Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.6, No.11, 2015

Commercialization through Market Participation: Analysis of Factors Determining Butter Market Participation and Level of Supply, Tigray Region, Ethiopia

Embaye Kidanu Kindeya
Tigray Institute of Agricultural Research, P.O.BOX: 492, Mekelle, Ethiopia
E-mail: embayehiwot@gmail.com

The research is financed by International Livestock Research Institute (ILRI)/Improving Productivity and Market Success (IPMS) of Ethiopian farmers' project

Abstract
Market participation is both a cause and a consequence of economic development. Markets offer households the opportunity to specialize according to comparative advantage and thereby enjoy welfare gains from trade. Empirical analysis of the determinants of smallholder market participation has to deal with the econometric hazard of selection bias. The problem arises because households (or individuals) face different types of decisions in relation to market participation, a discrete decision over whether or not to participate in a given market, and a continuous decision as to how much to sell conditional on market participation. following the Heckman two-step approach, the first step is to estimate a Probit model of participation in the relevant market as a function of both those variables that likely also determine butter sales volumes, conditional on market participation, as well as one or more exclusion restriction variables. The study was aimed at identify factors determining butter market participation and supply. Accordingly, the econometric result of market participation decision indicated butter yield, number of extension visit, market information access, family size, distance to nearest market and distance to development center are the significant factors affecting butter market participation. Similarly, quantity produced, distance to nearest market and distance to development center are significant factors affecting level of supply. Based on the study findings, institutional services, butter productivity and spatial setting are main determinants of butter market participation and volume of trade. Therefore, more attention is needed for investments in development of physical infrastructure, communication and road networks. It is also important develop farmers awareness and decision making capacity through training. Institutional arrangements like cooperatives can also be very successful in dealing with both information asymmetries and easily attain competitive edge. In addition, extension agents service should go beyond production technique and therefore should address issues related to marketing, saving and finally commercialization of butter will be achieved.
Keywords: butter supply, market participation, Heckman's two step model

1. Introduction

In the realm of economic growth, markets may provide the incentives to profit maximizing participants to develop new technologies, products, resources of supply, new markets and methods of exploiting them. Agricultural marketing acts as an agent of rural development. Moreover, agricultural marketing will play a coordinating rule, steering supply and demand with respect to place, time and form utilities. If the production system works efficiently, it produces suitable incentives to meet consumer's needs more accurately in terms of type, quality and quantity of supply. Production is thus adapted to the need of consumers in response to price signals transmitted by the marketing system (Vincent, 1967). Similarly, Ethiopia ranked first in cattle population in Africa but the dairy industry is not developed even as compared to east African countries like Kenya, Uganda, and Tanzania. Regarding dairy production, the national milk production remains among the lowest in the world, even by African standards (Zegeye, 2003). As the current development in the country is characterized by rapid population growth in general, the demand for dairy products is increasing as ever. However, the current levels of contributions of the livestock subsector in Ethiopia, at either the macro or micro level is below potential. The levels of foreign exchange earnings from livestock and livestock products are much lower than would be expected, given the size of the livestock population (Berhanu *et al*., 2006). In addition, policy decision on milk and milk product marketing are taken in the absence of vital information on how they affect dairy producers, traders, exporters, and consumers. Similarly, current knowledge on dairy product market structure, performance and prices is poor for designing policies and institutions to overcome the perceived problems in the marketing system (Ayele *et al.,* 2003). Moreover, as milk transaction is not common in the rural areas of the region, butter is found to be a sole marketable commodity of dairy products for the small scale farmers. Furthermore, butter is an important cash source for household consumption expenditure in the region. Based on this ground, for progressive development of the dairy sector, then households' income generation and transformation the small-scale and subsistence producers to commercial operators, investigation of determinants of butter market supply

needs to be carried out, as there was not done such research in this area. Therefore, in line with the market-oriented production strategy of the country's policy, the study is intended at bridging the information gap with regard to butter market and commercialization.

2. METHODOLOGY

2.1. Sample Size and Procedure

There is no ironclad rule to help one determine the number of interviews required for each stage or segment of the supply chain. The establishment of fixed procedure could prove excessive for same segments of the study and insufficient for others. Sampling by segments without size limits established initially can simplify things as a result prior determination of the number of respondents is set to each category of respondents. By adopting the proportional random selection method, 200 butter producer households from the two districts and total of 56 traders at different levels were selected from the three markets.

In order to achieve these goals, a two stage sampling procedure was adopted. The first stage involved the random selection of rural *peasant associans* in the study sites. Based on the distribution of population, a total of 21 *peasant associans* from two zones(eastern and southern) were selected. These criteria were adopted because they determine largely the behavior of butter marketing system of the region. The second stage of sampling involved the selection of respondents. Once the list of butter producing household in each selected *peasant associations* was obtained, household heads were selected proportionally using the random selection method. Accordingly, total of 200 butter producer households were selected.

2.2. Method of analysis

If two decisions are involved, such as participation and level of supply, Heckman's two-stage estimation is the recommended econometric model. This model allows the producer to choose whether to participate in a particular market, and if so, to choose the level of supply. Thus, a Heckman (1979) two-stage procedure is used in which the inverse Mill's Ratio is calculated from probit estimation of decision to sell and introduced into the supply equation.

2.3. Procedures for estimating butter market participation decision and level of supply

Ideally, the OLS is applicable to determining factors that affect the level of participation. However, some households may prefer not to participate in a particular market in favor of others, where as others may be excluded because of market conditions or households resource constraints. If OLS regression is estimated while excluding the non-participating from analysis, a sample selectivity bias is introduced into the model. Such a problem can be overcome by following two-step procedure, as suggested by Heckman (1979). In this study, therefore, the Heckman's two-stage selectivity model is used to investigate the factors that influence the probability of being participated in butter marketing. While secondly estimating the factors affecting the level of supply using OLS.

The first step of Heckman procedure establishes the probability of participation in the output market. For the individual producer, the decision to participate or not to participate in Butter marketing can be formulated as binary choice model that can be analyzed using the probit equation below. The empirical specification of the probit model to be estimated by maximum likelihood estimation is defined as:

$$BMP_i^* = X_i\beta + \varepsilon_i$$

$$BMP_i = 1 \text{ If } BMP_i^* > 0$$

$$BMP_i = 0 \text{ If } BMP_i^* < 0$$

Where, X_i = vector of explanatory variables

β = is the vector of parameter coefficients

BMP_i^* = is the estimated market participation probability

ε_i = Random error term for the selection equation

The probit functional form compels the error term to be homoscedastic because the form of probability depends only on the difference between error terms associated with one particular choice and other (Amemyia, 1985). The marginal effects were estimated on the variable means. This calculation involves taking the partial derivatives that measures the change in the probability of participation per unit change in the independent variable.

The second stage of heckman's two stage procedure for this study is specified as:

$$BMS_j = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 ..... + \beta_n X_n + \eta_n \lambda_n (X_i\beta)_j + \varepsilon_j \quad (5)$$

Where

BMS_j= volume of market supply by the jth producer

X_j = exogenous variables in the second stage

β_j = parameter coefficients

$\lambda_j (X_i\beta)_j$ = the Inverse Mill's Ratio derived from the first stage

ε_j = error term in the second stage

In the second stage, the model parameters were estimated by ordinary least square (OLS) estimates.

3. RESULTS

3.1. Butter production characteristics

Butter, an important source of food, cosmetics, cash income and common marketable form of dairy product in the study areas, constitutes a lifelong production activity. The farm household, also known as small-scale dairy producers, uses too traditional and inefficient technologies for producing and management of butter. The main input used in butter production is milk that households usually get from their own cows, in which their number ranges from a single cow per household up to several cows. About 79% of the milk for butter production comes from cows of local breed in which their average productivity (1.99 liters of milk per cow/day) is very low and limited amount from cross breed cows introduced by BoARD, relief society of Tigray (REST) and market. Even if cross breed cows more productive than the existing local breed cows, they are still small in number in the study districts. The farmers use their own produce feed, which is straw from cereal crops, hay, green forage and grass of communal grazing. The availability and quality of feed in these districts was described to be low, less nutrient, and limited supply in markets. 72.5% of the farm households pointed out as they face shortage of feed from year to year and they fill the gap by borrowing from neighbors and purchasing from local markets. Like most smallholder dairy production system of Ethiopia, family members are the only source of labor for any dairying activities in the study area.

3.2. Socio-demographic characteristics of butter producer households

Of the total interviewed butter producer farm households (N=200) 81.5% are male-headed and the rest 18.5 % were female-headed households. About 51% of the respondents range under age category of 45-64.99 years and 45%, 4% are under the category of 20-44.99 and 65 and above respectively. The average family size, which is a composition of different age groups, was 6.5, and average economically active labor force of the households is 3.8 person-days as measured in man equivalent. With respect to educational status of the household head, the 40.5% of butter producers of the study areas were literate to read and writes. The overall proportion of illiterate farmers was 38.5% of the total respondents, about 20% and 1% are elementary completed and high school educated households respectively. Un like Atsbi Wonberta district, in which religion of the whole sample farmers (N=100) were orthodox Christians, Alamata district's sample households religion were 70% and 30% for orthodox Christians and Muslims respectively.

3.3. Determinants of butter market supply

Recognition of the potential of markets as engines of economic development and structural transformation gave rise to a market-led paradigm of agricultural development. Therefore, the aim of this section is to look at factors that affect market supply of butter. Some households may not prefer to participate in a particular market in favor of another, while others may be excluded by market conditions. Based on the data collected in the survey year, out of 200 butter producer households 39 of them are non-participants while the rest 161 are market participants. As a result, employing OLS to estimate the model may introduce a sample selectivity bias and the parameter estimates may not consistent and efficient. Therefore, following a two-stage procedure as suggested by Heckman (1979) procedures can overcome the problem of sample selection bias.

The first step of the procedure involves establishing the probability of participation in the output market by estimating a probit model. The level or magnitude of sales can be estimated readily by OLS model. Before running the Heckman selection models, normality of the data, multicollinearity and heteroscedasticity test was carried out. The continuous explanatory variables were checked for multicollinearity using Variance Inflation Factor; while Contingency Coefficients were used to detect the degree of association among the discrete explanatory variables. According to the results, significant problems of normality, multicollinearity and heteroscedasticity were not observed. Likewise, endogeneity test was carried out for the explanatory variables

and only frequency of extension contact and access to credit were endogenous variables. As a result, their predicted values were used to estimate the model by adopting the instrumental variable method.

3.3.1. Determinants of butter market participation decision

Heckman's model of market participation provides insights into the effect of socio-economic variables and transaction costs related to the market participation and level of participation. These transaction costs affect the marketing process in two ways. Firstly, the fixed transaction costs affect the decision of the households to either participate or not. Secondly, the variable transaction costs affect the level of sales of butter Goetz (1992). It is represented that choice by the indicator variable BMP, which takes value one if the household enters the market for butter, and zero otherwise. The model of decisions to sell identifies characteristics that stimulate households to sell butter as opposed to those who do not.

Table 2 presents the results of the probit estimations of factors significantly influencing the decision to sell butter. The model correctly predicted 95% of the observations, with significance chi-squared of 134.089. Six of the hypothesized variables had coefficients that are significantly different from zero. Three of the variables were positively associated with the probability of selling butter. The quantity of butter produced, frequency of extension agent contact and market price information increased the chance of household selling butter. The other three significant factors were negatively associated with the probability of participating in butter markets. The family size, distance to the nearest market and distance to development center tended to decrease the likelihood of selling butter. All the significant variables had the expected signs.

3.3.2. Level of butter market participation

With the Heckman two-step approach, the first step is to estimate a Probit model of participation in the relevant market as a function of both those variables that likely also determine butter sales volumes, conditional on market participation, as well as one or more exclusion restriction variables (Wooldridge, 2006). With regard to this study, the exclusion restriction variable was made on market information access. This was done based on the ground that participant households are informed regarding butter markets. Likewise, the farmers are subsistent operators, they sell their product to cover their liquidity constraint, as a result, their decision how much to sell is made independent of the information they have. After they already decide to sell, the level is made irrespective of the market information. Therefore, market information determines whether to participate or not, however, once they decide to sell based the information they have the quantity supply decision is made independent of their market information knowledge. Study conducted by Goetz (1992) on food marketing behavior identified better information significantly raises the probability of market participation.

The second step is an OLS regression of the butter sales volume on the reduced regressors and the inverse Mills ratio (IMR) derived from the first-stage probit regression, which controls for the probability of market participation so that the remaining regressors are explaining sales volumes conditional on a given probability of market participation. As indicated in Table 3, the results of the determinants regarding the level of butter market participation. The R-square and adjusted R-square are respectively, 98% and 97.8%, with the overall significant fit F-value of 508.42. The inverse mills ratio (lambda) for the level of butter sales was significant, implying that a sample selection bias would have resulted if the level of sales in butter market had been estimated without taking into account the decision to participate in the butter markets. Three variables had coefficients significantly different from zero. The distance to the nearest butter market, distance to the nearest development center and quantity of butter output are significantly determining the level of butter sale among the participating households. Quantity produced have positive and highest marginal effect, on the contrary, distance to the market and distance to the development center have negative impact on the level of butter sales.

With respect to distance to the nearest market center, the closer the market, the lesser would be the transportation charges, reduced trekking time, reduced loss due to spoilage, and reduced other marketing costs, better access to market information and facilities. This improves return to labor and capital and increase farm gate price and the incentives to participate in economic transaction. Therefore, as it was hypothesized this variable is negatively and significantly related to market participation and marketed surplus. A study conducted by Holloway *et al.,* (1999) on dairy products market development in the Ethiopia highlands indicates that distance to market causes marketed surplus to decline. Similarly, study conducted by Wolday (1994) on food grain market in Alaba Siraro identified that poor access to market and volume of food grain supplied to market related negatively. This implies that the level of sales would be increased if the variable transaction costs could overcome through urbanization or expansion of market to the vicinity of butter producing households. The variable transaction costs will be reduced if the markets would be located closer to the farmers. Distance from the village to the development center is again significant with a negative sign, reflecting the lower quality of service provision by institutions in more remote areas (e.g., late delivery of information, equipment, and poor supervision of extension workers). A marginal increase in butter production also has positive and significant effect in level of butter market participation. Part of the product may be used for home consumption or sales. This indicates, as output of butter increases quantity of butter sale will increase due to output left from consumption or marketable surplus will increase. At the same time, the transaction cost of taking small quantity

of butter to market is higher than selling large quantity. Consequently, households producing more found to increase their quantity of butter sale than those whom with lower butter output.

4. Conclusion

The farmers are generally poor and contribute inadequately to the mainstream market because of a low production and poor access to other options for obtaining a livelihood. It is found, however, that these farmers can survive economically when given a set of opportunities to transform them from subsistence to commercial operators. The econometric result of heckman's two stages clearly indicates that a marginal increase in butter output increases both market participation and level of supply. This is because farmers' decision to participate in the market and to increase their level of participation is normally driven by the availability of surplus produce. Similarly, positive and significant relation of frequency of extension contact on participation decision might be on reflection of market extension services rendered to smallholder should be relevant and enough. However, with major thrust of extension agencies on production techniques, marketing extension so far has not received the attention, as it deserves. Moreover, farmers have increasingly begun to perceive marketing rather than production as the major constraint to enhancing farm incomes. Marketing extension was a peripheral issue in the extension scenario so would need to be brought to centre stage and production needs to be significantly dictated by market requirements. Another need is enlightening the producer seller on consumer preferences and to advise them on the proper methods of processing for marketing, storing, packaging, handling and transporting and to improve the quality of the produce to secure a better return. An implication for negative effect of distance to nearest market might be, the closer the market, the lesser would be the transportation charges and other transaction costs, better access to market information and facilities. This call for investment in a good physical infrastructure is of the essence if smallholder participation in the markets is to be encouraged. Markets should be brought closer to the farmers in order to address the problem of proximity to markets. This can be done by establishing market infrastructure that includes collection points and/or a transport system. This strategy can cater for the emergence of transport contractors, the opening of road networks, the development of collection points, and investment in road infrastructure. Furthermore, the negative sign of distance to development center also reflecting the lower quality of service provision by extension institutions in more remote areas (e.g., late delivery of information, equipment, and poor supervision of extension workers). The link between extension services and farmers could be enhanced by improving the farmers' access to and the use of telephone networks and/or road networking coupled with transportation facilities to and from the development center. This could be instrumental for farmers to contact development workers and information centers.

Acknowledgement

Thanks to the International Livestock Research Institute (ILRI)/Improving Productivity and Market Success (IPMS) of Ethiopian farmers' project for granting the research fund and other different services during the research work. I forward my thanks to the Tigray Agricultural Research Institute for providing logistics and materials needed for the study.

References

Amemiya, T., (1985). Advanced Econometrics. T.J. Press Padstow Ltd., Great Britain. 205p

Ayele Solomon, Assegid Workalemayehu, Jabbar MA, Ahmed MM and Belachew Hurissa, (2003). Livestock marketing in Ethiopia: A review of structure, performance and development initiatives. Socio-economic and Policy Research Working Paper 52. ILRI (International Livestock Research Institute), Nairobi, Kenya. 35 pp.

Berhanu Gebremedhin, Hoekstra D. and Samson Jemaneh, (2007). Heading towards commercialization? The case of live animal marketing in Ethiopia. Improving Productivity and Market Success (IPMS) of Ethiopian Farmers Project. Working Paper 5. ILRI (International Livestock Research Institute), Nairobi, Kenya. 73 pp.

Goetz, S. J., (1992). A Selectivity model of household food marketing behavior in Sub- Saharan Africa. *Amr. J. of Agric. Economics.* 74(2): 444-52.

Heckman, J.J., (1979). Sample selection bias as a specification error. *Econometrica*, 47:153-

Holloway, G, Charles Nicholson, C, and Delgado, C., (1999). Agro industrialization through Institutional Innovation: Transactions Costs, Cooperatives and Milk-Market Development in the Ethiopian Highlands. Mssd Discussion Paper No. 35

Varnet Vincent, (1967). The Dynamics of Economic Development: Long Cycles and Industrial Growth. University of North Texas.

Wolday Amha, (1994). Food Grain Marketing Development in Ethiopia after the Market Reform1990: A Case Study of Alaba Siraro District. PhD. Dissertation. Verlag Köster; Berlin.

Wooldridge, Jeffrey. 2006. Introductory Econometrics: A Modern Approach. Third Edition. South-Western

College Publishing.

Zegeye Yigezu, (2003). Imperative and challenges of dairy production, processing and marketing in Ethiopia. In: Jobre Y and Gebru G (eds), Challenges and opportunities of livestock marketing in Ethiopia. Proceedings of the 10th annual conference of the Ethiopian Society of Animal Production (ESAP) held in Addis Ababa, Ethiopia, 22–24 August 2002. ESAP, Addis Ababa, Ethiopia. pp. 61–67.

Table 1. Butter production characteristics

		Districts		
		Atsbi-wemberta N=100	Alamata N=100	Total N=200
Inputs		ty		
		%N	%N	%N
Lactating cows	Only Cross breed cows	9	2	5.5
	local breed cows only	63	78	70.5
	Both local and cross breed	28	20	24
Butter cash allocation	Household consumption	47	46	46.5
	Educating children	10	12	11
	To buy feed	7	10	8.5
	To buy house furniture	1	2	1.5
	Saved	3	2	2.5
	Clothing expenditure	1	1	1
	Consumption and saved	5	4	4.5
	For feed, food and clothing	7	3	5
Source of labor for butter production	Family	99	100	99.5
	Hired	0	0	0
	Hired and family	1	0	.5
Butter Churning material	Pot (traditional)	99	100	99.5
	Modern churner	1	0	.5

Source: households survey

Table 2. Probit results of butter market participation decision (first stage)

Variables	Coefficients	Marginal effect	t- ratio
CONSTANT	2.7176 (2.1143)	.029594 (.03669)	1.285
ACCESS TO CREDIT[a]	-.1772 (.48461)	-.0019305 (.005788)	-.366
butter produced(kg)	.047962** (.017892)	.00079** (.00053)	2.68
FREQUENCY OF EXTENSION AGENT VISIT[a]	.42218* (.24233)	.00459* (.002866)	1.742
AGE OF HOUSEHOLD HEAD	-.03929 (.06247)	-.000427 (.000920)	-.629
SEX OF HOUSEHOLD HEAD	-.194714 (.598307)	-.002120 (.006989)	-.325
FAMILY SIZE	-.59378** (.23196)	-.004662** (.001018)	-2.560
LABOR SUPPLY	.39666 (.39735)	.001586 (.00127)	1.06
EXPERIENCEINBUTTER PRODUCTION(YEARS)	.003056 (.04098)	.000033 (.000440)	.075
NON DAIRY INCOME	.000004 (.000051)	.00000004 (.00000055)	.082
EDUCATION LEVEL	-.13378 (.39076)	-.00145 (.005124)	-.342
DISTANCE TO MARKET	-.24516*** (.06654)	-.00266*** (.004126)	-3.684
DISTANCETODEVELOPMENT CENTER	-.40316*** (.11017)	-.00439*** (.00672)	-3.659
DISTANCE TO ROAD	.06625 (.06896)	.00072 (.001298)	.961
DISTANCE TO DISTRICT TOWN	.05058 (.03889)	.00135 (.00154)	1.29
ACCESS TO MARKET INFORMATION	1.11575* (.56153)	.01215* (.02106)	1.987
LIVESTOCK HOLDING(TLU)	.17937 (.14106)	.00195 (.00362)	1.272
NUMBER OF LOCAL COWS	.00047 (.00917)	.000005 (.000097)	.052
NUMBER OF CROSS BREED COWS	.00017 (.00055)	.000001 (.000006)	.325

Percentage of correctly predicted 0.9547, N = 200
Chi-squared 134.08***, Log likelihood function = -31.63390
Restricted log likelihood -98.67847, [a] = predicted values
* = 10% sign level, ** = 5% sign level, *** = 1% sign level (standard errors in brackets)

Table 3. OLS estimates of level of butter market participation

Variables	Coefficients	t- ratio
CONSTANT	-2.2968 (5.4774)	-.419
ACCESS TO CREDIT[a]	.031115 (1.7095)	.018
butter produced(kg)	.95252*** (.01549)	61.470
FREQUENCY OF EXTENSION AGENT VISIT[a]	.74102 (.724576)	1.023
AGE OF HOUSEHOLD HEAD	-.13138 (.14505)	-.906
SEX OF HOUSEHOLD HEAD	.24503 (1.8943)	.129
FAMILY SIZE	-.14392 (.581967)	-.247
LABOR SUPPLY	.299511 (.926815)	.323
EXPERIENCEINBUTTER PRODUCTION(YEARS)	.082577 (.113970)	.725
NON DAIRY INCOME	.000041 (.000083)	.493
EDUCATION LEVEL	-.731070 (1.08830)	-.672
DISTANCE TO MARKET	-.50218*** (.18129)	-2.770
DISTANCETODEVELOPMENT CENTER	-1.13421*** (.23871)	-4.751
DISTANCE TO ROAD	-.271465 (.21131)	-1.285
DISTANCE TO DISTRICT TOWN	-.032181 (.062532)	-.515
LIVESTOCK HOLDING(TLU)	.306410 (.268291)	1.143
NUMBER OF LOCAL COWS	.001426 (.0040315)	.354
NUMBER OF CROSS BREED COWS	.001056 (.0017251)	.612
IMR (inverse mills ratio)	16.4906*** (1.49738)	11.013

R-Square 0 .980606, F-test 508.42***
AdjR-Square 0 .97868, N 200, * = 10% sign level, ** = 5% sign level, *** = 1% significance level (STD errors in brackets) [a] = predicted values

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar