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# Employer-provided housing assistance in Papua New Guinea: Empirical analysis and policy implications

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# Background

- Urban Papua New Guinea (PNG) suffers from one of the highest price-to-income ratios in the world
  - Historical and structural factors that limit private ownership contribute to extreme housing scarcity in urban areas
- High cost of housing and house rents in major cities
  - Incentivise employers to provide housing benefits to employees as part of their remuneration
  - Employees believe that employers are obliged to provide housing assistance/benefit

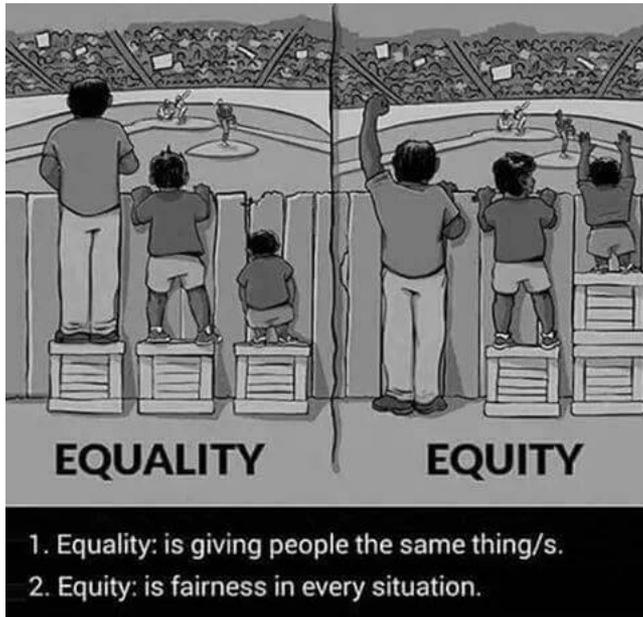
# What the literature says

- Workers tend to prefer employer provided accommodation (in-kind housing benefit)
  - It increases job stability and removed the worry of urban accommodation (*Kaitilla and Sarpong-Oti, 1993*)
- But there has been notable inequality aggravated by the allocation of government housing subsidies
  - with the better paid, upper level public servants pay a more heavily subsidised rent to live in expensive, relatively luxurious, high conventional houses (*Levine & Levine, 1982*).
  - So, high-income earners tended to live in employer-provided housing (in existing accommodation);
  - Low income earners endeavour to build homes mostly in the informal urban settlements (*Kaitilla and Sarpong-Oti, 1993*)
- Note: the literature is too old! What is the current situation?



# Questions and objective

- Housing benefits are received in the form of either
  - a house allowance (cash assistance); or
  - as accommodation (owned or rented by the employer); while
  - some employees receive no housing assistance
- Questions:
  - What sort of employees receive cash or in-kind housing benefit?
  - Is there equity or fairness in the provision of housing benefits?



- Objective:
  - To investigate the possible determinants of the type of housing assistance provided to employees.
    - Demographic characteristics of housing benefit recipients, compared to those who receive no housing support?



# Materials

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- Data from a 2017 survey of 1,652 employees across the country's four cities (Response rate 83%):

City	Distributed	Completed	Response
Port Moresby	800	606	76%
Lae	400	371	93%
Madang	400	352	88%
Goroka	400	323	81%
Total	2000	1652	83%

Capture demographics:

- age,
- income,
- gender,
- nationality,
- occupation
- employer, and
- education

- Asked respondents whether they lived in employer provided accommodation and if they did not, whether they received cash allowance for their housing needs.
  - Responses encoded into a single variable to represent the level of benefit: 0 = no benefit; 1 = employer-provided housing; and 2 = cash house allowance.
- List-wise deletion due to item non-response
  - Remove 112 respondents (or 6.8%)
  - Leaving **1,540** usable questionnaires.



# Econometric Method

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- Multinomial logistic regression
  - to investigate the dwelling, employee and employer characteristics associated with the likelihood of receiving cash or in-kind housing assistance against the base model of receiving no benefit.
  - $\Pr(Y_i = 0 \cup 1 \cup 2|X)$ ,
    - $i = 1, 2, 3$  possible outcomes: no benefit (0), house benefit (1) and cash benefit (2) respectively.
    - $X$  = dwelling, employee and employer characteristics
  - $\text{Logit} = \beta_0 + \beta_1 X_{1j} + \beta_2 X_{2j} + \dots + \beta_k X_{kn} + \varepsilon_k$ ,
    - $\beta$  = Vector of unknown parameters to be estimated
    - $k$  = Number of independent variables ( $X$ s)
    - $n$  = Number of respondents
    - $\varepsilon$  = random disturbance



# Some Basic results

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## Access to Employer Support for Housing by Gender and Employer Category

	Total		Gender (%)		Employer (%)		
	%	<i>n</i>	M	F	ChNG	PVT	GOV
No Assistance (0)	55%	852	49%	51%	6%	32%	62%
Employer Provided Housing (1)	25%	383	65%	35%	8%	20%	72%
Cash House Allowance (2)	20%	305	57%	43%	12%	45%	43%
	100%	1,540	54%	46%	8%	32%	60%

## Access to Employer Support for Housing by Income (Kina, K) per Fortnight, %

	Total	<400	400-700	700-1300	1300-2700	>2700
No Assistance	852	10%	23%	39%	20%	8%
Employer Provided Housing	383	4%	13%	34%	34%	15%
Employer Provided Allowance	305	2%	14%	31%	34%	19%
Total	1540	7%	19%	36%	26%	12%



# Some Basic results...

## Access to Employer Support for Housing by Age Group

	N	Age			
		21-30	31-40	41-50	Over 50
No Assistance	852	33%	37%	21%	9%
Employer Provided Housing	383	15%	32%	33%	20%
Employer Provided Allowance	305	26%	40%	21%	13%
	1540	27%	36%	24%	13%

## Access to Employer Support for Housing by Educational Attainment

	N	Year 12 or below	Diploma or Certificate	Bachelor or Postgraduate Degree
No Assistance	852	22%	42%	36%
Employer Provided Housing	383	13%	32%	55%
Employer Provided Allowance	305	15%	32%	53%
	1540	18%	37%	45%



# Regression Results

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MAIN EFFECTS	Staff Housing	Cash Allowance
	Coefficient	Coefficient
What is your gender? Male	-0.0157	0.178
Education, Diploma or Certificate	-0.102	-0.347
Education, Bachelor or Postgraduate Degree	0.651*	-0.208
Age, 31-40	0.275	-0.128
Age, 41-50	0.487	-0.778**
Age, Over 50	1.066***	-0.488
Fortnightly income, PGK400-PGK700	0.399	1.589**
Fortnightly income, PGK700-PGK1300	0.474	2.381***
Fortnightly income, PGK1300-PGK2700	0.510	2.773***
Fortnightly income, PGK2700 or more	1.126*	3.292***
City, Lae	1.137***	0.039
City, Madang	0.685***	-0.063
City, Port Moresby	-0.533**	-0.211
Employer category, Private Sector	-0.338	-0.252
Employer category, Public Sector	-0.128	-1.515***



# Regression Results...

INTERACTIONS	Staff Housing	Cash Allowance
	Coefficient	Coefficient
Age, 31-40 × Gender, Male	0.424	0.903**
Age, 41-50 × Gender, Male	1.019**	1.386***
Age, Over 50 × Gender, Male	0.477	1.398***
Edu -Diploma or Certificate × Gender, Male	0.593	0.395
Edu - University Degree × Gender, Male	0.468	0.830*
Income, PGK400-PGK700 × Gender, Male	-0.267	-0.754
Income, PGK700-PGK1300 × Gender, Male	-0.340	-1.334
Income, PGK1300-PGK2700 × Gender, Male	0.600	-0.779
Income, PGK2700 or more × Gender, Male	-0.185	-1.279
Employer category, Private Sector × Gender, Male	-0.004	-0.501
Employer category, Public Sector × Gender, Male	-0.552	0.119
Constant	-2.292***	-1.952***



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# Discussion

- There is no gender discrimination; unless age or education are also considered
- Employees age 41-50 are less likely to get cash house allowance
- Employees over 50 and those with university degrees are more likely to live in employer-provided accommodation
- An employee's income per fortnight does to determine the likelihood of receiving cash house allowance
- But those earning more than K2700 p/f have an advantage – they are also more likely to live in staff houses
- Those in Madang and Lae are more likely to live in staff houses; in POM are less likely.
- Private sector employees are less likely to live in staff houses
- Public sector employees are less likely to get cash house allowance.
- But the view that male public sector employees are favoured is not supported by the data.



# Conclusion and Policy Implication

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- There is a bit of bias against female employees, but bias is less likely for middle income workers getting cash house allowance;
  - Still, more effort needed to treat employees equally – i.e. giving male and female employees the “same thing”.
- Employers tend to reward those with high levels of socioeconomic advantage;
  - Those living in employer provided accommodation or receiving cash housing allowances also tend to both higher income and education levels.
- Some implications for PNG’s housing benefits tax policy:
  - Those in with high socioeconomic status tend to live in highly subsidized staff houses, with very low prescribed taxable values, hence not paying fare share of income tax. Hence fails equity consideration.
  - Introducing upmarket and very high cost tiers of housing benefit categories in 2017 didn’t go far enough
    - The prescribed taxable values are still relatively low compare to income



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Thank you  
for  
Your Attention