

2019 PNG UPDATES

UPNG Waigani Campus, Port Moresby

Mining booms & Poverty Alleviation: Provincial Level Analysis

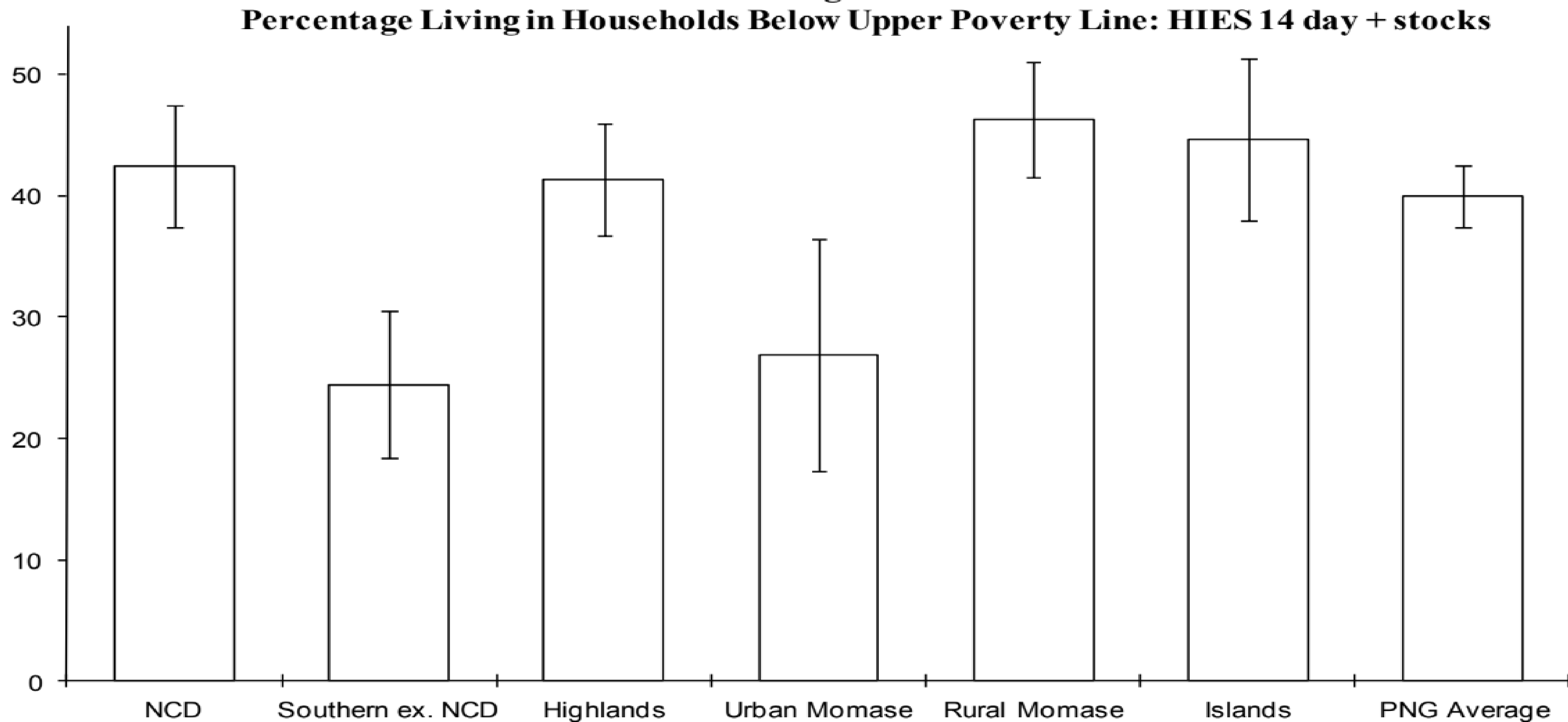
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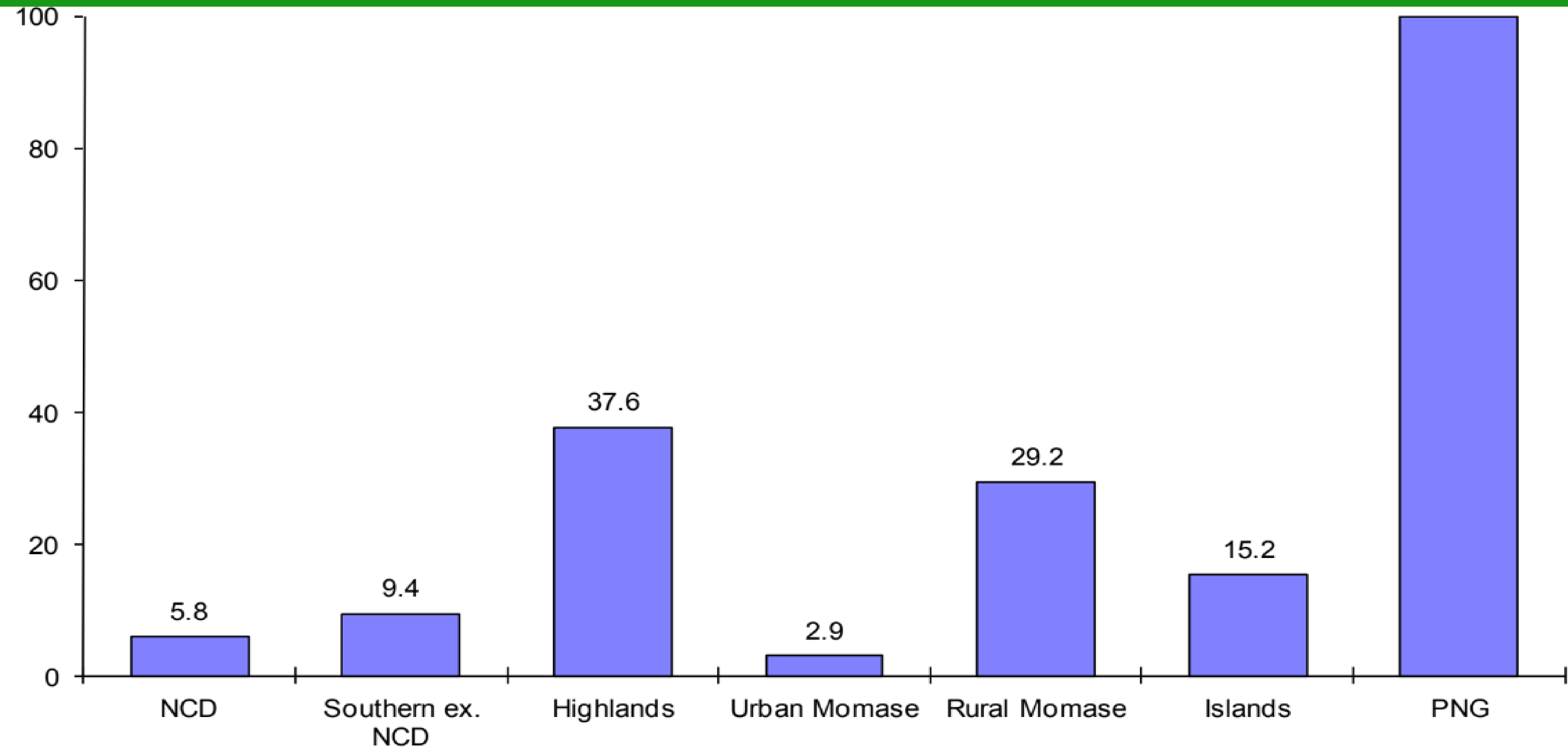
Research Issue

- Aim of the paper is to investigate whether specific province led growth in mining & non-mining sector in PNG directly reduces poverty and inequality
 - Growth in mining and non-mining sector contributes to GDP and the overall growth of the economy.
 - This in turn can reduce poverty and inequality through the distribution mechanisms of the government.
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Poverty in Regions.

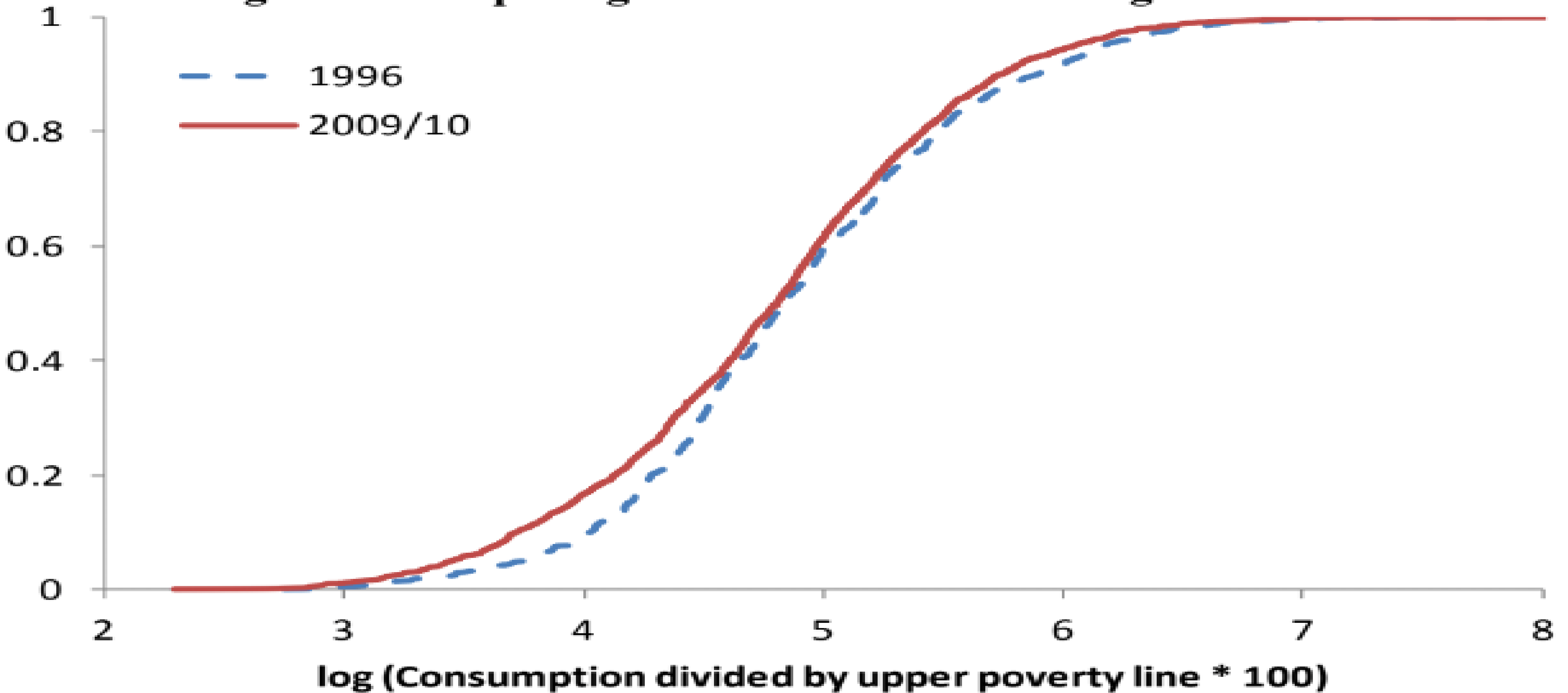


Contribution to National Poverty (%). Headcount Index at Upper Poverty Line 14 days + stocks.



Comparing the Distribution of Living Standards

Figure 3: Comparing the Distribution of Living Standards



Literature Review

- Economic growth is necessary to improve the welfare of the poor and reduce income gap (Dollar and Kraay 2002; Dollar, Kleineberg and Kraay 2016; and Hausmann, Northrop. E. M 1998; Pritchett and Rodrik 2005; Miranti and Resosudarmo 2005)
 - Among others, mining and Non-mining growth lead to economic growth for both developing & developed economies ((Pattnaik & Shah 2010, Valentine 1993, Curry 1987, Besada & Martin 2013, Mishra 2010 and Mainardi 1996)
 - Mining Growth indirectly affects household reducing poverty & Inequality ((Bhattacharyya and Resosudarmo 2015)
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Data & Limitation

- Panel Data: PNG Household Income & Expenditure Survey (HIES) for 1996 & 2009/10 (NSO).
 - Population Data: PNG Population Census 2010 (NSO).
 - Mining Data: PNG Chamber of Mines & Petroleum.
 - GDP by Provinces: Night Light data from surface satellite.
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Model Specification

Difference – In – Difference Model used.

1. $H_{it} = \alpha_i + \beta_1 M_{it} + \beta_2 T_t + \beta_3 M^* T_{it} + \theta_1 GDP_{it} + \theta_2 Gini_{it} + \theta_3 X_{it} + \epsilon_{it}$

2. $G_{it} = \delta_i + \varnothing_1 M_{it} + \varnothing_2 T_t + \varnothing_3 M^* T_{it} + \varnothing_1 GDP_{it} + \varnothing_2 X_{it} + V_{it}$

3. $H_{it} = \alpha_2 + \beta_4 M_{it} + \beta_5 T_t + \beta_6 M^* T_{it} + \mu_{it}$

4. $G_{it} = \alpha_3 + \beta_7 M_{it} + \beta_8 T_t + \beta_9 M^* T_{it} + \zeta_{it}$

5. $\log H_{it} = \alpha_4 + \beta_{10} M_{it} + \beta_{11} T_t + \beta_{12} M^* T_{it} + \theta_4 \log GDP_{it} + \theta_5 \log Gini_{it} + \theta_6 \log X_{it} + \epsilon_{it}$

6. $\log G_{it} = \delta_2 + \varnothing_2 M_{it} + \varnothing_3 T_t + \varnothing_4 M^* T_{it} + \varnothing_3 \log GDP_{it} + \varnothing_4 \log X_{it} + V_{it}$

Results

	(1)	(2)	(3)	(4)	(5)
	hcr_lpl	hcr_upl	hcr_rel	gini	ratio5topc
Mining (M)	-12.119*	-10.289	-0.001	0.043	0.075
	(7.067)	(6.259)	(0.017)	(0.042)	(0.193)
Time (T)	-6.195	-7.098	-0.014	0.115***	0.381**
	(6.348)	(5.622)	(0.015)	(0.037)	(0.174)
M*T	6.840	4.708	-0.000	-0.063	-0.173
	(9.906)	(8.773)	(0.023)	(0.058)	(0.271)
_cons	43.753***	48.050***	0.124***	0.382***	2.383***
	(4.585)	(4.061)	(0.011)	(0.027)	(0.125)
<i>N</i>	39	39	39	39	39

Estimation Results of Baseline Model (3) and (4).

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Results -

	(1) lnlpl	(2) lnupl	(3) lnrel	(4) lngini	(5) lnrap5topc
mining_pro	-0.145 (0.156)	-0.157 (0.125)	0.068 (0.079)	0.017 (0.068)	-0.006 (0.015)
lnGDP_pro	-0.082 (0.055)	-0.040 (0.046)	0.010 (0.029)	-0.017 (0.025)	-0.002 (0.005)
lngini	0.096 (0.458)	0.288 (0.399)	-0.095 (0.298)		0.844*** (0.054)
lnpop	0.230 (0.149)	0.117 (0.120)	-0.157* (0.094)	0.172*** (0.060)	-0.033** (0.016)
lnnosceap	0.012 (0.131)	0.056 (0.110)	-0.018 (0.058)	0.033 (0.052)	0.006 (0.010)
lnelectr	-0.040 (0.079)	-0.046 (0.061)	0.095*** (0.036)	0.018 (0.027)	0.018** (0.007)
lnhhsizc	-1.018** (0.477)	-0.663 (0.419)	-0.051 (0.338)	-0.221 (0.233)	0.046 (0.044)
lnage	-0.648 (1.199)	-0.321 (0.853)	0.168 (0.692)	0.751* (0.448)	0.121 (0.148)
lnmarried	-0.082 (0.853)	-0.392 (0.654)	-0.796 (0.527)	0.218 (0.204)	-0.184** (0.073)
lndivorced	-0.015 (0.101)	0.003 (0.085)	-0.018 (0.056)	-0.081* (0.044)	-0.008 (0.008)
lnfullmoth	0.032 (0.147)	0.021 (0.120)	-0.085 (0.084)	0.087 (0.057)	-0.010 (0.015)
lnfem_nowrk	-0.288 (0.273)	-0.258 (0.218)	0.143 (0.137)	-0.097 (0.116)	0.002 (0.023)
lnfemale	-0.994 (1.870)	-0.631 (1.584)	-1.678 (1.380)	1.238** (0.569)	-0.090 (0.184)
_cons	10.744 (10.574)	10.104 (8.929)	8.085 (8.298)	-9.467*** (3.483)	2.573** (1.254)
N	39	39	39	39	39

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Conclusion

- The results show that mining growth led to reduction in poverty but increases inequality gap in the mining host provinces.
 - These results some how differ from existing literatures on correlations between mining growth and poverty & inequality.
 - PNG Case may be attributed to different policy and legislative framework that guides the functioning of mining sectors (Royalties, Development Levies, Credit Schemes, SMEs & Other Economic Spin-offs) .
 - There is further need for investigations to prove these results.
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