Consumption Comparisons and Ethnic Identity: Determinants of Subjective Well-Being in Indonesia

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Abstract

This paper examines the impact of reference group consumption on subjective well-being (SWB) in Indonesia, using data from the Indonesian Family Life Survey (IFLS). In contrast to previous studies focused on Western economies, we explore how locational-demographic and ethnic reference groups influence SWB in a developing country context. Our analysis employs individual and time fixed effects to isolate the impact of reference group consumption. Consistent with economic theory, we find that individual consumption positively affects happiness and perceived living standards. In contrast, ethnic-based reference group consumption negatively correlates with perceived living standards, indicating that ethnic identity significantly shapes consumption comparisons in Indonesia. Specifically, a one standard deviation increase in ethnic reference group consumption reduces perceived living standards by 0.022 points on a three-point scale. These findings underscore the importance of considering ethnic-based comparison effects in welfare policies for multi-ethnic societies undergoing rapid economic transformation. (*JEL* I31, D63, O12, Z13)

1 Introduction

Understanding the determinants of subjective well-being (SWB) has become a significant focus in economic research, especially regarding the role of income comparisons. Prior studies have established that individuals' perceptions of well-being are influenced not only by their absolute income but also by their relative income compared to various reference groups. This phenomenon, widely studied in Western and developed economies, has shown that income comparisons often lead to feelings of relative deprivation, thereby negatively impacting life satisfaction (Clark and Oswald, 1996; Luttmer, 2005; Ferrer-i-Carbonell, 2005). However, empirical evidence from developing countries, particularly those with diverse social structures, remains scarce.

This paper aims to fill this gap by examining the impact of reference group consumption on subjective well-being in Indonesia. Specifically, we focus on how different definitions of reference groups–one based on locational-demographic characteristics (sex, education, age, and location) and another based on ethnicity–affect individuals' perceptions of their well-being. While the former group has been largely studied in the existing literature, the latter presents a novel addition. Our motivation stems from the fact that ethnic identity plays a crucial role in shaping social interactions, aspirations, and economic opportunities in Indonesia, potentially leading to distinct effects of consumption comparisons and their impact on well-being.

Indonesia, the world's fourth most populous country, presents a unique and pertinent context for examining the effects of consumption comparisons on SWB. With a population of over 280 million people spread across more than 17,000 islands, Indonesia is characterized by significant ethnic diversity and economic disparities. The rapid economic growth experienced by Indonesia over the past few decades, coupled with its complex socio-cultural fabric, makes it an ideal setting to investigate how consumption comparisons influence subjective well-being.

Our primary research question is: "What is the impact of reference group consumption on subjective well-being in Indonesia?" We hypothesize that both individual consumption and reference group consumption significantly influence SWB, with individual consumption having a positive effect and reference group consumption having a negative effect. Additionally, we anticipate that

ethnic-based reference groups will exhibit stronger and more pronounced negative effects on SWB due to the deep-rooted social and economic disparities across ethnic groups in Indonesia.

To test our hypothesis, we utilize data from the Indonesian Family Life Survey (IFLS), a rich panel dataset covering a broad range of economic and social questions. By leveraging the panel nature of the data, we control for individual fixed effects and employ robust methodological approaches to isolate the impact of reference group consumption on SWB. Our analysis includes measures of happiness, living standards, and economic status, offering a comprehensive view of subjective well-being.

Our findings reveal that individual consumption positively impacts happiness and living standards, with the effect being more pronounced for measures of perceived living standards. Moreover, reference group consumption, when defined by ethnicity, shows a significant negative correlation with living standards, underscoring the importance of ethnic identity in consumption comparisons in Indonesia. Specifically, increasing the consumption of an individual's ethnic reference group by one standard deviation, has a negative effect on one's perceived living standards of 0.022 points on a three point scale or about 3.7% of one standard deviation of living standards, consistent with previous literature on the subject looking at developing countries (Atsebi and Ferrer-i-Carbonell, 2022). Interestingly, we find no significant effect of either own or reference group consumption on perceived economic status, suggesting that other factors might better capture this dimension of well-being. This is confirmed when we look at the effect of own income on SWB rather than own consumption, where the effect becomes positive and significant.

This study contributes to the literature in several ways. First, it extends the investigation of income comparisons and SWB to a developing country context in Asia, providing new insights into the role of cultural and social factors in shaping economic behavior. Second, by introducing ethnicity as a reference group criterion, we offer a novel perspective on how social identity influences comparison effects and well-being. Finally, our findings have important policy implications for understanding and addressing the determinants of well-being in multi-ethnic societies undergoing rapid economic transformation.

The remainder of the paper is organized as follows: Section 2 discusses previous literature on the subject, Section 3 presents our data, Section 4 describes our empirical strategy, Section 5 discusses our results, and Section 6 concludes.

2 Previous Literature

The study of subjective well-being (SWB) and its determinants, including income comparisons, has been a vibrant area of research in economics. Various scholars have contributed significantly to understanding how individuals perceive their well-being relative to others, with numerous studies focusing on different regions, comparison groups, and methodological approaches.

Early research by Ferrer-i-Carbonell and Frijters (2004) investigates the impact of methodology on happiness determinants, concluding that whether satisfaction surveys are treated as ordinal or cardinal makes little difference. They emphasize the importance of controlling for individual fixed effects to obtain robust results. Extending this analysis, Ferrer-i-Carbonell (2005) compares different reference group definitions and finds significant income effects on well-being in Germany. These foundational studies highlight the critical role of methodological rigor and the varying impacts of reference group definitions.

Building on these methodological insights, Senik (2004) provides a nuanced perspective from the highly uncertain period in Russia during the 1990s and early 2000s. She addresses methodological concerns, such as attrition and individual heterogeneity, by employing inverse probability weighting and fixed-effects models. Complementing her methodological approach, we also include these in our analysis. Interestingly, her study finds a positive correlation between reference group income and life satisfaction, contrary to many other studies. This suggests that in times of economic uncertainty, positive comparisons might offer a sense of security or optimism.

Clark and Senik (2010) extend the exploration of income comparisons to European countries, highlighting variation in the intensity of income comparisons by country. They find that richer individuals tend to compare less and that those who engage more in comparisons report lower happiness levels. This negative effect is smaller for the rich, likely because their comparisons are

typically with less wealthy individuals, suggesting a dominant upward comparison trend characterized by status shame and jealousy. This study underscores the complexity of income comparisons and the varying impacts based on socio-economic status.

Further emphasizing the role of geographic context, Luttmer (2005) examines the impact of neighborhood income on individual well-being in the United States. He demonstrates that higher neighborhood income negatively predicts well-being after controlling for personal income, highlighting the significance of immediate social environments in shaping perceptions of relative well-being.

In a different context, Perez-Truglia (2020) investigates the effects of income transparency on well-being, leveraging a natural experiment. He finds that making incomes public, increased the gap in happiness between richer and poorer individuals by 29 percent, and it increased the life satisfaction gap by 21 percent. This study illustrates the power of transparency and information in modifying the dynamics of income comparisons and perceived well-being.

Complementing these findings in a developing country context in Africa, Atsebi and Ferrer-i-Carbonell (2022) explore the determinants of subjective well-being in Tanzania, using household income and reference group income (leave-one-out mean). They find consistent results with previous studies, emphasizing the importance of relative income and the robustness of their findings to various clustering methods. Their study reaffirms the significance of both individual and reference group incomes in determining well-being.

Taken as a whole, previous literature points to the significant role of income comparisons in shaping subjective well-being. Studies consistently find that individual well-being is influenced not just by absolute income but also by relative income compared to various reference groups. The intensity of income comparisons varies by socio-economic status and context, with richer individuals tending to compare less and upward comparisons generally leading to lower happiness levels. Methodological approaches highlight the importance of controlling for individual fixed effects and dealing with potential attrition biases to obtain robust results. Additionally, the impact of reference group income can differ based on economic conditions, with upward comparisons potentially offering a sense of security and optimism during uncertain times.

Our study contributes to these findings by offering a novel approach to defining reference groups based on ethnicity. While previous studies, such as that of Ferrer-i-Carbonell (2005), have focused on reference groups defined by geographic location, age, or education, we introduce ethnicity as a potentially salient factor in shaping income comparisons in a multi-ethnic context like Indonesia.

Ethnic identity often plays a crucial role in social interactions, economic opportunities, and political affiliations. Understanding the impact of ethnic-based reference groups on subjective well-being can provide deeper insights into how cultural and social contexts influence economic behaviours and perceptions. In particular, Ananta et al. (2015) highlight the importance of ethnicity in Indonesia, arguing that because individuals are free to choose whatever ethnic group they identify with in census records, ethno-demographic measures indicate a strong sense of ethnic self-identify. Additionally, they find that education levels, income, and economic opportunities vary significantly across ethnic groups. Such disparities suggest that ethnic identity can significantly shape individuals' social and economic experiences, making it a vital factor in studying income comparisons and subjective well-being in Indonesia. In the following section, we present our data and further discuss the Indonesian context.

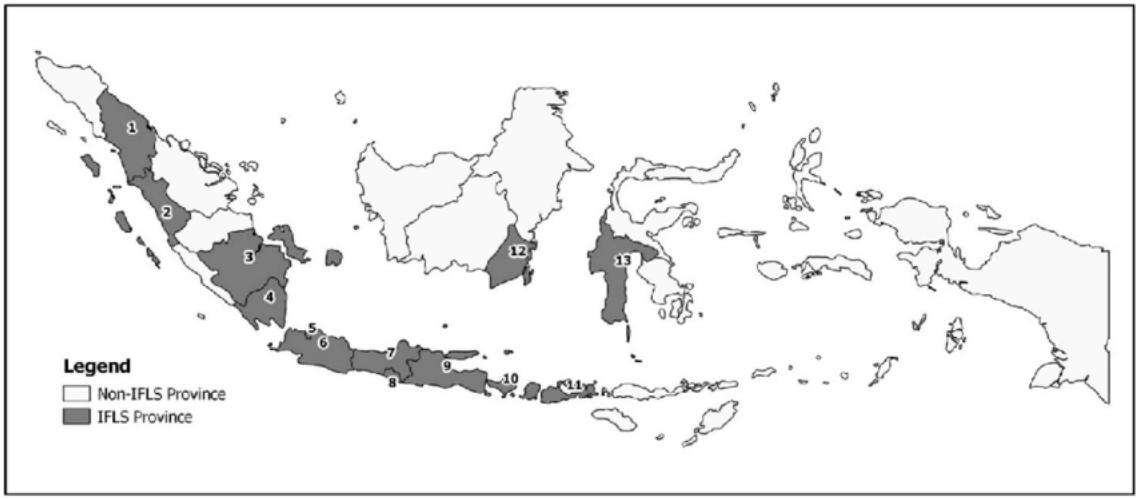
3 Data

We test our hypothesis in Indonesia with data from the last two decades. Indonesia is composed of more than 17,000 islands and is the fourth most populous country in the world with 280 million people. Starting in the 1970s, Indonesia's economy began to industrialize and move more quickly away from agriculture as the sole sector. As a result, per-capita GDP growth was rapid from 1970 until 1998, the year the Asian financial crisis devastated the Indonesian economy. Following two years of contraction, growth resumed again at a fast pace, averaging 3.7% annual per-capita GDP growth from 2000–2020 (World Bank, 2024). During these last two decades of rapid growth, RAND has facilitated broad economic and social surveys across most of Indonesia that also ask respondents questions related to their SWB.

3.1 Data source

We utilize the Indonesian Family Life Survey (IFLS) which has been conducted across five waves starting in 1993 up until 2015 (Strauss et al. 2009 & 2016).[1] The survey was implemented in 13 of Indonesia's 27 provinces (shown below in Figure 1) and was designed to be representative of roughly 85% of the country's total population. The individual, family, and community surveys conducted as part of the IFLS cover a broad range of economic and social questions, but questions regarding subjective well-being were not introduced until the fourth survey wave. For this reason, we use only the fourth and fifth waves of the survey for our analysis. These surveys were conducted in 2007/2008 and 2014/2015 respectively. We keep only individuals present in both waves four and five who were at least 18 years old at the time of the fourth wave survey, which corresponds to approximately 10,000 unique individuals. The survey data also includes individual weights which we use in our regressions to account for attrition and to appropriately weigh each individual, ensuring sample representativeness.

Figure 1: Map of provinces covered by the IFLS



[1]RAND has been assisted by various universities and survey organizations throughout the years. For the waves we use, four and five, University of Gadjah Mada and Survey METRE provided research and survey implementation support.

3.2 Controls

Across our empirical specifications we always control for own consumption or income, age, sex, educational attainment, ethnicity, and location.

Consumption is calculated assuming even consumption across all family members by summing all food and non-food expenditures in the last month and dividing by the number of household members. Income is also calculated on per-capita terms, assuming that income within a household is pooled and divided equally across the number of household members, however, income is only reported for wages/salaries or profits from one's own business over the last year. Following other literature that has used the IFLS surveys, we exclude the relatively small share of individuals with non-traditional educational backgrounds (e.g. Islamic education) (Sohn 2016 & 2017). Each individual's highest level of education attained is recorded as Elementary, Junior High, Senior High, or University. For ethnicity, each individual is asked which of the 25+ ethnic groups of Indonesia is the most influential in their daily household life. The most granular location data accessible for individuals is the Kabupaten, which is the administrative division immediately below province. There are currently 416 Kabupaten throughout Indonesia, of which, 236 are represented in our data.

TABLE I.
Consumption, Income, and Age Summary

	25%	50%	Mean	75%
Consumption (monthly)	484,523	786,000	2,030,771	1,314,276
Income (yearly)	2,075,498	5,450,000	31,259,937	12,000,000
Age	29	40	41	52

There is large consumption and income inequality across individuals in our sample, exhibited in Table I by the fact that mean consumption and income values are greater than their respective 75th percentile values. To account for this we will take logs of consumption and income when using them in our regression specifications. In our sample, respondent age is distributed more normally, with a median value of 40 years compared to a mean age of 41 years.

In Table II we see there is a bifurcation in the highest educational attainment of survey re-

spondents. 44% of respondents only have an elementary school education, 16% have up to junior high school education, 27% have senior high school attainment, and the remaining 13% attained university education.

Table III shows the share of respondents broken down by their ethnicity for the top 10 ethnicities amongst our respondents. Jawa represents the single most popular ethnic group with 42% of our sample, followed by Sunda with 12%.

TABLE II.
Highest Educational Attainment Summary

	Share of respondents
Elementary	44%
Junior High	16%
Senior High	27%
University	13%

TABLE III.
Ethnicity Summary

	Share of respondents
Jawa	42%
Sunda	12%
Minang	6%
Bali	5%
Betawi	5%
Banjar	4%
Batak	3%
Bugis	3%
Sasak	3%
Bima-Dompu	2%
Other ethnicities	14%

3.3 Reference group construction

Our research question asks, "What is the impact of your reference group's income on your subjective well-being?" The answer may depend on the definition of reference group, so we propose and test two distinct reference group definitions. Our first reference group strategy has been used extensively in the past and essentially involves matching individuals to others of the same sex who are in the same education bracket, age bracket, and location. Our second reference group strategy is more novel and incorporates only matching individuals to others of the same ethnic group who are in the same area, regardless if they are of the same sex, education, or age. After each individual is assigned a reference group for each strategy, we calculate the leave-one-out reference group average for the consumption and income variables.

Our construction of the ethnic reference group definition is motivated by Ananta et al. (2015)

who highlight the importance of ethnicity in Indonesia, arguing that because individuals are free to choose whatever ethnic group they identify with most in census records (including options for "Other"), ethno-demographic measures indicate a strong sense of ethnic self-identify. Additionally, they find that education levels, income, and economic opportunities vary significantly across ethnic groups, suggesting that comparisons within ethnic reference groups may play a strong role in notions of SWB in Indonesia.

Our main SWB dependent variables are drawn from questions pertaining to happiness, living standards and economic status. In the following Empirical Strategy section we provide more detail on these variables.

4 Empirical Strategy

4.1 Questions on Subjective Well-Being (SWB)

Our empirical model is based on subjective, self-reported measures of happiness, living standards, and economic status. Questions on Subjective Well-Being (SWB) have been incorporated into surveys since the efforts of Bradburn (1969), Cantril (1965), and Likert (1932). Moreover, previous empirical evidence has demonstrated that individuals are willing and able to provide answers to SWB questions, that SWB is linked with the economic concept of welfare, and that interpersonal compatibility at an ordinal level can be assumed (Ferrer-i-Carbonell and Frijters, 2004; Ferrer-i-Carbonell, 2013; Frey and Stutzer, 2002; and Clark et al., 2008). This provides support for our use of responses to SWB questions as an outcome variable in the analysis.

In the data, individuals were asked questions on their "opinion on the quality of [their] life". For self-reported measures of happiness, individuals were asked: *Taken all things together how would you say things are these days - would you say you were very happy, pretty happy, or not too happy?* Their score was measured on a scale of very happy (1) to very unhappy (4) and we recoded them to go from very unhappy (1) to very happy (4). For living standards, the question was: *Concerning your current standard of living, which of the following is true? It is less than*

adequate for my needs (1); It is just adequate for my needs (2); It is more than adequate for my needs (3); and don't know (8). We dropped responses of "don't know" in our analysis. Finally, for economic status, individuals were asked: *Please imagine a six-step ladder where on the bottom (the first step), stand the poorest people, and on the highest step (the sixth step), stand the richest people. On which step are you today?* Responses were measured on a scale of 1 (poorest) to 6 (richest). We believe responses to these questions are of interest given that they potentially measure three distinct aspects of life satisfaction, allowing us to examine the channels through which reference group effects may impact life satisfaction.

4.2 Empirical Strategy

We estimate the following regression equation:

$$Y_{i,t} = \alpha_0 + \alpha_1 \log C_{i,t} + \alpha_2 \log \bar{C}_{r,t} + X_{i,t}^{'}\gamma + \phi_i + \phi_t + \varepsilon_{i,t} \tag{1}$$

where $Y_{i,t}$ is equal to the self-reported measures of happiness, living standards, or economic status for individual i at time t. The parameters of interest are α_1 and α_2 which measure the effect of own consumption and reference group consumption respectively. $C_{i,t}$ is thus the value of consumption for individual i at time t and $\bar{C}_{r,t}$ is the value of leave-out mean consumption of the reference group to which the individual belongs. We also include a vector of individual controls $X_{i,t}^{'}$ which includes whether the individual is female, the individual's age, the individual's highest level of education attained (University, Senior High, Junior High, or Elementary), the district (*Kabupaten*) in which the individual resides, and the individual's ethnicity (includes options for 28 Indonesian ethnic groups and an "Other" option). Additionally, we set probability weights of individuals according to the weights specified in the survey data to account for attrition and to appropriately weigh each individual to ensure sample representativeness.

As a valuable addition to the literature on reference income effects in Asia, our data is a panel, allowing us to control for individual time-invariant fixed effects (ϕ_i). This implies that our identification of reference group effects arises from within-individual variation. Specifically,

it comes from individuals who either move to a different region (thereby changing their reference group) or stay in the same region but observe changes in their reference group's consumption over the two periods. One issue with this identification strategy is that our results may be driven by a small number of individuals who move districts and self-select into a reference group that maximises their happiness. In our analysis approximately 8.8% of individuals move to another district across periods, however, we see that there is variation in reference group consumption across periods and that this change is similar in magnitude for both movers and non-movers. Moreover, as a robustness check, we run our analysis to include only non-movers across the two periods and find that our results remain the same, indicating that individuals did not move to select into the reference group that would maximise their well-being. We also control for year fixed effects (ϕ_t) to account for unobservable shocks that may have heterogeneously affected the survey at the two periods. Given this result and the use of individual fixed effects, we contend that our estimates of reference group effects are fairly causal.

We choose to run a linear model with individual fixed effects, given that previous literature has shown that assuming cardinality or ordinality of SWB questions do not change the results in terms of trade-offs between variables (Ferrer-i-Carbonell and Frijters, 2004). This allows for ease in interpretation of the coefficient estimates and limits the potential bias that occurs when estimating non-linear panel models using fixed effects (Greene, 2002). Since the reference group is defined as the leave-out mean consumption (excluding one's own consumption), clustering errors at the district level where the reference income is measured is unnecessary. Moreover, as our dependent variables are defined at the individual level and our independent variable (consumption) is defined at the household level, we cluster standard errors, $\varepsilon_{i,t}$ at the household level consistent with previous literature on the subject (Atsebi and Ferrer-i-Carbonell, 2022). In the following section, we present and discuss our results.

5 Results

5.1 Reference Consumption

We first look at the effect of individual consumption and reference group consumption on self-reported happiness, living standards, and economic status. We present the results of equation (1) in Table IV. The regressions include individual and time fixed effects and the set of controls described in Section 4.2. Errors are clustered at the household level.

In the odd columns, the reference group is defined as the Kabu which involves matching individuals to others of the same sex who are in the same *Kabupaten* (district), education bracket, and age bracket. For the even columns, the reference group is defined as Ethnic which incorporates only matching individuals to others of the same ethnic group who are in the same area, regardless of if they are of the same sex, education, or age. This is a novel definition of a reference group and these results present our main contribution to the literature.

In columns 1 and 2, the outcome variable is defined as happiness which represents an individual's response to a question inquiring how happy they are, measured on a scale of 1 (very unhappy) to 4 (very happy). As expected, consumption is positively correlated with happiness for both the Kabu and Ethnic reference group specifications. The estimates are almost identical: increasing own consumption by one standard deviation increases measures of happiness by 0.026 points on a four point scale (0.03x0.85=0.026 points) or about 6% of one standard deviation of happiness. This is similar to the findings of Atsebi and Ferrer-i-Carbonell (2022) who look at the effect of consumption on financial and life satisfaction in Tanzania. Looking at the effect of reference group consumption, we see a negative correlation between the leave-out mean consumption of the individual's reference group and the individual's happiness across both reference group definitions. The direction of these coefficient estimates are consistent with our hypothesis and previous literature, however, they are not statistically significant. The non-significance could be due to an absence of reference group effects in this data or that there is limited variation in the measurement of happiness, with 90% of individuals responding with values of 2 or 3.

TABLE IV.
Consumption Regression Results

	Happiness		Living Standards		Economic Status	
	Ref: Kabu	Ref: Ethnic	Ref: Kabu	Ref: Ethnic	Ref: Kabu	Ref: Ethnic
Log Consumption	0.030**	0.030**	0.070***	0.073***	0.034	0.033
	(0.011)	(0.011)	(0.013)	(0.013)	(0.021)	(0.020)
Log Leave-Out-Mean Ref. Consumption	-0.006	-0.011	-0.002	-0.030**	0.029	-0.001
	(0.010)	(0.011)	(0.013)	(0.013)	(0.020)	(0.020)
Obs.	18,834	20,648	18,834	20,648	18,834	20,648

*Standard errors in parentheses are clustered at the household level and significance levels are denoted in the following way: * p < 0.1, ** p < 0.05, *** p < 0.01. Regressions include additional controls and individual and time fixed effects.

Columns 3 and 4 present the regressions where the outcome variable is defined as an individual's perceived living standards measured on a scale of 1 (less than adequate) to 3 (more than adequate). Similar to the regressions of happiness, we see a significant, and positive relationship between consumption and self-reported measures of living standards across both reference group specifications. Specifically, increasing own consumption by one standard deviation increases measures of living standards by 0.06 points on a three point scale (0.07x0.85=0.06 points) or about 10% of one standard deviation of living standards. Again, this estimate is similar in magnitude (although somewhat larger) to those found in the previous literature. Looking at the effect of reference group consumption, we see a negative correlation between the leave-out mean consumption of the individual's reference group and the individual's living standards across both reference group definitions, however, the effect is only significant and meaningful for the Ethnic reference group. This could potentially point to the outsized importance of ethnic identity in Indonesia and that individuals compare themselves more to other members of their ethnic group rather than to those of similar age, sex, and education. Here, increasing the consumption of an individual's ethnic reference group by one standard deviation, has a negative effect on one's perceived living standards of 0.022 points on a three point scale (0.030x0.73=0.022) or about 3.7% of one standard deviation of living standards. This effect is equivalent to roughly a third of the effect of own consumption on perceived living standards (although in the negative direction). This means that although reference group consumption has a negative effect on perceived living standards, the positive effect

of own consumption is about three times as large, suggesting that own consumption has a much stronger effect on well-being than reference group consumption in this context.

Looking at columns 5 and 6, where the outcome variable is perceived economic status, we see no significant effect of own consumption or reference group consumption for either reference groups. This is a curious result, considering that this question had the most variance with responses being measured on a 6-point scale. The non-significant effect could be due to a misinterpretation of the question among individuals, as it asked participants to imagine a "six step ladder" from poorest to richest and to place oneself on one of the ladder's steps. This may be somewhat complicated to answer and it is unclear if participants considered the "richest" step to represent those only in their reference group, in all of Indonesia, or even globally. Additionally, it could be that own consumption and reference group consumption are simply not strongly related to perceived economic status in this context and that other factors like net income or assets may be better predictors. In the next section, we extend our findings by running a robustness check using own income and reference group income as the independent variables of interest rather than consumption.

Overall, our results show that individual consumption had a small but significant positive effect on happiness and living standards, with the effect being strongest for living standards. Reference group consumption was negatively correlated with happiness and living standards, but was only statistically significant for the Ethnic reference group when looking at living standards as an outcome, pointing to the importance of ethnic comparisons in Indonesia. Notably, perceived economic status showed no significant effect from neither own nor reference group consumption, possibly due to question misinterpretation or the outweighing relevance of other factors like net income.

5.2 Reference Income

Our investigation on the effect of own and reference group income on measures of SWB yields complementing results to those found in the previous section. Looking first at columns 1 and 2 of Table V, we see that own income and reference group income has no significant effect on self-

reported happiness. This contrasts to our findings in the previous section where we found that own consumption was positively correlated with happiness. We posit that this could be because consumption likely has a more direct effect on happiness than income. Moreover, Lim et al. (2020) find that in Thailand and the Philippines, income has no significant effect on happiness due to the moderating effect of societal values. The same relationship could be present in Indonesia as a similar South-East Asian country.

TABLE V.
Income Regression Results

	Happiness		Living Standards		Economic Status	
	Ref: Kabu	Ref: Ethnic	Ref: Kabu	Ref: Ethnic	Ref: Kabu	Ref: Ethnic
Log Income	0.002	0.002	0.007***	0.008***	0.008**	0.008**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.003)
Log Leave-Out-Mean Ref. Income	0.001	-0.004	-0.005	-0.024**	-0.008	-0.013
	(0.005)	(0.008)	(0.004)	(0.010)	(0.008)	(0.013)
Obs.	18,894	20,648	18,894	20,648	18,894	20,648

*Standard errors in parentheses are clustered at the household level and significance levels are denoted in the following way: * p < 0.1, ** p < 0.05, *** p < 0.01. Regressions include additional controls and individual and time fixed effects.

In columns 3 and 4, our results confirm the findings found in the previous section: own income has a positive and significant effect on living standards and reference income has a negative and significant effect on living standards for only the Ethnic reference group. The estimates of the effect of own income on living standards are about half of those for the effect of consumption on living standards found in section 5.1, increasing income by one standard deviation correlates with an increase in living standards of 0.03 points on a three point scale (0.007x4.25=0.03 points) or about 5% of one standard deviation of living standards. For the effect of ethnic reference group income on living standards, increasing the income of the individuals reference group by one standard deviation, results in a decrease in perceived living standards of 0.023 points on a three point scale (0.024x0.95=0.023) or about 3.8% of one standard deviation of living standards. This effect is almost identical to that found in the previous section looking at the effect of reference group consumption. This provides support for our finding that ethnicity seems to play a large role in comparisons and reference effects in Indonesia, with ethnic reference group income and

consumption having a negative effect on one's perceived standard of living.

Finally, in columns 5 and 6, we look at the effect of own and reference income on perceived economic status. In the previous section, somewhat surprisingly, we found that own consumption had no significant effect on perceived economic status. Here however, we find that income has a positive and significant effect on perceived economic status: increasing own income by one standard deviation, increases perceived economic status by 0.034 points on a six point scale (0.008x4.25=0.034 points) or about 3.9% of one standard deviation of perceived economic status. This provides support for our previous argument that income may be a better predictor of feelings of economic status than consumption. Looking at the effect of reference income on economic status, we see that the coefficient estimates are negative, although they are insignificant for both reference groups. This suggests that reference group effects do not seem to have a significant impact on perceived economic status. As stated previously, another explanation could be that the question for economic status was somewhat complicated to answer and left sizable room for individuals to compare their economic status to the entire global community, potentially explaining why specific reference group effects are muted here. In the following section, we aim to extend our analysis further and investigate whether reference group effects are amplified for upward comparisons in the Indonesian context, comparing our findings to those found in the previous literature.

5.3 Upward Comparisons

In Table VI, we look at the effect of own consumption and reference group consumption only for those individuals whose consumption is less than the mean of their respective reference group. In this way, we can investigate if the stronger effects of upward comparisons noted in the previous literature are also present in this context. For the regressions, we run Equation 1, replacing reference group consumption with the absolute value of the difference between the individual's own consumption and the mean of his or her reference group's consumption, only for those individuals whose consumption is below the mean, allowing us to examine if comparison effects are stronger as one's consumption moves farther below their reference group mean.

TABLE VI.
Upward Comparison Regression Results

	Happiness		Living Standards		Economic Status	
	Ref: Kabu	Ref: Ethnic	Ref: Kabu	Ref: Ethnic	Ref: Kabu	Ref: Ethnic
Log Consumption	0.006	0.022	0.091***	0.069**	0.136***	0.063
	(0.029)	(0.024)	(0.032)	(0.028)	(0.052)	(0.047)
Log Difference of Consumption from Leave-Out-Mean Ref. Consumption for those below the mean	-0.025	-0.007	-0.025	-0.028	0.031	-0.011
	(0.017)	(0.015)	(0.021)	(0.019)	(0.032)	(0.028)
Obs.	7,920	10,614	7,920	10,614	7,920	10,614

*Standard errors in parentheses are clustered at the household level and significance levels are denoted in the following way: * p < 0.1, ** p < 0.05, *** p < 0.01. Regressions include additional controls and individual and time fixed effects.

In all regressions, own consumption has a positive impact on SWB, consistent with economic theory, although these estimates are not significant when looking at happiness as an outcome variable and economic status for the Ethnic reference group specification. Moreover, the majority of reference group estimates are negative, consistent with the theory that having one's consumption move farther below the mean of his or her reference group has a negative effect on SWB. Most of the reference group coefficients are also larger in magnitude than those found in Table IV, providing support for the pronounced role upward comparisons may play in comparison effects. However, this is difficult to determine for certain, since none of the reference effects are significant in our analysis.

Overall, it is difficult to conclude whether there is evidence of stronger upward comparisons in the Indonesian context. Although the direction of the coefficient estimates support the theory, the varying levels of significance make any inference inconclusive. This may be due to less variation in the data caused by having fewer observations when only looking at those below their reference group mean (naturally, the number of observations are approximately half of those in Tables IV and V). Applying data from future iterations of the IFLS may help identify the presence of upward comparison effects in Indonesia.

6 Conclusion

This paper provides new insights into the determinants of subjective well-being (SWB) in Indonesia, focusing on the impact of reference group consumption. Utilizing data from the Indonesian Family Life Survey (IFLS), we investigate how individual consumption and reference group consumption, particularly defined by ethnicity, influence self-reported happiness, living standards, and perceived economic status.

Our findings reveal that individual consumption positively and significantly impacts both happiness and living standards, corroborating the established relationship between higher personal consumption and enhanced well-being. The effect is more substantial for perceived living standards, emphasizing the crucial role of personal consumption in shaping perceptions of living conditions.

Conversely, reference group consumption, when defined by ethnicity, shows a significant negative impact on perceived living standards. This underscores the importance of ethnic identity in consumption comparisons in Indonesia, suggesting that individuals experience greater relative deprivation when comparing their consumption to that of their ethnic peers. Specifically, increasing the consumption of an individual's ethnic reference group by one standard deviation, has a negative effect on one's perceived living standards of 0.022 points on a three point scale or about 3.7% of one standard deviation of living standards.

Our analysis extends the literature by incorporating ethnicity as a reference group criterion, highlighting the cultural and social dimensions of economic behavior in a multi-ethnic, developing society. The results are robust to various controls, including individual fixed effects and time fixed effects, enhancing the causal interpretation of our findings.

This study has important policy implications. It suggests that in multi-ethnic societies like Indonesia, welfare policies should consider the nuanced effects of relative consumption on well-being. Addressing the disparities within ethnic groups and improving individual consumption can significantly enhance overall well-being. Additionally, understanding the negative effects of ethnic-based consumption comparisons can help design interventions that mitigate feelings of relative deprivation.

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