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LABOR UTILIZATION AND NON-FARM LABOR SUPPLY AMONG RURAL FARM HOUSEHOLDS: A CASE STUDY OF HILL AND TARAI DISTRICTS

Krishna K. Rauniyar

HMG-USAID-GTZ-WINROCK PROJECT
STRENGTHENING INSTITUTIONAL CAPACITY IN THE
FOOD AND AGRICULTURAL SECTOR IN NEPAL

Foreword

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LABOR UTILIZATION AND NON-FARM LABOR SUPPLY AMONG RURAL FARM HOUSEHOLDS: A CASE STUDY OF HILL AND TARAI DISTRICTS

Krishna K. Rauniyar*

ABSTRACT

This research assesses the extent and importance of non-farm activities in rural and urban areas from the viewpoint of their contribution to the output, employment, and earnings of the rural labor force. These findings reveal a rising share of the rural labor force engaged in non-farm work. This is partly a result of the slow growth of labor absorption in agriculture and partly a result of the increasing division in rural areas between farm and non-farm work induced by high elasticities of demand for non-food goods and services with respect to changes in rural incomes and agricultural output.

Non-farm activities are becoming increasingly concentrated in rural towns in response to infrastructural improvements and market growth. This process stimulates decentralization of urban growth, providing added employment and earning opportunities for out-migrants from agriculture as agricultural productivity rises. Non-farm activities in rural and urban areas are thus essential in the process of economic development and structural change from a rural-agricultural to an urban-industrial economy.

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THE RESEARCH PROBLEM

Discussion of rural development policy is for the most part focussed on the tenurial, institutional, technical, infrastructural and economic aspects of agricultural development. In contrast, non-farm activities in agricultural regions receive little attention. Some economists from developing countries have even predicted a decline of non-farm activities with agricultural development. This paper proposes that non-farm activities in agricultural regions (rural areas) expand rapidly in response to agricultural development and merit special attention in the design of both rural and urban development strategies.

The employment implications of the characteristics of the agricultural sector in Nepal--labor shortage in the peak season and alleged surplus labor in the slack season--have received attention and policy measures have been proposed to ameliorate this imbalance. To accelerate the development of non-farm activities especially through cottage and small scale industries a variety of programs have been launched by commercial banks and ADB/N during the last decade.

Previous attempts to deal with this problem have stressed increased productivity in agriculture. Analysis of non-farm activities, to which a considerable part of the rural labor in the slack season is allocated, offers much potential for understanding the rural labor market.

The unemployment rate in Nepal is about six percent. About 37 percent of working days are not utilized in the rural areas and 45 percent in urban areas (NPC, 1978). The number of people depending on the agricultural sector for employment is increasing by over 350,000 every year. According to ILO-ARTEP estimates the underemployment rate in rural Nepal is 33 percent: 21 percent in the Tarai, 37 percent in the Hills, and 54 percent in the Mountains.

Traditionally, non-farm activities and income derived from them have been considered by-products of farm activities, and attention has focussed on how to increase farm income and encourage full time farming.

The poorest groups of rural population include those who depend on non-farm activities. These groups supply goods and services for agriculture and the rural population,

The concentration and growth of non-farm activities in rural areas localizes employment opportunities for people who leave agriculture and stimulates decentralization of urban growth. As little is known about non-farm activities in Nepal, research is needed to study the decision-making behavior of rural households and draw implications for the development of the rural agricultural sector.

Recent data and fieldwork are used to investigate surplus labor. The nature, determinants and magnitude of non-farm activities may identify major constraints to development in rural Nepal. A comparison of urban and rural areas is used to examine labor supply behavior in Nepal.

OBJECTIVES

The main objectives of this study are:

(1) To quantify labor utilization in farm and non-farm activities;

(2) To determine the major factors affecting rural households' time allocation to non-farm activities;

(3) To investigate labor supply to non-farm activities and their contribution to household income.

UTILITY MAXIMIZATION MODEL

Until recently, the formal theory of labor supply concerned the choice between labor and leisure made by single individuals. Recent labor supply theory regards the multi-person household as the decision-making unit for production and consumption. Incorporating the cost of households' time with market goods to produce basic commodities that directly enter their utility functions, commodities are classified as time-intensive or market goods-intensive, and work activities are viewed as a commodities that yield market goods. The equilibrium condition is that marginal utility equals the sum of the marginal cost of using goods in producing commodities and the marginal cost of the time used.

Recently, there have been attempts to formalize the family decision-making process and to analyze the intra-

family allocation of time and goods. While classical theory regarded "household" as synonymous with "individual," the new household economic theory recognizes that each family member plays a different role in the production of commodities according to their comparative advantage, as determined by wage rates and efficiency in the production of goods. The time of household members will be allocated to market time (including farm and non-farm work) and non-market time (including home production time and leisure) to minimize the total cost of producing alternative sets of commodities.

In a geometric treatment, Evenson showed the gains from specialization according to comparative advantage within households, though the model was based on very rigid assumptions about the utility function of each member, work hours and the home production function.

A precise formulation is presented mathematically by Gronau. Adopting Gronau's model with slight modification, consider a family of only husband and wife. The family combines its members leisure time with market and home goods used to generate utility (U):

$$U = U(M,H,Lh,Lw)$$

where M = market goods purchased; H = home goods produced; Lh = husband's leisure time; Lw = wife's leisure time.

Home goods are produced by combining market inputs and time. The time of each member of the household along with market inputs is combined to obtain household utility. This study tries to determine how rural farm households allocate labor to non-farm work. The major variables expected to explain household non-farm labor supply are:

Farm wage rate of each worker
Non-farm wage rate of each member
Prices of market inputs
Other farm and family characteristics

An increase in the net farm income will reduce the non-farm labor supply if leisure is a normal good. The effect of a change in non-farm wage rate on the non-farm labor supply is broken down into income and substitution effect and is not dictated by the theory.

On-farm characteristics and farm land size in relation to size of family labor force will influence the amount of labor required on the farm and less time will be devoted to non-farm work. Cropping intensity (which is associated with mechanization and irrigation) will be negatively related with the proportion of time allocated to non-farm activities. Farming types may influence farm labor required in certain work periods and affect non-farm labor supply, as vegetables, fruits, and livestock require more labor than paddy growing. Hired labor, farm machinery, and animal power may substitute for family labor.

The presence of dependents (under 7 or over 65 years old) has a negative effect on non-farm work-hours. Age of the household (the husband's age or the household average) will positively affect non-farm activities, as non-farm work requires certain skill levels and experience. Education tends to increase labor productivity and opportunities for non-farm activities. Assets will reduce the non-farm labor supply. Non-farm employment opportunity and proximity to market centers are positively related as information and commuting costs are often increase with distance.

The farm family labor supply to non-farm work is a linear function specified as follows:

$$L = f(W,A,I,T,M,D,G,E,C,P,U)$$

where L = non-farm labor supply (man-days)
W = ratio of non-farm to farm wages
A = farm size
I = cropping index
T = farm type (index)
M = hired labor and machinery
D = number of dependents
G = age of household
E = level of education (years)
C = commuting and information costs (distance in kms)
P = percentage of agricultural population
U = error term

The expected signs of coefficients are:

$$W, M, G, E > 0$$

$$A, I, T, D, C, P < 0$$

SCOPE OF THE STUDY

For the first and the third objectives tabular analysis will be done. For the second objective, a well-specified model will be used. Time allocation data will be generated for farm activities, non-farm activities, and income generating and non-income generating activities. Only time for income generating activities is included in the dependent variable, and the proportion of available labor man-days allocated for non-farm activities will be considered. Total man-days allocated to non-farm activities will also be tested as a dependent variable.

In the agricultural sector, due to lack of jobs in the slack season the labor supply is considered infinitely elastic at the subsistence level farm wage rate. Labor supply is expected to be affected by the variables in the model. Non-farm labor demand is affected by non-farm wage rates irrespective of farm wages. Non-farm labor supply is affected by both non-farm and farm wage rates. The use of the ratio of non-far to farm wage rates as a dependent variable is expected to reduce simultaneity bias.

SAMPLE DESIGN AND SOURCE OF DATA

Data was collected from 100 farm households randomly selected from Lalitpur and Dang Districts. Three villages of 30-35 households each were interviewed. Nine incomplete interviews were discarded, and 91 households were retained in the sample population. Village selected were Thair and Lubbu (urban) in Lalitpur and Urhari (rural) in Dang. The survey was carried out during paddy harvesting in November 1984. A recall method was used for the slack season to capture variation in labor use. Questionnaires were designed to obtain data from farm operators every weekend.

EMPIRICAL RESULTS

Definitions of variables are explained in Table 1 and descriptive statistics are given in Table 2. For the pooled sample, average off-farm labor per rural household is 442 man-days while this figure is only 314 man-days for working couples. Average man-days per household and labor days worked per couple are greater in Lalitpur than in Dang.

This is more evident from the P variable. The agricultural base of Lalitpur is almost utilized to its maximum capacity. Landholding size is much greater in Dang (1.17 bighas) than in Lalitpur (0.03 bighas).

Table 1. Definitions of Variables

L1	Number of non-farm labor days of all adults in the household in man-days
L2	Ratio of non-farm labor days to total labor days
L3	Non-farm labor days of wife and husband
L4	Ratio of non-farm labor days to total labor days worked in a year, wife and husband only
W	Ratio of non-farm wage to farm wage, per adult person in the household
D	Number of dependents (under 7 or over 65 years old)
G	Age of the household (average age of all adults working in non-farm activities)
I	Cropping index in percentage
T	Farming type, average value. Three points per ropani for vegetables, cash crops, fruits, coffee, tea, jute, tobacco; two for wheat, maize; one for paddy.
P	Percentage of agricultural population in the household
C	Commuting and information costs measured as distance to market center in kms
E1	Average number of schooling years of wife and husband
E2	Average number of schooling years of all adults
A	Land holding size
N	Ratio of non-farm to farm wage
M	Stock of farm machinery (Rs)

Only 14 percent of the household working members are employed in agriculture in Lalitpur urban villages while this percentage is 89 for Urhari in Dang. Lalitpur's urban villages are fast moving towards industrialization leaving agricultural practices as a secondary livelihood.

The ratio of non-farm to farm wage is 0.67 for the pooled sample and 0.72 and 0.60 respectively for Lalitpur and Dang. Lalitpur has higher non-farm wage rates than Dang, and educational levels are also higher in Lalitpur. Most of the farmers interviewed in both regions are small farmers. The average landholding size is only 0.69 bighas for the total sample.

Cropping intensity in all three villages is high (over 200) as compared to the national figure of 140. Urhari is served by ADB/N and Lalitpur is near Kathmandu. Net farm income is of Rs.4389 in Lalitpur and Rs. 11363 in Dang.

Non-farm activities are becoming more prominent among both rural and urban farmers. In Lalitpur farmers spend 84 percent of their time on non-farm work and in Dang the figure is 63 percent.

Non-farm labor days are about six times higher than farm labor in Lalitpur and about three times higher in Dang (Table 2b). The same is true for farm and non-farm income in Lalitpur, but the opposite is true for Dang where non-farm income is only one-third of farm income. In Urhari non-farm activities provide little income.

In Table 2a the farming types variable has an average value of 14 for Lalitpur and 89 for Dang. In Lalitpur agriculture is less labor intensive compared to Dang where farmers grow both cash and cereal crops. Lalitpur areas generally grow cereals needing less labor for cultivation.

Table 2a. Sample Population Characteristics

Variable	Pooled N=91 Mean	SD	Lalitpur N=50 Mean	SD	Dang N=41 Mean	SD
L1 = Total non-farm labor days	442	385	561	372	296	351
L2 = Ratio of non-farm to total labor	0.68	0.31	0.79	0.20	0.54	0.36
L3 = Total non-farm labor days (W+H)	315	237	389	234	224	210
L4 = Ratio of non-farm to total labor (W+H)	0.65	0.32	0.74	0.26	0.54	0.36
W = Ratio of non-farm to farm wage	0.67	0.45	0.72	0.52	0.60	0.34
D = Dependents	1.09	1.14	1.33	1.06	0.80	1.17
G = Household age	31.2	11.2	34.1	8.3	27.7	13.3
I = Cropping index	211	91	205	67	218	114
P = Percent agri pop in household	31	25	28	21	35	30
T = Farming types	48	133	14	10	89	191
C = Information cost/distance	2.53	5.32	2.04	2.75	3.14	7.33
E1 = Education of wife and husband	1.35	2.16	1.64	2.33	0.98	1.91
A = Landholding	0.69	1.17	0.30	0.31	1.17	1.59
E2 = Education of all adults	1.91	2.20	2.34	2.17	1.38	2.13
M = Stock of farm machinery	2148	4115	1706	2795	2688	6145

Table 2b. Sample Characteristics

	Lubbu	Thair	Lalitpur	Urhari	Lali+Dang
Non-farm income as percent of net farm income	160	488	319	40	118
Household income(Rs)	11751	24998	18375	15954	17166
Non-farm labor days as percent of total labor days	81	86	84	63	75
Non-farm labor days as percent of total farm labor days	579	792	671	175	339
Net farm income (Rs)	4524	4254	4383	11363	7876
Non-farm income (Rs)	7227	20744	13986	4594	9290
Labor days worked/yr	660	690	675	472	574
Non-farm labor days worked/yr	533	594	564	298	431
Farm labor days worked/yr	92	75	84	170	127
Farm labor hired/yr	92	25	59	89	74
Family size	6.92	5.95	6.43	5.41	5.92
Non-farm labor days worked per member/yr	77	100	89	55	72
Farm labor days worked per member/yr	13	13	13	31	22
Cropping index	205	205	205	218	211
Annual non-farm income per laborer (Rs)	82	256	83	42	33
Annual farm income per laborer (Rs)	77	152	50	142	47

REGRESSION RESULTS

Separate regressions were run for households as well as couples in Dang and Lalitpur, but only household results are explained here. Regression results for the pooled area (Dang + Lalitpur) are given in Appendix B. Two sets of dependent variables--total number of non-farm labor days of all adults in the households (L1) and the ratio of non-farm labor to total labor days available for work of the household (L2) used in the equations as dependent variables are explained. Both dependent variables are used for couples.

Dang. Except for the commuting and information variable, all explanatory variables have expected signs (Table 3). Six variables are statistically significant.

The negative sign for variable D means the more children and economically inactive old persons in the household, the less will be non-farm labor supply from the active members of the households, as the economically active persons will be busy looking after these dependents.

The proportion of adults working for agricultural operations (P) is significant and has the expected negative sign, showing that Urhari households work more on farms and supply less labor to non-farm employment. This is also evident from the larger landholding size of Urhari households than Lalitpur households. The land size variable is also statistically significant and has the expected negative sign. The larger the land size, the more household persons will be employed in agricultural operations and will have less time for non-farm employment.

Cropping intensity (I) although it has the expected negative sign, is not significant. The farming types variable (T), is statistically significant and has the expected negative sign indicating that cultivation of labor intensive crops like vegetables and fruits keeps small farmers busy on their farms throughout the year and they have little time to devote to non-farm employment.

Table 3. Regression Results for Dang (N=41)

Variables	Dep Var L1	Dep Var L2
Constant	545.98	0.62
	(2.71)	(3.65)
W	275.03	0.19
	(1.28)	(1.02)
D	- 115.88***	- 0.09**
	(2.81)	(2.40)
G	- 2.91	0.003
	(0.43)	(0.64)
I	- 0.22	- 0.001
	(0.49)	(0.50)
T	- 3.43**	- 0.002
	(2.40)	(1.37)
P	- 4.30***	- 0.005***
	(2.70)	(3.18)
C	4.87	0.007
	(0.72)	(1.27)
A	- 61.309*	- 0.09***
	(1.81)	(3.12)
E2	91.05**	0.05*
	(2.59)	(1.68)
M	0.08*	0.00
	(1.99)	(1.34)
R-squared	0.52	0.66
Adjusted R-squared	0.38	0.56
F-statistic	3.22	5.89
D.F.	30	30

t-values in parentheses
Significance levels: *** 0.01; ** 0.025; * 0.05.

The stock of farm machinery (M) is also statistically significant and has the expected positive sign showing that the more investment in farm machinery tools and bullocks, the less labor intensive will be agricultural operations, and more labor will be used for non-farm employment. However, this finding is contradicted in that the non-farm labor supply in Urhari is low compared to Lalitpur. One possible reason may be that most farmers in Urhari have little land (1.17 bigha), and family size is also smaller than in Lalitpur. Thus smaller family size and subsistence level farming keep most laborers busy in labor intensive

farming of cash crops. This is evident from the higher farm labor productivity/year in Dang compared to Lalitpur.

The ratio of the non-farm to farm wage rate (W) has the expected sign but is significant at only 10 percent. Although non-farm wage rates should influence the supply of labor to non-farm employment, the effect is not pronounced. One reason for this may be that Urhari is in the interior area cut off from the main urban center of Dang and infrastructure for the development of non-farm activities is less developed than in Lalitpur.

The education level of household adults (E2) is statistically significant and has the expected positive sign. An increase of one year in the average schooling of adults is associated with 91 more off-farm labor days annually. Age of the household (G) has the expected sign but is not significant. The joint family system of households in Urhari, which prevents economically active members from leaving home for non-farm work as they are required to take care of children and dependents. In urban areas the trend is toward independent family systems.

Similar results are obtained when the ratio of non-farm labor days to total labor days (L2) is used as a dependent variable.

Lalitpur. Table 4 shows regression results for Lalitpur. Except landholding size (A), educational level of household adults (E2), and ratio of non-farm to farm wage rate, all variables have expected signs. Age of the household (G) and proportion of households working in farm work (P) are statistically significant. The older households in Lalitpur are characterized by more skill, more educational achievement and more training opportunities as they are located near Kathmandu. The significance of the P variable in urban areas like Lalitpur may be explained by the fact that Lubbu and Thair are mostly inhabited by traditional Newars who are among the best farmers in Asia. These people do not want to completely leave farming because they like to produce cereals sufficient for their families and because the value of their farm land is among the highest in the country.

Here the cropping intensity (I), farming types (T), and stock of farm machinery (M) variables all give expected

signs but none of them are significant, indicating that in the urban Kathmandu Valley, agriculture is not as important as non-farm employment. Farmers grow paddy and sometimes wheat, not cash crops like vegetables. Landholding size is low, and as this land cannot feed the large families (6.43 persons) unlike Urhari rural households, they tend to be more involved in non-farm employment. Irrigation facilities are not a problem, and little investment is required. Land size and education both have unexpected signs, but are not significant. The commuting and information cost (C) has a negative sign.

Table 4. Regression Results for Lalitpur (N=50)

Variables	Dep Var = L1	Dep Var = L2
Constant	1010.07	1.01
	(3.57)	(6.14)
W	- 212.70***	0.04
	(2.16)	(0.73)
D	- 10.18	0.005
	(0.22)	(0.18)
G	- 8.70	- 0.002
	(1.39)	(0.34)
I	- 0.19	- 0.001*
	(0.21)	(1.34)
T	- 4.73	- 0.005
	(0.59)	(1.09)
P	- 5.94***	- 0.003**
	(2.28)	(1.86)
C	- 25.32	0.01
	(1.22)	(1.20)
A	- 221.10	- 0.09
	(0.93)	(0.65)
E2	- 21.66	- 0.03*
	(0.75	(1.57)
M	0.004	0.00
	(0.27)	(0.11)
R-squared	0.36	0.28
Adjusted R-squared	0.22	0.11
F-statistic	2.23	1.49
D.F.	39	39

t-values in parentheses
Significance levels: *** 0.01; ** 0.025; * 0.05.

CONCLUSIONS AND POLICY IMPLICATIONS

The extent to which rural households seek non-farm work depends upon non-farm wages and agricultural prices. Non-farm wage rates are sufficiently high relative to farm incomes in Nepal that rural households have the incentive to seek non-farm work. The gap between urban incomes and rural incomes makes non-farm work attractive.

The non-farm labor supply increases with the average educational level of rural household members. Non-farm work is quite sensitive to the skill levels of rural household members. Efforts to improve education in rural areas should increase the non-farm labor supply as well as accelerate farm modernization.

The non-farm labor supply increases with investment in farm machinery. Small farmers obtain higher returns for labor resources in off-farm work, which is consistent with intensifying farming operations on a limited land base by growing more cash crops in rural areas. Government subsidies for capital inputs such as machinery can accelerate the rate at which this substitution occurs and lead to increased agricultural productivity and more labor supply to off-farm employment.

The distribution of government land to rural small farmers along with timely land reforms will help rural villagers find year-round employment in agriculture, thus increasing agricultural productivity and inducing them not to migrate to cities for jobs. ADB/N could play an important role by providing loans for purchasing land to subsistence level farmers in rural areas.

Small families and single family system structure coupled with low demand for children will help raise household incomes for better livelihood. Low fertility and small family structure are usually the result of high educational levels.

When Dang is compared with Lalitpur, there are differences in socio-economic, cultural, and farming structures. When empirical results are considered, only the age of the household (G) and the proportion of members working for agriculture in the household (P) are statistically significant. All the major variables concerned with agricultural

development are insignificant for Lalitpur. Cropping intensity, land holding size, farming types and stock of farm machinery all are insignificant, indicating that agriculture has become a secondary profession, and non-farm employment has become the primary occupation. Areas near main urban centers will become developed even without the help of the government. In this situation, the private sector can play an important role if prices and other market signals are left to themselves for balanced development without government intervention and distortion.

This research has assessed the extent and importance of non-farm activities in rural and urban areas from the viewpoint of their contribution to the output, employment, and earnings of the rural labor force. These findings reveal a rising share of the rural labor force engaged in non-farm work. This is partly a result of the slow growth of labor absorption in agriculture and partly a result of the increasing division in rural areas between farm and non-farm work induced by high elasticities of demand for non-food goods and services with respect to changes in rural incomes and agricultural output.

Non-farm activities are becoming increasingly concentrated in rural towns in response to infrastructural improvements and market growth. This process stimulates decentralization of urban growth, providing added employment and earning opportunities for out-migrants from agriculture as agricultural productivity rises. Non-farm activities in rural and urban areas are thus essential in the process of economic development and structural change from a rural-agricultural to an urban-industrial economy.

Further study is needed to identify other factors that may affect labor supply. Community and national conditions such as unemployment rates also should be examined to assess their impact on non-farm work.

APPENDIX A. Regression Results: Wife + Husband

Variables	Dang (N=41) Dep Var L3	Dang (N=41) Dep Var L4	Lalitpur (N=50) Dep Var L3	Lalitpur (N=50) Dep Var L4
Constant	317.52 (2.72)	0.52 (2.96)	633.06 (4.01)	0.74 (3.87)
W	70.11 (0.52)	0.19 (0.93)	77.52 (1.40)	0.08 (1.19)
D	- 62.30*** (2.28)	- 0.08 (1.89)	1.78 (0.06)	0.04 (1.29)
G	3.09 (0.73)	0.007 (1.15)	- 0.33 (0.10)	0.004 (1.01)
I	- 0.22 (0.83)	- 0.001 (0.91)	- 0.59 (1.17)	- 0.001 (1.10)
T	- 0.26 (0.32)	0.00 (0.55)	- 4.04 (0.90)	- 0.002 (0.27)
P	- 3.25**** (3.29)	- 0.004*** (2.69)	- 5.916*** (4.04)	- 0.006*** (3.11)
C	- 3.37 (0.80)	0.005 (0.94)	- 0.42 (0.04)	0.024** (1.77)
El	- 36.07** (2.08)	- 0.03 (1.25)	- 4.04 (0.29)	- 0.01 (0.58)
A	- 17.05 (0.82)	- 0.07** (2.31)	100.39 (0.79)	0.07 (0.42)
M	0.002 (0.11)	- 0.001 (0.37)	0.014* (1.41)	- 0.001 (0.06)
R-squared	0.48	0.60	0.49	0.42
Adjusted R-squared	0.34	0.49	0.38	0.29
F-statistic	2.82	4.55	3.78	2.79
D.F.	30	30	39	39

t values in parentheses.
Significance levels: **** 0.005; *** 0.01; ** 0.025; * 0.05.

APPENDIX B. Pooled (Dang + Lalitpur) Regression Results

Variables	Household Dep Var L1	Household Dep Var L2	Wife + Husband Dep Var L3	Wife + Husband Dep Var L4
Constant	697.29	0.71	460.85	0.60
	(4.41)	(6.41)	(5.35)	(5.37)
W	260.04***	0.09	115.13**	0.15**
	(3.15)	(1.48)	(2.46)	(2.38)
D	- 22.96	- 0.01	-23.21	- 0.012
	(0.74)	(0.45)	(1.26)	(0.47)
G	- 2.56	0.005**	1.07	0.01***
	(0.66)	(0.35)	(0.54)	(2.62)
I	- 0.68*	- 0.001*	- 0.42*	- 0.001
	(1.67)	(1.60)	(1.83)	(1.48)
T	- 0.72	- 0.001	- 0.58*	0.00
	(1.33)	(0.34)	(1.84)	(0.70)
P	- 4.59***	- 0.004***	- 4.26***	- 0.005***
	(3.13)	(3.56)	(5.17)	(4.08)
C	- 11.48*	0.004	- 4.28	- 0.007
	(1.69)	(1.01)	(1.10)	(1.38)
A	- 57.28*	- 0.10***	10.49	0.01
	(1.72)	(4.26)	(1.05)	(0.83)
E2	11.11	0.003	-19.97	- 0.08***
	(0.64)	(0.28)	(1.04)	(3.12)
M	0.02	0.00	0.01	- 0.001
	(1.00)	(0.75)	(1.52)	(0.25)
R-squared	0.36	0.51	0.46	0.51
Adjusted R-squared	0.29	0.46	0.40	0.45
F-statistic	4.43	8.43	6.70	8.18
D.F.	80	80	80	80

t values in parentheses.
Significance levels: *** 0.005; ** 0.025; * 0.05.

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