Session 2: Statistical Standard, Methodology and Application

The Easterlin's Paradox Revisited: the Role of Incentive Oriented Fairness

Ying-Yin Koay

Introduction

- **Happiness Economists: linkage between income and happiness**
- **Easterlin's Paradox (1974): income (money) can buy happiness at a single point of time but it does not help to stimulate happiness persistently**
- **Others: dip deeper about the income-happiness association from different dimensions of income, such as income equality (Oishi et al. 2011; Oshio & Kobayashi 2010), absolute income & relative income (Chu-liang 2009; Card et al 2012 ; Wolbring et al 2011).**
- **The findings remains inconclusive.**

What do Malaysians think about the income generation system?

the 2014 Pew Global Survey: 77% of Malaysian respondents perceived the income gap between the poor and rich is a big issue in the nation.

Equal income

World Value Survey (WVS): it is about 70% Malaysian respondents agreed the statement that 'we need larger income differences as incentives for individual effort'.

Fair income

Study gap

- **A missing psychological link in the happiness-income literature which is "perceived fairness"**
- **Psychological literature: people will be happy if they receive a fair treatment (Ordóñez et al 2000; Hegtvedt & Killian 1999).**
- **Individual emotions are partially driven by the judgement on fairness (Schweitzer & Gibson 2008; Coughlan & Connolly 2001; Cropanzano et al 2008; Pillutla & Murnighan 1996; Hegtvedt & Killian 1999)**

Research question

"Do Malaysians need an equal income or a fair income in their pursuit of happiness?"

Research objectives

i. **To revisit the Easterlin's paradox on the linkage between relative income (relative income gap) and happiness at individual level in Malaysia**
ii. **To examine the role of fairness perception as a mediator in the relationship between relative income (relative income gap) and happiness.**

Definition of fairness

- **the definition of fairness is quite subjective and complicated (Hayek 2014)**
- **‘equality’ is one of the synonyms of ‘fairness’**
- **Nonetheless, this study argues that ‘equality’ and ‘fairness’ are still different in certain extent.**

A : Cleans 5 rooms

B: Cleans 2 rooms

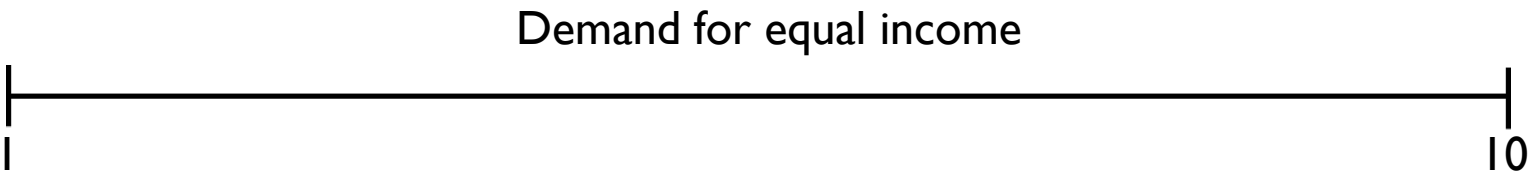
RM100

Are they reserved an equal income or fair income?

Proxy for fairness and demand for equal income

we need larger income differences as incentives for individual effort

income should be made more equal



The country does not make people's income equal

The country makes people's income equal

Methodology

- A sample of 1299 respondents from the wave 6 of WVS data
- An economic-psychological compatible happiness model is proposed:

$$y* = \beta' x + \varepsilon$$

- y* represents the level of respondent's perceived happiness
- "Taking all things together, would you say you are: not at all happy, not very happy, rather happy or very happy?"
- β' is the vector of estimated parameters and x is the vector of regressors; ε is the error term

Table 1: The labeling and definition of the used variables

Variable	Labelling	Definition
Happiness	*happiness*	'Taking all things together, would you say you are: 1 = not at all happy, 2 = not very happy, 3 = rather happy or 4 = very happy?'
Relative income	*income*	An income scale from 1 to 10. 1 indicates the lowest income group and 10 the highest income group in the country. This self-reported decile is defined based on the national distribution of income, so that the income levels are meant in relative terms.
Relative income gap	*gap*	The absolute value of the deviations from the mean of relative income to indicate the income differences across the respondents.
Fairness without incentives for individual efforts perception	*fairness*	Fairness perception is scaled from 1 to 10, where 1 indicates that 'we need larger income differences as incentives for individual effort' and the highest scale of 10 records that 'income should be made more equal'.
Demand for equal income	*equality*	'The country makes people's income equal'. A scale from 1 to 10. 1 means "not at all an essential characteristic of democracy" and 10 means it definitely is "an essential characteristic of democracy".
Health satisfaction	*health*	'All in all, how would you describe your state of health these days?'. 1 = poor, 2 = fair, 3 = good or 4 = very good.
Financial satisfaction	*fs*	'How satisfied are you with the financial situation of your household?' 1 = completely dissatisfied up to 10 = completely satisfied

Table 1: The labeling and definition of the used variables (Continued)

Variable	Labelling	Definition
Freedom of choice	*freedom*	'How much freedom of choice and control do you feel you have over the way your life turns out?' 1 = 'no choice at all' and 10 = 'a great deal of choice'.
Importance of god	*god*	'How important is God in your life?'. 1 = 'not at all important' and 10 = 'very important'.
Purpose of life	*purpose*	'How often, if at all, do you think about the meaning and purpose of life?' 1= 'never', 2 = 'rarely', 3 = 'sometimes' or 4 = 'often'.
Importance of friend	*friend*	'How important friend is in your life?' 1 = 'not at all important and 4 = 'very important'
Importance of leisure time	*leisure*	'How important leisure time is in your life?' 1 = 'not at all important and 4 = 'very important'
Age	*age*	'How old are you?'
Male	*male*	A dummy variable. 1 = male and 0 = female

Methodology

- **Cross-Sectional ordered logit models**
- **The marginal effects of cross-sectional ordered logit models**
- **Cross-sectional ordered probit models**
- **The marginal effects of cross-sectional ordered probit models**

Table 2: Descriptive statistics of variables

Variable	Observation	Mean	Standard deviation	Min	Max
happiness	1299	3.5258	0.5728	2	4
income	1299	5.9984	1.8382	1	10
gap	1299	1.4273	1.1578	0	5
fairness	1299	4.3426	2.6353	1	10
fairness.income	1299	25.8968	17.6305	1	100
fairness.gap	1299	6.0185	6.9051	0	50
equality	1299	6.5743	2.9251	1	10
equality.income	1299	40.3749	23.2418	1	100
equality.gap	1299	9.4773	9.3199	0	50
health	1299	3.2363	0.7100	1	4
fs	1299	6.4888	2.0450	1	10
freedom	1299	7.5019	1.7242	1	10
god	1299	9.0293	1.7486	1	10
purpose	1299	3.4457	0.6770	1	4
friend	1299	3.3641	0.6395	1	4
leisure	1299	3.2433	0.7115	1	4
age	1299	40.0069	13.9641	18	80
male	1299	0.5142	0.5000	0	1

Table 3: Results of the ordered logit model of *happiness*

Independent variables	Model (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
income	0.167***	0.167***	0.319***	0.359***	0.163***	0.064	0.116	0.363***
gap	0.141**	0.145**	0.157***	0.284**	0.137**	0.128**	0.282*	0.478**
fairness		0.029	0.235***	0.326***				0.329***
fairness.income			-0.036***	-0.044***				-0.043***
fairness.gap				-0.030				-0.034
equality					0.014	-0.069	0.004	0.059
equality.income						0.015	0.007	-0.001
equality.gap							-0.023	-0.028
health	1.027***	1.021***	1.017***	1.017***	1.028***	1.029***	1.027***	1.016***
fs	0.157***	0.160***	0.154***	0.149***	0.157***	0.156***	0.157***	0.150***
freedom	0.072*	0.077**	0.086**	0.085**	0.071*	0.070*	0.069*	0.083**
god	0.149***	0.155***	0.150***	0.151***	0.146***	0.149***	0.152***	0.154***
purpose	0.237**	0.235**	0.241***	0.246***	0.237**	0.246***	0.248***	0.254***
friend	0.233**	0.246**	0.244**	0.246**	0.226**	0.216**	0.219**	0.237**
leisure	0.204**	0.203**	0.206**	0.199**	0.202**	0.208**	0.206**	0.197**
age	0.011**	0.011**	0.011**	0.011**	0.011**	0.011**	0.011**	0.011**
male	-0.226*	-0.237*	-0.253**	-0.245**	-0.220*	-0.214*	-0.214*	-0.234*
Observations	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299
Likelihood ratio χ^2	317.77***	319.19***	328.19***	330.02***	318.17***	319.77***	321.07***	332.68***
Pseudo-R^2	0.1498	0.1505	0.1547	0.1556	0.1500	0.1507	0.1514	0.1568
Approximate likelihood ratio	13.72	13.69	17.98	23.02*	13.82	20.46*	21.47*	28.67**

Notes:
The asterisk (*) represents the significant level: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.10$.
n denotes the sample size.
Likelihood ratio $\chi 2$ statistics indicate the significance of model. All the models are significant at 1% of significance level.
Pseudo-R^2 measures the goodness of fit of model to the data.
The approximate likelihood ratio test is used to detect the equality assumption of coefficients across response categories. The obtained insignificant approximate likelihood ratio test results show that Model (1), (2), (3) and (5) fulfill such assumption.
The involved interactive terms are fairness.income, fairness.gap, equality.income and equality.gap. Only fairness.income is significant at 1% of significance level

Table 4: Results of the ordered probit model of *happiness*

Independent variables	Model (9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
income	0.097***	0.097***	0.177***	0.202***	0.095***	0.047	0.081	0. 216***
gap	0.088***	0.090***	0.095***	0.176***	0.086**	0.082**	0.178**	0. 296 ***
fairness		0.016	0.124***	0.183***				0.186***
fairness.income			-0.019***	-0.024***				-0.024***
fairness.gap				-0.019				-0.022*
equality					0.008	-0.032	0.015	0.044
equaity.income						0.007	0.002	-0.002
equality.gap							-0.014	-0.017
health	0.591***	0.588***	0.585***	0.584***	0.592***	0.593***	0.592***	0. 584***
fs	0.094***	0.096***	0.093***	0.090***	0.094***	0.094***	0.094***	0.090***
freedom	0.040*	0.042*	0.047**	0.046**	0.040*	0.039*	0.038*	0.045**
god	0.088***	0.091***	0.088***	0.090***	0.087***	0.088***	0.090***	0.091***
purpose	0.134**	0.134**	0.139**	0.141***	0.134**	0.139**	0.140***	0.145***
friends	0.123**	0.131**	0.130**	0.131**	0.119*	0.114*	0.116*	0.128**
leisure	0.120**	0.120**	0.122**	0.117**	0.119**	0.122**	0.121**	0.115**
age	0.006**	0.006**	0.006**	0.006**	0.006**	0.006**	0.006**	0.006**
male	-0.140**	-0.146**	-0.158**	-0.153**	-0.137*	-0.134*	-0.133*	-0.146**
Observations	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299
Likelihood ratio χ^2	323.15***	324.47***	332.09***	334.51***	323.57***	324.69***	326.24***	337.35***
Pseudo-R^2	0.1523	0.1530	0.1566	0.1577	0.1525	0.1531	0.1538	0.1590
Approximate likelihood ratio	9.09	9.08	13.80	18.75	9.09	14.72	15.95	23.24

Notes:
The asterisk (*) represents the significant level: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.10$.
n denotes the sample size.
Likelihood ratio $\chi 2$ statistics indicate the significance of model. All the models are significant at 1% of significance level.
Pseudo-R^2 measures the goodness of fit of model to the data.
The approximate likelihood ratio test is used to detect the equality assumption of coefficients across response categories. The obtained insignificant approximate likelihood ratio test results show that Model (10) to (16) fulfill such assumption.
The involved interactive terms are faimess.income, faimess.gap, equality.income and equality.gap. Only faimess.income is significant at 1% of significance level.

Table 5: Marginal effects based on Model (3) and Model (11) for each level of perceived happiness

Independent variable	Ordered logit			Ordered probit		
	Outcome			Outcome		
	(2)	(3)	(4)	(2)	(3)	(4)
income	-.0068	-.0713	.0781	-.0072	-.0621	.0693
gap	-.0034	-.0349	.0383	-.0038	-.0332	.0371
fairness	-.0050	-.0525	.0576	-.0050	-.0434	.0484
fairness.income	.0008	.0081	-.0089	.0008	.0067	-.0074
health	-.0218	-.2270	.2488	-.0237	-.2056	.2293
fs	-.0033	-.0343	.0376	-.0038	-.0325	.0363
freedom	-.0019	-.0193	.0212	-.0019	-.0165	.0184
god	-.0032	-.0335	.0367	-.0036	-.0310	.0346
purpose	-.0051	-.0537	.0589	-.0056	-.0487	.0543
friend	-.0052	-.0545	.0597	-.0053	-.0458	.0510
leisure	-.0044	-.0459	.0503	-.0049	-.0429	.0478
age	-.0002	-.0024	.0026	-.0003	-.0022	.0025
male	.0054	.0563	-.0617	.0064	.0555	-.0619

Notes:
Outcome (1) is not applicable in this study as none of respondent chosen the answer of 'not at all happy'.
Outcome (2) represents the probability of a respondent being not very happy; Outcome (3) indicates the probability represents the probability of a respondent being rather happy; Outcome (4) shows the probability of a respondent being very happy.
All marginal effects are significant at 5% of significant level.

Conclusion

- higher relative income level can make Malaysians happier which this result is consistent with the Easterlin's paradox
- the empirical analysis confirms that the mediating role of the fairness without incentive for individual effort perception is able to loosen the impact of relative income level on happiness
- Malaysians wish for a fair income to make them happy
- the marginal effects analysis shows that Malaysians care the most about their health conditions before their income
- policy makers and Malaysian Government may look into the welfare policy that related to the health care and a fairer income generation system


thank
you