable saving scheme | | | | | .837 |
| remittance access | | | | | .598 |
| remittance access | | | | | .598 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Source: Author's analysis of research data, 2015

By the use of SPSS Principle Component Factor Analysis, it is clear that total 15 components can be divided 5 groups of new components. i.e., Factor 1 named 'Social security with rich' contains components of 'Social security, wish to earn good profit, to be rich man, travel in future and for dependent persons'. Factor 2 named 'Children education with purchase durable goods and land' contains components of 'children education, want to purchase durable goods and want to purchase land'. Factor 3 named 'Credit and pension scheme' contains components of 'Liabilities to pay, to have enough credit access and provision for pension scheme'. Factor 4 named 'Chance of future unemployment with old age facilities' contains components of 'Chance of future unemployment and facilities in old age', and factor 5 named 'Remittance

with saving scheme' contains components of 'Suitable saving scheme and remittance access'.

In summary, Social security with rich, Children education with purchase durable goods and land, Credit and pension scheme, Chance of future unemployment with old age facilities and Remittance with saving scheme, these five factors can explain 63.662% of total variance.

f) *Research Model*

The researcher has found 5 important components that influencing human saving behavior. Now researcher has tried to know the significant impact of these components on saving fascination. So the researcher has decided to conduct multiple regression analysis. The regression model is:

$$Y = \alpha + \beta_1 F_1 + \beta_2 F_2 + \beta_3 F_3 + \beta_4 F_4 + \beta_5 F_5 + \epsilon t$$

Where,

Y= Saving fascination

This Saving fascination can be affected by the following influencing components of save:

F₁= Social security with rich

F₂= Children education with purchase durable goods and land

F₃= Credit and pension scheme

F₄= Chance of future unemployment with old age facilities

F₅= Remittance with saving scheme

εt= Error Term

And α is constant and β₁, β₂, β₃, β₄, and β₅, are coefficient of estimate.

Table No. 8 : Regression Model Summary

Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | .594 ^a | .353 | .343 | .76093 | 1.663 |

a. Predictors: (Constant), A-R factor score 5 for analysis 1, A-R factor score 4 for analysis 1, A-R factor score 3 for analysis 1, A-R factor score 2 for analysis 1, A-R factor score 1 for analysis 1

b. Dependent Variable: saving fascination

Source: Author's analysis of research data, 2015

From table no. 8 it is seen that there is a significant correlation between independent variables and dependent variables. At the level of 5% significant, the correlation is 59.4% which shows the moderate relation because the value of R is between 0.40 to 0.60. The value of R² indicates that 35.3% dependent variable can be explained by independent variables. Remaining

64.7% of variance can be explained by the other variables. The Durbin-Watson d=1.663, which is between the two critical value 1.5<d<2.5 and therefore it can assume there is no first order liner auto-correlation in these multiple liner regression model (Statistics Solution, 2015).

Table No. 9 : Analysis of Variance

ANOVA^a

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|--------------|----------------|-----|-------------|--------|-------------------|
| 1 Regression | 108.481 | 5 | 21.696 | 37.471 | .000 ^b |
| Residual | 199.179 | 344 | .579 | | |
| Total | 307.660 | 349 | | | |

a. Dependent Variable: saving fascination

b. Predictors: (Constant), A-R factor score 5 for analysis 1, A-R factor score 4 for analysis 1, A-R factor score 3 for analysis 1, A-R factor score 2 for analysis 1, A-R factor score 1 for analysis 1

Source: Author's analysis of research data, 2015

ANOVA output indicates that regression equation is explaining a statistically significant portion of the variability in the dependent variable from the variability of independent variables. This table also tells that the regression model is statistically highly significant (F test is highly significant, $p=0.000$ which is $p<0.05$). Thus it can be said that " H_0 : There is no significant relationship between the influencing components of

human saving behavior and saving fascination" is rejected and accept " H_1 : There is significant relationship between the influencing components of human saving behavior and saving fascination." Hence, ANOVA output supports the research hypothesis that there is a statistically significant relation between the set of independent variables and dependent variables.

g) Parameter Estimates and Multicollinearity

Table No. 10 : Parameter estimates

Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|-------------------------------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | 3.820 | .041 | | 93.919 | .000 | | |
| 1 A-R factor score 1 for analysis 1 | .024 | .041 | .025 | .579 | .563 | 1.000 | 1.000 |
| A-R factor score 2 for analysis 1 | .184 | .041 | .196 | 4.515 | .000 | 1.000 | 1.000 |
| A-R factor score 3 for analysis 1 | .483 | .041 | .514 | 11.855 | .000 | 1.000 | 1.000 |
| A-R factor score 4 for analysis 1 | .199 | .041 | .212 | 4.898 | .000 | 1.000 | 1.000 |
| A-R factor score 5 for analysis 1 | .059 | .041 | .063 | 1.451 | .148 | 1.000 | 1.000 |

a. Dependent Variable: saving fascination

Source: Author's analysis of research data, 2015

This table shows the value of predictor variables and intercept i.e., the value of α , β_1 , β_2 , β_3 , β_4 , and β_5 . Here constant (α) is 3.820.

Factor 1- The coefficient for Factor 1 is .025. So for every unit increase in Factor 1, a 0.025-unit increase in saving is predicted, holding all other variables constant.

Factor 2- The coefficient for Factor 2 is .196. So for every unit increase in Factor 2, a 0.196-unit increase in saving is predicted, holding all other variables constant.

Factor 3- The coefficient for Factor 3 is .514. So for every unit increase in Factor 3, a 0.514-unit increase in saving is predicted, holding all other variables constant.

Factor 4- The coefficient for Factor 4 is .212. So for every unit increase in Factor 4, a 0.212-unit increase in saving is predicted, holding all other variables constant.

Factor 5- The coefficient for Factor 5 is .063. So for every unit increase in Factor 5, a 0.063-unit increase in saving is predicted, holding all other variables constant.

Third column shows the values for the standard errors associated with these coefficients and factor 2, 3, 4 are statistically significant.

$$Y = 3.820 + 0.025F_1 + 0.196F_2 + 0.514F_3 + 0.212F_4 + 0.063F_5 + \epsilon$$

The researcher has also tried to know, whether there is any multicollinearity problem in the regression model. So, it can be conducted through Collinearity Statistics. A VIF around 1 is very good. (The minitab blog, 2015) A rule of thumb is that if $VIF > 10$ then multicollinearity is high (Kutner et al, 2004). So there have no any multi-collinearity problem in this model and the model is good in shape.

V. RECOMMENDATION AND CONCLUSION

Capital is the result of saving, and savings come from less present consumption for the sake of future goods. For having the economic development, it needs to formulate capital. These capital formation is possible though increased saving behavior from the people. According to (Gedela, 2012) from the classical times, saving has been considered as one of the determinants of growth. To lead the underdeveloped countries to the path of development, rate of savings must be enhanced. For the individuals and households, savings provide a cushion of security against future contingencies, whereas for the nation, savings provide the funds needed in the developmental efforts. To achieve higher rate of growth with relative price stability, the marginal propensity to save should be raised by appropriate incentives and policies. Also, in an era of international financial integration, for macroeconomic stability, higher domestic savings are essential.

So, it is clear that saving is one the most important factors for the developing country to be more developed. In this paper, the researcher has tried to find out cause of human saving behavior. Researcher has found a lot of variables that influence human savings behavior. But all variables are not applicable for everyone. For this reason, the researcher has taken only 15 variables. But these 15 variables are not enough because these variables explained only 35.3% variations. So there has a research gap. There should have been more variables to explain the cause of human saving. Here the researcher has found the main cause of human saving is that the having future security. So, financial institutions and government should take some initiatives regarding these variables of savings. Financial institutions can open new policy (scheme) for security purpose and enhance interest rate. As a result, the people will save more than previous time. If the people save more, there will be more development (Ahsan, 2015).

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GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE

Volume 15 Issue 11 Version 1.0 Year 2015

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Determinants of Rural Income Poverty in Ethiopia: Case Study of Villages in Dodola District

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GJMBR - B Classification : *JEL Code : I32*



Strictly as per the compliance and regulations of:



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Abstract- The main objective of this study is to ascertain the socio-economic determinants of income poverty in rural areas of Ethiopia. A Simple random sampling was used to select 217 household heads from two rural areas Dodola district, Oromia Regional State, in a year 2012. The Binary logistic method was used to find out the determinants of income poverty. The result reveals that determinants of income poverty include household size, number of income sources of the household, livestock and farm land ownership. Poverty status is negatively associated with number of income sources of the household, livestock and farm land ownership. However, family size is positively related to poverty. Finally the study suggests the rural households should diversify their income sources. The households should also be effectively involved in family planning.

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I. BACKGROUND AND JUSTIFICATION OF THE STUDY

Poverty is one of the core issues and the most widespread social problems in the world. It has no geographical boundary. It is found in all directions and corners. Despite world exceptional advances in science, technology and wealth creation, poverty in all its manifestations remains deep and persistent. Poverty is multifaceted and has no single generally accepted definition (Ibrahim and Umar, 2008). Indeed, it is multidimensional. As a result literatures on the concept of poverty show various interpretations in economic, social, political, institutional, environmental and cultural contexts.

As of World Bank (2005), poverty is defined as a deprivation in well-being, and encompasses many dimensions. It, besides the inability to acquire the basic goods and services, consists of low levels of health and education, poor access to clean water and sanitation, inadequate physical security, voicelessness, and insufficient capacity and opportunity to better one's life. O'Boyle (1999) defines poverty as a:

"...problem in unmet human physical need. That is, persons and families in poverty lack the goods and services needed to sustain and support life and the

income to purchase the goods or services which would meet those needs" (Page 1).

In the same way, Bradshaw (2005) expressed poverty, generally, as a lack of necessities. Basic food, shelter, medical care, and safety are generally considered essential based on shared values of human dignity. Nevertheless, what is a necessity to one person is not equally a necessity to others. Other writers, like Lehning (2006), Frerer and Vu (2006) and Wolf (2006) also defined and expressed poverty from their own viewpoint and field of study. However, all the approaches and definitions of poverty reveal as a state of human well being deprivation.

Poverty is a threat to the world, especially developing countries. The governments, national and international development institutions have tried to understand the nature of poverty and mechanisms of reducing it. Poverty alleviation is a key policy debate in recent development literature. Many researchers of development economics have argued that the fight against poverty is a necessary condition for sustainable Economic growth. As stated in Oyekale (2011) poverty reduction is the issue that reconsidered as one of the brightest indicators of human progress.

When we come to Ethiopia, it is one of the poorest nations in the world. The country has a long experience famine, hunger and poverty often managed by international humanitarian agencies. The government of Federal Democratic Republic of Ethiopia has been spending large amount of money to alleviate poverty, especially since 1991. Despite strong progress in poverty reduction, still millions of poor people live in the country. In other words, poverty is still a salient feature of the country. According to MoFED (2012), by the year 2010/11 around 29.2% and 28.2% of populations are living below income and food poverty line, respectively.

Even if all Ethiopians suffer of poverty, it is more sever in the rural area than urban areas (MoFED, 2006). This would bring various criminal acts if situations go beyond the limits of social tolerance. Working on anti – poverty program is pivotal. Any effective poverty reduction intervention depends on a good targeting of the poor and their features. Therefore, understanding the nature, determinants and level of rural poverty is a prerequisite for successful and effective government

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intervention to reduce deprivation in the rural areas. With the view of that this paper examines the socio-economic determinants of poverty in rural areas of Ethiopia. This study will contribute to the understanding of status and sources of poverty. Moreover, it will provide significant information for concerning bodies such as government, policy makers, and other institutions working to alleviate rural poverty and misery life.

II. LITERATURE REVIEW: SOCIO-ECONOMIC DETERMINANTS OF POVERTY

Poverty alleviation is a key policy debate in recent international development literature. The all inclusive development will happen when people empowered politically, socially and economically. The preparation of policies for poverty alleviation requires a systematic knowledge of the poverty phenomenon. With the growing interest in poverty reduction, it is important to summarize information on poverty and identify characteristics of the poor. In this regard, various studies have been conducted in all corners of the World to identify the factors responsible for poverty and well being deprivation.

Andersson et al (2005) examined the determinants of income and poverty in Lao PDR. The result reveals that household size, dependency ratios, education, and access to agricultural inputs are among the main determinants of per capita consumption. Sekhampu (2013) showed that household size, age and the employment status of the household head significantly explain the variations in the likelihood of being poor in South Africa. The age and employment status of the household head reduces the probability of being poor, while household size is associated with an increased probability of being poor.

Sabir et al (2006) presented the empirical findings on the poverty status and its causes among small farmers in the Pakistan. The result revealed that lower farm productivity, old age of the head, lower prices of the outputs, bigger household size, lack of infrastructure, and dependency ratio were the major determinants of poverty, whereas the education of the head was inversely related to poverty. Hashmi et al (2008), in the same country, showed that the chance of being in poverty increased due to increase in household size, dependency ratio, while, education, value of livestock, remittances and farming decreased the likelihood of being a poor. The same history is explained in the work of Malik et al (2012).

Ibrahim and Umar (2008), in Nigeria, identified the major determinants of poverty include household size, number of income sources of the household head, number of household members employed outside agriculture and the number of literate adult males and females in the household. In the same way, Apata et al (2010) examined the determinants of rural poverty in Nigeria. The results shows that access to micro-credit,

education, participation in agricultural workshops/seminars, livestock asset, and access to extension services significantly affect the probability of existing in poverty whereas female headed households' and distance to the market increases the probability of persistence in poverty.

Bahta and Haile (2013) identified the determinants of poverty in Eritrea. The result of study shows that poverty status is negatively associated with education level, type of resident, size of land, number of meal, remittance, access of credit from relatives, credit institutions, opinion to credit, rain fed crop, irrigated crop, income from agriculture and income from -non-agriculture. However, family number, number of children, children at school age and rent of land highly positively related to poverty.

In Ethiopia, agriculture is the backbone of Economy and agricultural production is the source of livelihood for millions of Ethiopians, especially for those in rural areas. According to Namara et al (2010), the persistent fluctuation in the amount and distribution of rainfall is considered as a major factor in rural poverty. As of Asmamaw (2004) vulnerability to rural poverty are mainly caused by degraded natural resources, poor access to essential services, poor infrastructure, weak local institution, rain-fed agriculture system and low saving.

Tesfahun (2005) revealed that poverty was found to rise with household size and access to micro credit (because of inappropriate use). However, rural poverty falls with higher level of education, size of cultivable land, number of oxen and other animals, and saving. Bogale et al (2005) explored the determinants of rural poverty in Ethiopia. The study illustrates that rural poverty is strongly linked to entitlement failures understood as lack of household resource endowments to crucial assets such as land, human capital and oxen.

In the same way, Bogale (2011) also analysed the extent and determinants of rural household poverty in the eastern highlands of Ethiopia. The study suggests that poverty is location specific, depends on access to irrigated land and access to non-farm income. The result also shows that household wellbeing is negatively affected by household size, and positively affected by age of household head. Probability of being in poverty is also strongly associated involvement in governance, social and production related networks.

Poverty is so technical that it is very difficult to draw a single conclusion. What is more significant is that how poverty is defined and measured. It determines the types and directions of policies aimed at reducing poverty. However, identifying the causes of poverty can be complex exercise (Sekhampu, 2013). Hence, this study focused on identifying the determinants of poverty.

III. METHODOLOGY OF THE STUDY

The study area was located in Dodola district, Oromia National Regional State, in south Eastern part of Ethiopia. It was based on a cross-sectional study that involved both quantitative and qualitative methods of data collection. Both primary and secondary sources of information were used. The primary data were collected with the use of structured questionnaires. A total of 217 households were randomly sampled.

The study used both descriptive and inferential statistics. Descriptive statistics such as frequency distribution tables, mean and standard deviation were used to analyze the socioeconomic characteristics of the respondents. The Binary Logistic model was used to identify the determinants of poverty in the area. The collected data through household survey was entered, manipulated and analysed using **SPSS** software. In addition MS-Excel was used to supplement those softwares.

Most of the studies on poverty in Ethiopia are based on data on consumption expenditure. This study was, however, based on income data collected from households in a reference year. The income variable includes all receipts in form of kind and cash for the reference year of the survey, i.e. 2012 Gregorian calendar. Household consumption of self-produced crops, livestock and forest products was also included in income. Salaries, profits, remittances and wages were also considered.

Poverty is usually measured as either absolute or relative poverty using income, consumption and welfare as well being indicators. Relative poverty refers to lacking a usual or socially acceptable level of resources or income as compared with others within a society or country where absolute poverty refers to the set of resources a person must acquire to maintain a minimum standard of living for survival. It defines the threshold that distinguishes the poor from the non-poor and examines the income or consumption levels of people in reference to that threshold. Recently, these income or consumption based absolute poverty lines have become a norm in almost all developing countries (Wagle, 2002).

The measurement of economic poverty, hence, requires defining a threshold (line) that distinguishes the poor from the non-poor. Any individual or household in the population with a measure below the line will be considered poor. Every society has its own ways of illustrating the standard of living. In the same way, almost all countries have their own national poverty lines to identify citizens whose income falls below a level necessary to maintain a minimum acceptable standard of living. Poverty lines are country specific and governments ultimately define what is meant by poverty in each country. So far, Ethiopia has not developed any official poverty lines. For the purpose of this study, the absolute poverty line is the value of income at the

twenty-fifth percentile for sample households, it is ETB 2606. The amount is to a large extent higher as compared to the threshold used by Namara et al (2010), it was ETB 1025.

In order to identify the determinants of poverty the study used a probability model in which the chances of being in income poverty are linked to individual, socio-economic and demographic characteristics. It is defined as:

$$P_i = E(Y = 1/R_i) = \alpha + \beta R_i$$

Where:

Dependent variable: Poverty is in binary nature (1=yes or 0=no): indicates probability being in poverty. The poverty line is ETB 2606 Per Year per Adult.

Independent variable, R_i:

- Age of the household head (age), Continuous variable
- Sex of household head (gender), Discrete variable
- Family/household size (family size), Continuous variable
- Dependency ratio (dependency ratio), Continuous variable
- Farm Landholding (totland), Continuous variable
- Livestock ownership in TLU (live stock unit), Continuous variable
- Education level of household head, (educ), Discrete variable
- Income Diversification (income sources), Continuous variable

IV. DATA ANALYSIS AND DISCUSSION

a) Socio-Economic Features of Respondents

The majority of the household heads (80.2 percent) were males. Male dominance, as we know, is one of the typical features of developing countries. About 79.7% of the respondents were married. In terms of education, the majority of them are literate (starting from read and write to secondary education). The literate respondents are around 61.8 percent.

Table 1 : Demographic Features of Respondents

| Demographic features | In percentage |
|-------------------------------------|---------------|
| Sex of household head | |
| Male | 80.2 |
| Female | 19.8 |
| | 100% |
| Marital status | |
| Single | 1.8 |
| Married | 79.7 |
| Widowed/Separated | 18.4 |
| | 100% |
| Educational level of household head | |
| Illiterate | 38.2 |
| literate | 61.8 |
| | 100% |

Source: Own Survey and Computation, 2012

The mean age of household head is 50.38 years. The average family size and dependency ratio are 7.94 and 1.9, respectively. This is indeed higher even as compared to national parameters.

Table 2 : Age, Family size and dependency Ratio

| Demographic features | Mean |
|-----------------------|-------------|
| Age of household head | 50.38±9.697 |
| Family size | 7.94±2.537 |
| Dependency ratio | 1.90±1.27 |

Source: Own Survey and Computation, 2012

As regard to resources or assets ownership, the possession of land and livestock per household is 1.85 hectare and 7.24 (in terms of TLU), respectively.

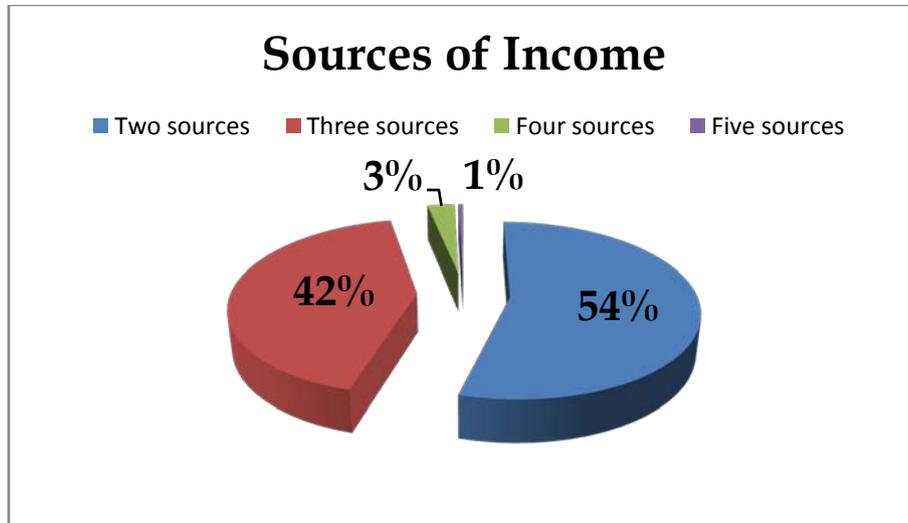
Table 3 : Sources of Income and Ownership of Basic Resources

| Productive Resources Ownership | Mean |
|--------------------------------|-------------|
| Per adult household income | 3719±1756.9 |
| Total land of the family | 1.85±0.935 |
| Livestock Wealth in TLU | 7.24±2.69 |

Source: Own Survey and Computation, 2012

The monthly average income per household was ETB 3719. All households earn their income from more than one economic activity. The sources of income are farming, animal husbandry, forest product, remittances, business and others. The majority of households (54%) earn their income from two major activities, crop farming and animal husbandry.

Chart 1 : The number of sources of household income



Source: Own Survey and Computation, 2012

b) Socio-Economic Determinants of Poverty

In order to identify the major determinants of income poverty the dependent variable, poverty situation of households, was regressed against various explanatory variables. The logit model fitted the data fairly well. The chi-square test strongly rejects the hypothesis of no explanatory power and the model correctly predicted 86.2 percent of the observations.

Apart from these, the Hosmer and Lemeshow (H-L) test was checked. It is also an important measure of goodness-of-fit test. It tests the null hypothesis that there is a linear relationship between the predictor variables and the log odds of the criterion variable. An insignificant chi-square indicates that the data fit the model well.

Table 4 : Omnibus Tests of Model Coefficients

| | Chi-square | df | Sig. |
|-------|------------|----|------|
| Step | 118.303 | 8 | .000 |
| Block | 118.303 | 8 | .000 |
| Model | 118.303 | 8 | .000 |

Source: Own Survey and Computation, 2012

The Model Summary we see below reveals that the -2 Log Likelihood statistics is 122.966. The Cox & Snell R^2 can be interpreted like R^2 in a multiple regression and is 42%.

Table 5 : Model summary and H-L test

| -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|----------------------|----------------------|---------------------|
| 122.966 ^a | 0.420 | .626 |

| Hosmer and Lemeshow Test | | | |
|--------------------------|------------|----|-------|
| Step | Chi-square | df | Sig. |
| 1 | 7.928 | 8 | 0.441 |

Source: Own Survey and Computation, 2012

Besides the model evaluation (goodness-of-fitness), it is, also, important to check their presence or absence of multicollinearity. In logistic regression, it has the same consequences as multiple regressions. In its presence, we are likely to misinterpret the contribution of independent variables. The correlation matrix confirms that multicollinearity is not a serious issue.

The estimates of the logistic regression are shown in Table 6. In general, **familysize**, **totland**, **incomesources** and **livestockunit** are statistically significant and the signs on the parameter estimates support expectations.

Table 6 : Binary Logit coefficient estimates for determinants of Poverty

| Dependent Variable: Poverty situation of households(1 if the household is poor and 0 if otherwise) | | | | | |
|---|--------|-------|--------|---------|--------|
| Independent Variables | B | S.E. | Wald | Sig. | Exp(B) |
| gender(1) | -.312 | .768 | .165 | .685 | .732 |
| age | -.015 | .038 | .156 | .692 | .985 |
| dependencyratio | .107 | .186 | .332 | .564 | 1.113 |
| familysize | 1.188 | .202 | 34.575 | .000* | 3.280 |
| educ(1) | .573 | .599 | .907 | .341 | 1.770 |
| totland | -2.720 | .603 | 20.380 | .000* | .066 |
| incomesources | -1.587 | .548 | 8.371 | .004** | .205 |
| livestockunit | -.417 | .154 | 7.367 | .007*** | .659 |
| Constant | .387 | 1.852 | .044 | .834 | 1.473 |

Note: *indicate that the coefficients are statistically significant at 0.01 levels.
 **indicate that the coefficients are statistically significant at 0.05 levels.
 ***indicate that the coefficients are statistically significant at 0.10 levels.

Source: Own Survey and Computation, 2012

According to the table above, household or family size was found to be a significant determinant of rural poverty. The coefficient for household size was found to be positive at 1 percent level of significance. As the household size increases by one unit, the odds of the household to fall into poverty increase by a factor of 3.280. This implies that the possibility of being in poverty is very high for those families who have large size.

As expected, the coefficient of total land holding was negatively correlated with the probability of a household being in poverty. It is statistically significant at 1 percent. The odds ratio illustrates that a one-hectare increase in land holding, the odds of being poor decrease noticeably. Since agriculture is the mainstay of the households in rural Ethiopia, land is the critical resource. Accordingly, the smaller the land holding implies the greater likelihood of falling in poverty. Increment of land holding by one hectare was found to reduce the chance of being trapped in poverty by a factor of 0.066. In the same way, livestock ownership, as measured in TLU-Tropical Livestock Unit, was found significant in reducing the probability of being trapped in poverty. An additional livestock ownership by one TLU reduces the chance of households to fall in poverty by a factor 0.659. Besides their own direct contribution, livestock are the main supplementary in farming system of Ethiopia.

The coefficient for household's involvement in different activities was found to be statistically significant at 5 percent. The higher income diversification implies the lower chances of being trapped in poverty. As regard to household age and education status, contrary to the expectation, the coefficient for the variables was not found to be statistically significant at either of 1, 5 or 10 percent.

V. CONCLUSIONS AND RECOMMENDATIONS

Poverty is one of the hottest social issues in international phenomena. In this regard various studies have been conducted in all directions of the world to identify its determinants. The Binary logistic model was employed so as to find out factors affecting income poverty in rural areas of Ethiopia. The dependent variable, poverty situation of households, was regressed against eight explanatory variables. The result shows that income diversification, livestock ownership, family size and land possession are significantly influencing the probability of households being in poverty. As a result they are considered as major determinants of rural poverty. On the other hand, sex of the household head, age, education and dependency ratio were not found to be statistically significant.

The study suggests that two things, above all, are important in reversing the trends of poverty and well being deprivation in rural areas of Ethiopia. These are: First, promoting effective family planning system and second, diversification of income earning mechanisms.

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APPENDIX

A. Classification Tables(Model adequacy test)

| Classification Table ^{a,b} | | | | | |
|-------------------------------------|--------------------|----------|-------------------|----------|--------------------|
| | Observed | | Predicted | | |
| | | | Poverty situation | | Percentage Correct |
| | Poverty situation | | Poor | Non poor | |
| Step 0 | Poverty situation | poor | 0 | 53 | .0 |
| | | Non poor | 0 | 164 | 100.0 |
| | Overall Percentage | | | | 75.6 |

| Classification Table ^a | | | | | |
|-----------------------------------|--------------------|----------|-------------------|-----|--------------------|
| | Observed | | Predicted | | |
| | | | Poverty situation | | Percentage Correct |
| | Poor | Non poor | | | |
| Step 1 | Poverty situation | poor | 35 | 18 | 66.0 |
| | | Non poor | 12 | 152 | 92.7 |
| | Overall Percentage | | | | 86.2 |

a. The cut value is .500

B. Correlation Matrix(multicollinearity test)

| Correlation Matrix | | | | | | | | | |
|--------------------|----------|----------------|-----------|-------|-------------|------------------|----------|---------|----------------|
| | Constant | Income sources | gender(1) | age | Family size | dependency ratio | Educ (1) | totland | Livestock unit |
| Constant | 1.000 | -.493 | .233 | -.704 | .104 | -.174 | .243 | .108 | -.312 |
| Income sources | -.493 | 1.000 | .093 | .058 | -.452 | -.032 | .022 | .140 | .141 |
| gender(1) | .233 | .093 | 1.000 | -.559 | -.230 | .091 | .540 | .156 | -.032 |
| age | -.704 | .058 | -.559 | 1.000 | -.084 | .119 | -.561 | -.119 | .067 |
| Family size | .104 | -.452 | -.230 | -.084 | 1.000 | -.245 | .009 | -.679 | -.332 |
| dependencyratio | -.174 | -.032 | .091 | .119 | -.245 | 1.000 | .088 | .119 | -.014 |
| educ(1) | .243 | .022 | .540 | -.561 | .009 | .088 | 1.000 | .047 | -.113 |
| totland | .108 | .140 | .156 | -.119 | -.679 | .119 | .047 | 1.000 | -.077 |
| livestockunit | -.312 | .141 | -.032 | .067 | -.332 | -.014 | -.113 | -.077 | 1.000 |



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: B
ECONOMICS AND COMMERCE

Volume 15 Issue 11 Version 1.0 Year 2015

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Water Resource for Economic Development in Vietnam and Implications for Developing Countries

By Tran Thi Lan Huong

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Abstract- In the framework of the project “Water Resource for Economic Growth and Sustainable Development: Theories and African and Middle East Experiences” funded by Vietnam National Foundation for Science and Technology Development (NAFOSTED) under grant member II3.2-2013.37, the principle investigator and key research members have carried out studying, calculating and analyzing the water supply and demand to define potential, real status of water exploitation and usage for economic development in Vietnam. The study has been pointed out that due to abundant water resource, Vietnam has huge advantages for economic development, especially for agriculture and tourism, but wrong awareness of infinite water resource availability has caused a lot of great losses for economic development.

Keywords: *water resource, water supply, water demand, water usage, loss from water, vietnam, middle east.*

GJMBR - B Classification : *JEL Code : F63*



Strictly as per the compliance and regulations of:



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Keywords: water resource, water supply, water demand, water usage, loss from water, vietnam, middle east.

I. INTRODUCTION

Although water resource of Vietnam has abundant volume, in fact, usable water resource is limited because of uneven distribution. Many areas are lack of fresh water for living resulted by pollution, flood, erosion, landslide, drought and other factors. Water quality is also degraded seriously making living environment being destroyed and pushing people closer and closer to dangerous risks. Vietnam's Ministry of Natural Resource and Environment estimated that about 37% of water loss was caused by wasting, even in some areas the ratio may be 50%. One of main reasons is that water resource in Vietnam depends much on rainfall and system of trans-boundary rivers, infrastructure of water supply is outdated because some of irrigation system which had been built since 1960s, 1970s now are degraded and damaged heavily. Water management is weak, process of rapid industrialization and urbanization in Vietnam is making demand for water increase higher and higher, whereas pollution of water source is also raised. The purposes of this article is to

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define potential and real status of water exploitation and usage in Vietnam, emerging issues which Vietnam faces in using water for economic development, therefore recommends some implications. Methodologies are surveys and investigations of 450 samples in provinces of Nam Dinh and Hanoi which are prone to big storms and have high level of rainfall about 1,750mm to 1,800mm, and in Ninh Thuan which is prolonged dry with rainfall about 400 mm to 700 mm, in combination with available statistic data of Vietnamese relevant ministries and agencies to evaluate research outcomes.

II. BASIC CHARACTERISTICS OF WATER RESOURCE IN VIETNAM

a) Water Potential

Water resource in Vietnam is evaluated very diversified and abundant consisting of surface water and ground water in natural and artificial watershed areas like: rivers, springs, natural lakes, artificial lakes, wells, dams, ponds, swamps and aquifers. According to the report of the Ministry of Natural Resource and Environment (MoNRE), Vietnam has about 2,372 small and big rivers with the length of over 10 km in which there are 109 main rivers such as: Hong river, Thai Binh river, Bang Giang – Ky Cung river, Ma river, Ca river, Vu Gia – Thu Bon river, Ba river, Dong Nai river, Mekong river and 04 tributaries like Da river, Lo river, Se San river, Sre Pok river compassing huge catchment of over 10,000 square km, representing about 93% of total areas of river network in Vietnam. Besides, Vietnam has many natural lakes, dams, swamps, watersheds which their sizes are vary due to seasons. Some lakes are known as Lak lake in width of 10 square km in Dak Lak province, Bien Ho lake in width of 2.2 squared km in Gia Lai province, Ba Be Lake in width of 5 square km in Bac Kan province and Tay Lake in width of 4.5 square km in Hanoi. Big swamps are located in estuaries of middle coastal areas such as: Tam Giang, Cau Hai and Thi Nai. Vietnam has thousands of artificial dams with water capacity of 26 billion cubic meter in which there are 6 biggest dams with water capacity of over 1 billion cubic meter are exploited for hydroelectricity including Hoa Binh, Thac Ba, Tri An, Dau Tieng, Thac Mo and Ya Ly. According to the data by MoNRE, Vietnam has more

¹ This article funded by the Vietnam National Foundation for Science and Technology Development (NAFOSTED) under grant member II3.2-2013.37

than 3,500 storage lakes in which there are about 650 big and medium storage lakes for hydro power production, flood and drought control, navigation, irrigation and aquaculture. Apart from, ground water is source with huge potential, particularly in Northern and Southern deltas. Water resource in coastal and inland wet areas play important roles in conserving and sustaining function of ecosystem and biodiversity of wetlands.

b) *Water supply and demand and effective elements*

According to the Ministry of Natural Resources & Environment (MoNRE), Vietnam has about 840 billion cubic meter of surface water in which there is only 310 billion cubic meter supplied by rainfall in Vietnamese territory accounting for 37%, the rest is 63% depending on water runoff out of Vietnam. Total potential ground water exploitation excluding islands is estimated about 60 billion cubic meter. Water volume which is being investigated appropriate 8 billion cubic meter per year.² Due to the evaluation criteria of International Water Resource Association (IWRA), a nation which has water consumption per capita below 4,000 cubic meter/year is considered as water insufficient nation. In Vietnam, annual water consumption per capita is about 10,600 cubic meter in 2008, achieving average level in equivalent with the United States of America, however much lower than neighboring countries like Lao PDR, Cambodia, Malaysia, Myanmar, Indonesia. For the supply, water resource in Vietnam brings a lot of unsustainable elements. Over 63% of fresh water in Vietnam originates from outsides, on other hands from other countries. For example, Hong river basin has transboundary water accounting for 50% of total surface water; Mekong river basin has about 90% of total surface water originating from transboundary water. Inland water source of Vietnam is only about 3,600 cubic meter/capita/year³, and if only accounting for inland water source, Vietnam ranks in the list of water lack nations in the world. Moreover, water supply of Vietnam isn't ensured by seasons because of unpredictable climate change, uneven geographical water distribution. In 13 main rivers and tributaries with basin area of over 10,000 cubic km, there are 10 transboundary rivers, three of them are upstream in Vietnam and downstream in neighboring countries and the rest are upstream in neighboring countries and downstream in Vietnam. That's why Vietnam is much depended on sharing water benefits with neighboring countries.

For water demand, Vietnam is increasing in water demand caused by population growth, unplanned deforestation, serious water contamination and rapid

economic development. In 1943, demand for water consumption in Vietnam was 16,641 cubic meter/capita/year, in 2008 about 10,600 cubic meter and is proposed when Vietnam's population increases about 150 million people, its water consumption will be only 2,467cubic meter, nearly equivalent to scare water nations. According to the assessment result in 1999, total water demand of the whole country was represented about 8.8% of total annual water runoff in equivalent to the frequency of 75%, and then increased by 12.5% in 2000 and 16.5% in 2010. Total water for irrigation increased very quickly from 41 cubic km in 1985 (accounting for 89.8%) to 46.9 cubic km in 1990 and 60 cubic km in 2000. Water demand for dry season is huge, especially for agricultural production. For instance, demand for water usage in many places and catchments is able to be twice bigger than real demand resulting in difficulties of production and living. By impacts of global climate change, Vietnam is increasing in demand of water whereas supply of water has trend of decreasing because surface water is evaporated, water is salty and contaminated and conflict for water in Mekong river basin raises.

In general, characteristics of water resource in Vietnam are uneven geographical distribution. Total annual rainfall of Vietnam is high but uneven distributed by space and time. Some places have high rainfall like Bach Main Thua Thien – Hue province up to 8,000mm/year, whereas many areas such as Phan Rang in Ninh Thuan province, Phan Ri in Binh Thuan province, rainfall is very little from 400 mm to 700 mm per year. Distribution of rainfall by time is unbalanced, for example rainfall in dry season in Mekong river delta is less than 10% of total annual rainfall but prolongs nearly 7 months while the rest of 90% concentrates in 5 months of rainy season. Total surface water runoff changes clearly among every season in year in which 75% to 85% is in flooding season and the rest is divided into dry months. Mekong river is the largest river network in Vietnam accounting for nearly 60% of total national water volume, 54 times bigger than water volume in Northern region. Water flooding discharge of Mekong river is possible up to about 40,000m³ per minute, but in dry season, it sometimes decreases by 1,200 -1,700 m³ per minute causing prolonged dry and salty. Many rivers in Tay Nguyen nearly have not got water runoff in dry season. There appears big gap of ground water between dry and rainy seasons from meters to dozens of meters, especially in many places of Tay Bac and Tay Nguyen.

Furthermore, water resource in Vietnam also much depends on disasters and climate change. Storms and floods are considered as disasters causing greatest damages in Vietnam. Big floods damage human and prosperities, landslide, erosion and saltwater intrusion. In recent years, droughts also degrades water resource in Vietnam mainly caused by climate change and overexploitation of water resource.

² Ngo Dinh Tuan (2007), Suitable development and usage of water resource, Water Resource University, Workshop on biodiversity and climate change: relationship with poverty and sustainable development, Hanoi, 22-23 May 2007.

³ Water resource in Vietna: both lack and weak, Ministry of Natural Resource and Environment, 30 August 2011.

Vietnam locates in downstream of big river system in the region of Southeast Asia, 60% of water discharge depends on upstream out of Vietnam. Recently, upstream countries like China and Lao which are building projects to exploit and develop hydro power with huge scope in the upstream of Mekong river and Hong river make water discharge into Vietnam less and less. Raising up of sea water level make water resource worsen in quality resulting in simultaneously affecting ground water such as decrease in aquifers and salinization. Vietnam, particularly Mekong river delta is the "pivot area" of climate change and sea water raising, affecting much in fresh water resource for production and living.

III. THE SURVEY OUTCOME AND ASSESSMENT

Our research team had been carried out surveys of reality using water resource in Hanoi, Nam Dinh and Ninh Thuan. Survey samples were 450 people who reside in rural areas, of them 100 people in Hanoi, 100 people in Nam Dinh, and 250 people in Ninh Thuan. 43.8% of total surveyed people were female. Educational level of surveyed people were such as 54.8% of secondary school, 30.0% of high school and 14.7% of university degree. 75.6% of total surveyed people are local citizens.

Hanoi is the capital of Vietnam, locates in the center of Hong river delta. Thanks to alluvium, three quarter of natural area of Hanoi is delta, has big rivers passing through such as Hong river, Da river and a lot of other tributaries. Apart from, Hanoi has many lakes like Tay lake with width of 500 ha, Guom lake, Truc Bach lake, Thien Quang lake, Thu Le lake and big lagoons like Kim Lien, Linh Dam, Ngai Son, Suoi Hai, Meo Gu, Xuan Khanh, Tuy Lai, Quan Son. However, due to process of rapid urbanization since 1990, most of lakes and rivers in Hanoi have been seriously polluted.

Nam Dinh is coastal province locating in southern of Northern delta, has Hong river in downstream. This wetland is the professionally area for producing rice. Because of locating in Tonkin gulf, every year Nam Dinh is often affected by monsoons and tropical low pressure, in average from 4 to 6 storms a year.

Ninh Thuan is a province in South Middle. It has semi mountainous geography with two seasons: dry and rainy seasons. The province is famous place to grow grapes in Vietnam. It is assessed as the driest region in Vietnam, frequently meet a lot of heavy damages from drought.

The popular mistake in Vietnamese recognition is that Vietnam has abundant and infinite fresh water resource. Due to the wrong recognition on richness of water resource, Vietnam has no solutions to protect efficiently fresh water resource, loss and waste water negatively impacting on economic development. According to the survey outcome, people in Hanoi and

Nam Dinh said that they were not lack of water for living and production, whereas in Ninh Thuan, 129/250 surveyed people said that they were lack of fresh water for living and 242/250 surveyed people said that they were lack of water for production. For water quality, according to the survey outcomes in three provinces and cities, most of people got water from dug wells (100 people in Hanoi; 30 people in Nam Dinh and 105 people in Ninh Thuan). Tap water were used parallel with well water (99/100 people in Nam Dinh; 5/100 people in Hanoi and 145/250 people in Ninh Thuan). The number of people who got water from rivers, lakes and ponds were very limited. It's concluded that water for living in three provinces in the basic is industrially processed in frame of tap water or self processed in frame of well water. Ability of assessment of these water sources is so easy that awareness of saving water is not high.

However, the biggest problem of water source for living and production in Nam Dinh and Hanoi is water contamination. In Nam Dinh, 39% of total surveyed people wished to be advised how to process polluted water source and 10% of total surveyed people would like to improve water quality. In Hanoi, 98% of total surveyed people said that water source for living and production was over polluted and had to be processed at once.

Regarding to water cost for living and production: According to the survey outcomes, 100% of total surveyed people in Nam Dinh and Hanoi said that water cost for living and production was very low and inconsiderable. 60% of total surveyed people in Nam Dinh and Hanoi said that water source was available in rivers and lakes, but there needed to use irrigation equipments for water into fields such as pumps, scoops.

Mean while in Ninh Thuan where is frequently dry, 129/250 surveyed people said that they were always lack of water for living and 242/250 surveyed people answered that they were always lack of water for production. Because of water scarcity, 56.68% of surveyed people had to pay from 20% to 30% of their income for buying living water and 22% of surveyed people said that they have to spend 10 days a month to buy water for production with rather high cost (about from 20% to 30%). Drought occur frequently in Ninh Thuan, especially from summer in 2014 to the end of 2015 is making riverbeds, streams, lakes being run out of water. According to the People Committee of Ninh Thuan province, prolonged drought affected directly on people's living, for instance over 50,000 people were lack of food and water. Crop were damaged seriously, over 20,000 ha had to be stopped for production, at the same time, prolonged drought also affected directly thousands of livestock which were lack of water to drink resulting in nearly 500 cattle died. According to the survey outcome, up to 95.2% of surveyed people said that they had to leave land for cultivation because of

drought and 99.2% of surveyed people answered that they became poorer and poorer because of frequently continued droughts.

Table 1 : Impacts of droughts and floods on livings of Hanoi's, Nam Dinh's and Ninh Thuan's people in the survey of 2015

| Impacts (% surveyed people) | Droughts in Ninh Thuan | Floods in Hanoi and Nam Dinh |
|--------------------------------|------------------------|------------------------------|
| Being poorer and poorer | 99.2% | 75.4% |
| Loss of crops | 96.0% | 82.3% |
| Decrease in productivity | 85.2% | 67.7% |
| Influence in health | 61.2% | 40.3% |
| Leave land for cultivation | 95.2% | 42.3% |
| Change for employment | 52.0% | 41.1% |
| Non impacts | 4% | 14.9% |
| Total | 250 | 250 |

Source: Survey outcome of IAMES, 2015.

Loss in economic development related to water source was warned by the World Bank in 2007. According to the assessment of the World Bank in 2007, every year Vietnam lost about 1.3 % of GDP resulting by water pollution equivalent to the Philippines, whereas Cambodia lost about 2.7% of GDP and Indonesia lost appropriate 2.3% of GDP. Regarding as real value, every year Vietnam lost about US\$ 780 million because of economic damages resulting from water resource while Indonesia lost about 6.3 US\$ billion, the Philippines lost US\$ 1.4 billion and Cambodia lost 450 US\$ million. Regarding as average income per capita, every year Vietnam lost about US\$ 9.3/capita due to economic damages resulting from water resource⁴. Additionally, according to the survey, 85.2% of surveyed people in Ninh Thuan and 67.7% of surveyed people in Hanoi and Nam Dinh said that floods and droughts made productivities decrease. The most dangerous thing was that 95.2% of surveyed people in Ninh Thuan and 42.3% of surveyed people in Hanoi and Nam Dinh said that they had to leave land for cultivation because of droughts and floods. Water pollution affected health of 61.2% of surveyed people in Ninh Thuan and 40.3% of surveyed people in Hanoi and Nam Dinh.

In sector structure of water usage, agriculture accounted for 82% of total water demand in 2008 while industry and consumption only accounted for 18%. It is focused that water demand for agriculture has been huge without any great changes since 1990, for instance, in 1990 agriculture needed to use 91% of total water demand whereas industry and consumption was only 9%). However, water usage and exploitation are not reasonable and lack of sustainability that it has been caused decreasing in water resource while efficiency of water usage is still low, waste of water usage is popular in the whole country. For example, water demand for agriculture is the biggest in Mekong river delta and

Hong river basin, representing up to 70% of total water demand in other provinces like Nam Dinh. In fact, real irrigation areas is much lower than planned irrigation ones, only 68% of total irrigation areas in the whole country. It's proven that efficiency of water usage for agriculture is not high, not gaining more active achievements for GDP growth. In aquaculture, waste water from aquaculture processing plants and pollution from aquaculture cause water contamination, especially in Hong river and Mekong river basins. According to data of Nam Dinh's and Hanoi's Departments of Environment in 2014, it's estimated that economic loss by air pollution impacted on local health, every year cost about VND 295,000 per capita. Total cost of cough people in internal Hanoi is up to VND 1,530 per capita every day. Regarding as industrial production, industrial waste water contain a lot of contaminated chemicals when wasting into environment will affect much on quality of water resource. The most polluted water industrial productions are paper, chemicals, textiles, painting... In the whole of Vietnam, there are 154 industrial parks and big sized processing areas, but there are only 43 ones having waste concentrated processing system in spite of only meeting the demand of current waste processing capacity of about 70%.

Apart from, exploitation of hydro irrigation lakes is causing a lot of problems like water control in upstream, water supply and sustains environmental water discharges of downstream because most of them are not designed to have mission for flooding water into downstream areas in dry season. Ninh Thuan is the locality having the poorest volume of ground water, coastal delta in Ninh Thuan has thin watershed and lot of danger of salinization, therefore main water supply for provincial production and living depends on Cai Phan Rang river. However, Ninh Thuan has not enough water storage lakes in rainy season to dry season to save water and drainage when having floods, therefore droughts and floods in Ninh Thuan are very hard. Surface water in Ninh Thuan depends on rainfall, so

⁴ World Bank (2007), Economic Impacts of Sanitation in Southeast Asia, Water and Sanitation Programs – East Asia and Pacific (WSP-EAP), November.

discharge in rainy season is very abundant but in dry season, discharge of rivers and streams is being dried. In rainy season, high rainfall concentrates in the area for short time resulting in serious floods in the whole Ninh Thuan province. Water storage lakes like Song Trau lake, Ho Cho Mo lake, Phuoc Trung lake and Thanh Son lake also small and outdated designed capacity without enough capacity to store water in dry season and have to drainage in rainy season. According to the survey in fact, Ninh Thuan has undergone serious floods in 2010 and 2015 damaging a lot of ha of rice, onion..., destroying and flooding many houses, jamming traffic transportation and great economic losses.

IV. IMPLICATION FOR DEVELOPING COUNTRIES

In recent years, awareness of great losses resulting from insecurity of water source, Vietnam begins to recognize more properly about it. To protect and manage water resource, Law on water resource was issued in 1998 and amended in 2012. Parallel with these, many important regulations to protect water environment such as: Degree No 67/2003/ND-CP on fee of environmental protection for sewage; Degree No 149/2004/ND-CP on permitting explosion, exploitation and usage of water resource, drainage of sewage into water resource; Degree No 34/2005/ND-CP on punishing administrative activities related to water resource; Degree No 88/2007/ND-CP on 28/5/2007 on urban and industrial drainage; Degree No 112/2008/ND-CP on integrated management, protection and exploitation of resources and environment of water storage lakes, hydro powers; Degree No 120/2008/ND – CP on river basin management; Decision No 15/2008/QĐ-BTNMT on issuing regulations on protection of ground water resource; Circular No 02/2009/TT-BTNMT on regulation on assessing waste water approachment of water resource...According to the survey outcomes, in all localities, 94.8% of total surveyed people said that local authorities also had propaganda to raise awareness of saving water. The main ones consisted of disseminating knowledge (93.9% of total surveyed people answered that); frequently checking (51.4% of total surveyed people answered that); informing cost of water (2.9%) and quota of water (2%). However, regarding to economics, water resource hasn't been fully assessed efficiency of water supply and demand, essential investment to ensure economic growth and sustainable development, real losses resulting from wasting and polluting water, essential economic institutions to ensure water security. Beside to juridical regulations on water ownership, protection and management, it should need to analyze, assess and explain comprehensively water resource in aspect of economic factor to ensure sustainable development. Most of total surveyed people in three provinces like Hanoi, Nam Dinh and Ninh Thuan

recommended to build more tap water pipes (390/450 of total surveyed people answered that); advise to process water (272/450); improve water quality (249/450); support to dig wells (224/450) of which especially, constructing more tap water pipes and supporting to dig wells are very essential according to the evaluation of local people.

Due to the reality of water exploitation and usage in Vietnam, it should recommend some implications for developing countries.

Firstly, Vietnam is seen as the world hub of food, however it is able to cause into food crisis when loss of water if there is no solution to protect water resource reasonably. Global climate change is directly influenced all countries of which there is Vietnam. The United Nations awared that Vietnam is one of nations being affected the most by climate change and sustainable management of water resource is one of the most urgent issues.

Secondly, those who much depends on transboundary water resources like Vietnam and some different countries need to be positive to cooperate with neighboring countries to preserve water resource and create sustainable development for downstream ones.

Thirdly, target for economic development is essential but it should ensure water resource for sustainable development. The problems such as: health, diseases, poverty, social security are mainly related to water and expanded rapidly when water resource decrease. In the human history, there are a lot of conflicts and fights related to water among nations and communities. In the coming time, water is seen as the worthiest asset of every nation. That's why it's beneficial to invest into water to get "huge profits" for long time. In the past, Vietnam accepted to replace fresh environment by economic development, therefore it is facing a lot of challenges related to water resource for economic growth and development in the future.

Fourthly, water resource is not infinite and vulnerably effected by climate change, it have to be ready to response whenever having urgent changes. Vietnam is facing a lot of dangers of lossing water resource from inside and outside. Rising in earth temperature decreases surface water, it should be increase in exploiting replaceable ground water, rising in sea level make one part of inland flooded equivalent to limiting river network and saltination. Loss of water resource is in visionable danger. Parallel with different solutions to protect water resource, Vietnam has to make solutions to response negative impacts of climate change.

V. CONCLUSION

Thanks to the study and analysis, it's possible to say that water is not infinite resource. Scarcity of water or uncertainty of fresh water protection has been making Vietnam meet great challenges in socio-

economic development. In principle, water resource is not considered as common asset, but also commodity with commercial and economic values. All localities and nations must have solutions for investment and exploitation, management of water sources reasonably to be able to meet demand for long time and stable development, mustn't gain achievement of growth at once by accepting trade-off of insecurity of water sources. Price for pay will be expensive for nations and future generations. Water management in accordance with laws, policies and local community participation will help nations to use water resources the most effectively for socio-economic development.

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Money as a Medium of Exchange: Then and Now: Can Technology be a Facilitator of Exchange?

By Amaresh Das

Southern University at New Orleans, United States

Abstract- This paper deals with the origin of money through its function as a medium of exchange. Barter can give rise to money through necessitating the use of a standard of value even before calling for the use of a medium of exchange. In a given society at any point in time money is defined in principle simply as the subset of total financial assets and commodities which are actually performing monetary functions. Three main functions are usually suggested. Money is thought to be that which serves as a medium of exchange, standard of value and store of value. Defining money in a particular context would simply involve a judgment as to which items currently possess these properties to a greater or lesser extent. The paper also ascertains whether money originated through its function as a medium of exchange, can explain the dynamics of monetary exchange of most recent days. The paper also ascertains if technological changes can improve the efficiency of the trading process.

Keywords: *medium of exchange, standard of value, store of value gresham's law.*

GJMBR - B Classification : *JEL Code : E40, D51*



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Keywords: *medium of exchange, standard of value, store of value gresham's law.*

I. INTRODUCTION

Before attacking the complex monetary problems of a modern society it is best to arm oneself with a thorough understanding of the fundamental nature of money and its functions and the general framework of the monetary system. Only then one is equipped with the essential tools for attacking contemporary monetary problems. The assumption that money arose from the realization of the inconvenience of barter, popular as it is among economists, needs careful re-examination. This is what the paper principally proposes to do

a) *Money as a Medium of Exchange and as a Store of Value*

Money can act as the standard of value without actually becoming the medium of exchange. In primitive societies, for example, cattle was sometimes used as a standard of value but were not necessarily used as a medium of exchange. If the troublesome problem of 'double coincidence of wants' is to be avoided, some readily acceptable thing must be available as a go-between to bring about a smooth and effective exchange of goods. Some form of money, therefore, must be called into use to act as the intermediary or as

the 'medium of exchange'. It is not enough that there be a basis for comparing the value of things to be exchanged.

Keynes, being a leading exponent of the nominalist school which regards money primarily as a unit of account, attaches more importance to its standard of value function, stating that in itself the use of a mere medium of exchange would hardly have made us emerge from the phase of barter.¹ Although as a general rule the materialist school supports wholeheartedly the medium of exchange theory of the origin of money a few of its members endorsed the standard of value theory. Thus Laughlin, a leading monetary monetarist, stated that as soon as two or three articles entered the field of exchange, reference to a common denominator became imperative. As Laughlin says (1903, p7)

So natural is this operation of the human mind that the evolution of the standard concept must have preceded the concept of the medium of exchange. In fact, the whole history of money seems to show the existence of a tendency to use as a medium of exchange the article first chosen as a standard of value.

Another prominent member of the 'hard money school' Gregory takes a similar line.² According to the standard value theory of the origin of money, it is difficult to see how the medium of exchange could possibly have preceded in chronological order the standard of value, considering that the use of a medium of exchange necessarily implies the use of a standard of value. No nominalist could have put the case for the standard of value theory more forcefully.

There is almost an infinite variety of primitive monetary system, each obeying a particular set of values.

The economic system of the North American colonies in the early period was too primitive to make the use of coined money indispensable. The

¹ J. M. Keynes (1930

² As Gregory (1933, p 45) writes

The difficulties of pure barter were first overcome by the expression of values in terms of some common prized object before that object served as a medium of exchange and the qualities which fitted the commodity to serve as a common denominator of values would not necessarily fit it to serve as a given medium of exchange.

economy of the rural district was simple. Most settlers moved within a small radius and did not buy many things from outside. In the opinion of Nettels, early social arrangements were such as to make for the elimination of the use of modern money possible.

According to the standard of value theory of the origin of money, it is difficult to see how the medium of exchange could possibly have preceded in chronological order the standard of value, considering that the use of a medium of exchange necessarily implies the use of a standard of value. If an object comes to be used systematically as an intermediary in the exchange of goods and services, by its function its use implies consciously or otherwise the expression of prices in terms of the object concerned. It fulfills, therefore, the function of the standard of value. On the other hand, the use of a standard of value evidently does not necessarily imply the use of a medium of exchange. Indeed, as Gregory rightly pointed out, the need for a common denominator to facilitate barter must have been felt long before the increase in the volume and diversity of goods made the use of a medium of exchange imperative. So long as there were fixed exchange parities between the principal objects bartered against each other systematically, there were no imperative need for a standard of value with the diversification of products, services and requirements, however, the tariffs of fixed parties tended to become too involved, and the use of some common unit of account became increasingly necessary. There was a tendency to fix ratios in one particular unit or in several units convertible to each other on the basis of fixed parities,³

It seems probable that, in many instances, long before primitive man felt impelled to accept for his goods or services an object he did not require for his direct needs he must have come to be induced to value goods and services in terms of some fairly widely used object. This view is contested by Menger who believes that a primitive stage a common denominator was not necessary because early barter was not done for the sake of obtaining equal value, but for the sake of securing what was needed in return for what was in superfluity.⁴

³ In Iceland during the 14th century there existed an elaborate tariff of fixed parities expressed in terms of stock fish on the basis of which all barter transactions were effected. In communities where barter was based on free bargaining the need for a common denominator must have made itself felt at a relatively early stage.

⁴ Menger may be right so far as the very early phases are concerned. But then at such early phases the medium of exchange was equally unnecessary. The turnover of goods consisted at that stage largely of exchanges of presents. See Einzig (1947). So, standards of value may have been employed by primitive communities before the adoption of a medium of exchange, though not for the requirements of trade. According to this view money may have been employed even before the development of barter, for the purpose of valuing wealth which required the use of a common denominator.

India had primitive currencies which were in use for many centuries B. C. even in those parts of the sub-continent which had reached in advanced civilization. Almost all economic transactions in many villages were carried out without the use of money. When they happen to be rich in money they hoard it in coins which serve as ornaments. Until recently the use of modern money in remote villages in Uttar Pradesh was rare, whether for effecting exchanges or remunerating services. (Hodkin (1931, p 17).

It would seem that the assumption that money necessarily arose from the realization of the inconveniences of barter, popular as is among economists, needs careful re-examination. The medium of exchange theory of the origin of money appears sometimes in an extreme form which suggests that at a certain moment a deliberate decision to adopt money was made, when the increase in the volume of trade made barter conditions intolerable. Economic historians rightly denounce the idea of a deliberate decision to change the system of commercial exchanges as being fully as unrealistic as Rousseau's conception of the conclusion of a *contract social*. The suggestion made by Crowther (1940) that currency must have been the invention of a 'lazy genius' who could not be bothered with the complications arising from barter appears to be equally divorced from reality, while it is just probable that some communities out of untold thousands may have adopted money through the deliberate invention of one person or the deliberate decision of the community, the chances are that in the overwhelmingly majority of instances the evolution of money was an unconscious and gradual process. It is important that economists writing on the subject should realize that institutions such as the division of labor, or private property, or money, are not invented by some genius, lazy or otherwise, on a Sunday afternoon.

It is equally important to bear in mind that money was not invented once for all for the entire globe. While in many instances the institutions may have been copied by various communities from others, very often each community worked out its own salvation independently in its own way, without knowing anything about identical or similar solutions arrived at in other parts of the world. It is impossible to accept the application to money of the different conception implied in Crowther's remarks...

It seems certain that, while in many communities barter without the use of any kind of money continued long after the system had become cumbersome owing to increase in the commercial turnover, in other circumstances some form of money was adopted long before this became absolutely necessary or particularly advantageous from the point of view of the interchange of goods. Apart from instances

in which money was first adopted for purposes other than trade, even its premature developments out of barter is conceivable at a stage when the community could well have retained the more primitive method of moneyless trading. Money tends to develop automatically out of barter, through the fact that favorite means of barter are apt to arise. A stage is usually reached when the use of one of the means of barter becomes so widespread that it may be said to have become a medium of exchange. This process was aptly described by Menger who realized the inadequacy of the conception under which pure barter is supposed to have continued until it reduced itself to absurdity through the expansion of turnover, and was then replaced by money⁵

Metallic money was not unknown in Japan in 700 A.D. In A.D. 713 tax was payable in copper. In the 10th century gold dust became a medium of exchange. At first it was put in a small bag of convenient size (ten ryo). But later it was realized that gold dust often dripped from the mouth of the bag, so it was melted into gold bars and used by weight, the bars being cut as required. The use of gold dust and gold bars continued even after the adoption of coinage, as there were not enough coins. (Takizawa (1927, p 95).

An intermediate stage in the progress from pure barter economy – under which goods are acquired for direct consumption only – to money economy is the employment of some favorite medium of exchange⁶. It seems probable that when money developed out of barter it did so not because barter had become intolerable through an increase in the commercial turnover, but because more and more people found convenient to use the same intermediate goods in their transactions. This may appear to be saying the same things in a different way. In reality there is an essential difference between the negative approach used by many generations of economists who attributed the origin of money to the intolerable inconvenience of barter that forced the community to adopt a reform, and the positive approach suggested here, according to which the method of exchange was improved upon

⁵ Turner (1929) ridiculed the assumption that primitive communities are necessarily gravely handicapped in trade by the difficulty in effecting direct exchanges between the original producer and the ultimate consumer. He pointed out that if the would-be buyer of certain goods are unable to find a seller to accept his goods, he could always improve his bargaining position by swapping his goods against other which were more easily exchangeable. If even these goods did not serve his purpose adequately he could swap them against other goods even more easily acceptable until he gained possession of the right kind of goods with the aid of which he could acquire the goods he really needed.

⁶ The increasingly frequent use of one particular medium of barter tended to raise its status gradually and imperceptibly to that of a medium of exchange.

before the old method became intolerable and before an impelling need for the reforms had arisen.

b) *Money as a Store of Value*

When economists are engaged in a controversy on the question whether the function of money as a medium of exchange preceded its function of money as a standard of value, they are inclined to overlook or under-rate the claim of the store of value function. This is probably due to the fact that an object that is used as a store of value cannot, by that reason alone, be considered as money. It need not necessarily be suitable even subsequently to assume the role of money; many non-monetary objects which are capable of fulfilling the function as a store of value are precluded by their nature from assuming that role.

Jevons (1875) was among the few economists who realized the full significance of the store of value function of money and the possibility that chronologically it may have preceded the other monetary functions. As he writes:

The use of esteemed articles as a medium for conserving value may in some cases precede their employment as currency. Historically speaking, such a generally esteemed substance as gold seems to have served firstly as a commodity valuable for ornamental purposes; secondly, as a store of wealth; thirdly as medium of exchange, and finally as a measure of value. (p 16)

He quotes instances for the use of gold in the Homeric period as a store of value and points out that it was not until a later period that it replaced oxen as a common measure of value. His observation conveys the impression that he considered it essential for an article to be used for ornamental purposes before it could become a store of value.⁷

A detailed examination of the origin of money through its function as a store of value is provided by Rist ((1940) who copiously quotes from Keynes (1930). He famously quotes a remark by Keynes.

The importance of money essentially flows from its being a link between the present and the future. (Keynes, p 293).

Rist rightly points out that when money loses its capacity to serve as a store of value function – the day paper money begins to depreciate at a rapid pace – it becomes less suitable for acting as a medium of exchange even though it does not altogether lose its capacity of serving that purpose. After both World Wars people in various countries reverted largely to barter, or to the use of primitive money, because their paper money ceased to be suitable to fulfill the function of store of value. Holders of goods were reluctant to

⁷ This is by no means necessarily so. Goods such as wheat, oxen, smoked fibre mats, etc., were used as a store of value even though they could not be described as ornamental

accept notes even for a few hours and preferred to employ as a medium of exchange goods capable of playing the part of a store of value. Rist makes it quite clear that an object cannot satisfactorily fulfill the function of a medium of exchange unless the recipients are prepared to hold it temporarily at any rate in its capacity of a store of value.⁸

c) *Gresham's Law*

If two or more different kinds of currencies are legal tender, and have a fixed ratio in relation to each other, then the one which is over-valued compared to its free market price is apt to remain in circulation while the under-valued one is likely to disappear. This later came to be known as Gresham's Law. The principle that bad money drives out good money operates in another sense. During periods of debasement the debased currencies are apt to remain in circulation while the full-valued currencies are apt to disappear through hoarding, industrial use or export. There are many instances in the evidence on the behavior of primitive currencies to show that Gresham's Law applies to them in both senses. On the other hand, in many other instances primitive currencies have defied Gresham's Law. An instance of the operation of Gresham's Law is provided by India and Burma where until comparatively recently rice served as a medium of exchange, and only inferior rice remained in circulation. Yet, another instance of the same kind is that of tobacco currency in Virginia, the use of which led to a market determination of the quality of tobacco produced for the requirement of monetary circulation.⁹

The operation of Gresham's Law in primitive societies, however, at a more advanced data is at times apt to be handicapped by the lack of adequate export facilities. The use of some primitive currencies is confined to a particular community and cannot be exported at all. The dual character of many primitive currencies facilitates the operation of Gresham's Law. If one of several currencies in use becomes over-valued it is apt to become diverted to non-monetary use and the under-valued currencies remain in circulation.

⁸ This does not necessarily mean, however, that their function of store of value is always the origin of its other functions. Indeed, since a time lag must necessarily elapse between the acceptance of money in payment and its subsequent use in payment, be it only a few days, or a few hours or, even a few minutes. During the Second World War the depreciation of the Chinese paper money assumed such proportion that sellers of goods were unwilling to keep it as a store of value even for the briefest possible period.

⁹ This is also true of other commodities serving as currencies in the old American colonies. There was also a tendency for inferior, badly strung or faked wampum to remain in circulation among the colonies, for the simple reason that in trade with the Indians only perfect specimens were accepted. The working of the cigarette standard in prisoner's camps during the Second World War also illustrated the functioning of Gresham's Law. Usually the cigarettes of favorite brands disappeared; they were either consumed or hoarded. Only less popular brands of hand-filled cigarettes remained in circulation. See Bagehot (1915).

II. MONEY AND THE MEDIUM OF EXCHANGE

The standard of view of money, that is primarily a technical device for overcoming the inefficiency of barter, led on naturally to the characteristic dual perspective on the relationship between money and real economic activity, which is found in most mainstream monetary and macroeconomic theory. Although the existence of money is accepted (seemingly grudgingly) as part of the background of economic institutions, monetary changes *within* a given framework are still regarded as essentially neutral.

a) *Is Money Neutral? the Role of Technology*

The 'invention' of money must at one time have had some sort of impact in moving the economy away from the original state of barter; but there is no further ongoing relationship between money and real economic activity. Money is, therefore, at once very important and yet unimportant, Trautwe in (1993) puts this nicely when discussing 'the standard view of money as a requisite but essentially neutral lubricant of economic activity. The reason for this shift is not difficult to find. The orthodox economic theory of the latter part of the twentieth century is essentially *Walrasian* in the sense that a framework is adopted in which the coordination of exchange activities in a general equilibrium setting is seen as unproblematic. Models based explicitly or implicitly on Walrasian 'microfoundations' therefore have no real role for money to play. ((Laidler (1990), Hahn (1983)). The Walrasian auctioneer provides a (fictitious) method of coordinating activities in a market economy without the need for any other agency, and it is hardly surprising that models that easily solve problems of information and coordination in this way can find no role for money (Bell (2001)..

Another way of putting the point would be to say that technological advances can be assumed to make the Walrasian vision of the economy a potential reality instead of just a convenient theoretical fiction. With the advance of technology. most recent modelling efforts involving search, storage cost, 'shopping time' and so on, obviously do intend to remedy this particular defect but again fit awkwardly into a structure which originally presumed to solve all such problems *a p r i o r i s* relative price signals. In the primitive communities, exchange of goods would have required barter between agents with coincident endowment and wants. However in modern day at an advanced level of division of labor, one may trade by getting something one does already possess but which, as judged from past history, one will be able to sell later easily to others. For a suitable range of the number of units per trader and the number of differentiated products available, traders have enough holes in their inventories to barter, but, after sometime trades involving money play an important role; and sometimes no trade at all is possible in an encounter of two randomly selected traders. Which product evolves

as the most desired 'money' thus depends on the random dynamics of the market, without outside interference and without any special property of that product at the beginning.

This result conforms to statistics where 'everything' can be described by randomness, whether it is Boltzmann statistics for thermodynamics, the build-up of social hierarchies or the value of the European currency. Economists might regard this view as oversimplified. For a recent model, the time dependence could be quantified: a stationary state is reached if every trader has several chances to trade with every other possible trader., the distribution of times for which one currency stays on top then appears to follow a stretched exponential. Other models of statistical mechanics of money' are discussed in Stauffer (2001).

Looking up contributions such as the work by Jones ((1976) or the seminal paper by Kiyotaki and Wright ((1985), one finds almost the same structure of analysis. Following then the prevalent style of reasoning in their subject they were theoretical investigations into the nature of equilibria in an economy with a large number of goods rather than a truly dynamic model of the emergence of money. The question pursued is under what conditions one would find a 'monetary equilibrium' in which one of the available goods emerges as a medium of exchange and under what conditions the economy remains stuck in a situation of barter trade. Like in many other areas in economics, the demonstration of the existence of multiple equilibria (barter vs monetary equilibrium as well as different monetary equilibria) pointed to the necessity of investigating out-of equilibrium dynamics.

To give the reader a feeling of the typical approach pursued in economics in modern days we give a short sketch of the basic ingredients of the seminal Kiyotaki and Wright model that has stimulated a whole branch of recent economic literature. The setup is, in fact, more of an example than that of a general model of a multi-good economy. In particular, it is assumed that there are three commodities in the economy which are called goods 1,2,3. there is also an infinite number of individuals who specialize in both production and consumption: type i . [$i = 1, 2, 3$] agents derive pleasure (utility) only from the consumption of good i and are able to produce only good $i \mp j$.

A typical example used in many of the pertinent contribution has the following structure of consumption and production:

| | | | |
|------|---|---|---|
| i | 1 | 2 | 3 |
| i' | 2 | 3 | 1 |

This implies that there is no 'double coincidence of wants' in the economy. Therefore, intermediate

trading of goods by agents who do not desire them as consumption goods is required for the satisfaction of the need of these agents. It is furthermore assumed that in every period there is a random matching process that assigns every agent to a pair with one other agent within the economy. Pairs of agents then have the chance to trade with each other (exchange their goods).

In the theoretical papers on this subject, the focus is on the detection and characterization of steady state Nash equilibria.: sets of trading strategies of each type of agents together with the steady state distribution of goods resulting from these strategies, so that each individual maximizes its expected utility under full information (rational expectations) about the strategies pursued by other individuals. There are also storage costs per period for goods that are not consumed by their owners. The distribution of both the instantaneous utilities derived from consumption and the storage costs are crucial for the types of Nash equilibria that exist in the model. These goods with lower storage costs are, then, more likely to emerge as 'moneys' due to their more convenient properties. A particular interesting situation is the coexistence of the so-called 'fundamental' and 'speculative' equilibria. In the former, only goods with lower storage costs are accepted by the agents, while in the latter case some low-storage costs are also traded against high-storage commodities. The second case¹⁰ is the most interesting one as it corresponds to the 'emergence of money'; certain goods are not traded not because of their intrinsic values but purely because they are accepted by other agents.

¹⁰ To solve the steady state equilibria requires us to consider the development of expected lifetime utility for each group of agents:

$$E \sum_{t=0}^{\infty} \beta^t [I_i^u(t) U_i - I_t^D(t) D_t - I_{ij}^C(t) C_{ij}]$$

Where U_t is the instantaneous utility from consumption, D_t the instantaneous disutility, C_{ij} the storage costs of goods j for types i , $\beta < 1$ is the discount factor and I_i^u , I_t^D , I_{ij}^C are indicator functions assuming the value 1 at any period t in which consumption, production or exchange take place and 0 otherwise. Bellman's approach in dynamic programming allows us to express this problem in terms of value function of certain states. For example,

$$V_i(j) = -C_{ij} + \max \beta E [V_i(j)' | j]$$

could be used to denote the value for an individual of group i to currently own one unit good j . The value $V_i(j)$ of this scenario consists of an instantaneous disutility, $-C_{ij}$ the negative storage costs incurred by this agent plus the discounted value of the expected change in its situation in the next period, $E [V_i(j)' | j]$.

III. CONCLUDING REMARKS

It seems to be a mistake to assume that barter became reduced to absurdity at an early phase of economic progress. The chances are that in the majority of communities it survived long after its replacement by some form of monetary system became possible through technical and, of course, intellectual progress. Notwithstanding the limitations of the store of value theory, it undoubtedly contains a large part of the truth, and it is indispensable for an understanding of the evolution of money. Although recent direction toward a dynamic monetary exchange further facilitate our understanding of money, any rigorous derivation of the type of Nash equilibria outlined above is still a combinatorial nightmare. A fact that is liable to impress one more than anything else as a result of a study of the background to primitive money is the possibility of a wide variety of causes leading to the same solution, and of the same cause leading to a wide variety of solutions.

A comprehensive approach to the basic nature and functions of money, then, suggests that the origin of money lie, not so much in the need to eliminate the inefficiency of barter in an exchange economy but in social practice. There is an evolutionary aspect to the relationship between the monetary and credit systems as first suggested by Moore's distinction between commodity money, fiat money and credit money and Chik's identification of five stylized 'stages of banking' in the evolution of the modern financial system.

Advocates of technology-based 'free banking' which refers to the elimination of what is seen as government 'interference' in currency and banking affairs, have stressed the medium of exchange function and hence criticized the recent monetary economics (NME) on these grounds, even though sharing with the latter group a preference for *laissez-faire* in the financial services industry. For example, many monetarists assert the relevance of Menger's (1892) approach even in the present day Menger's theory attempts to explain the convergence of a market system on a common monetary standard purely in terms of the self-interest of traders in the system, and without the need to invoke any form of legal or social restrictions. An 'invisible hand' argument is used to suggest that trader's interest in reducing transactions costs will prompt eventual convergence on a single commodity as the standard. Technological changes can certainly improve the efficiency of both the trading and accounting process and also change the external form of the various assets into which the necessary 'trust and confidence' may be reposed. It is doubtful, however, that technology alone will succeed in eliminating the basic features of a modern day monetary problem.

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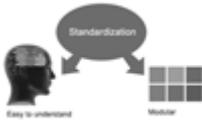




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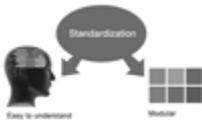


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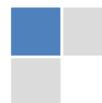
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27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

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

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

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

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

Final Points:

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

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



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

General style:

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

To make a paper clear

- Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

- Use standard writing style including articles ("a", "the," etc.)
- Keep on paying attention on the research topic of the paper
- Use paragraphs to split each significant point (excluding for the abstract)
- Align the primary line of each section
- Present your points in sound order
- Use present tense to report well accepted
- Use past tense to describe specific results
- Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives
- Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

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



Abstract:

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

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

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

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

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

Introduction:

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

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

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



- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently. You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.



Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

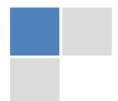
Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.



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|-------------------------------|--|---|--|
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| <i>Introduction</i> | Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited | Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter | Out of place depth and content, hazy format |
| <i>Methods and Procedures</i> | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads | Difficult to comprehend with embarrassed text, too much explanation but completed | Incorrect and unorganized structure with hazy meaning |
| <i>Result</i> | Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake | Complete and embarrassed text, difficult to comprehend | Irregular format with wrong facts and figures |
| <i>Discussion</i> | Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited | Wordy, unclear conclusion, spurious | Conclusion is not cited, unorganized, difficult to comprehend |
| <i>References</i> | Complete and correct format, well organized | Beside the point, Incomplete | Wrong format and structuring |



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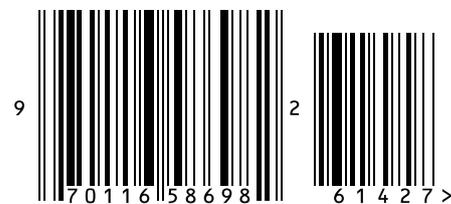
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ISSN 9755853

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