EMPIRICAL ARTICLE

Children can represent complex social status hierarchies: Evidence from Indonesia

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Abstract

Children's ethnicity-status associations are often studied in societies where one ethnic group possesses status across multiple dimensions, such as political influence and wealth. This study examined children's (6–12 years) and adults' representations of more complex hierarchies in Indonesia ($N=341$; 38% Native Indonesian, 33% Chinese Indonesian, and 27% other ethnicities; 55% female, 36% male; 2021–2022), a society where ethnic groups hold distinct forms of status (on average, Native Indonesians have political influence; Chinese Indonesians have wealth). By 6.5 years, children associated Native Indonesians with political influence and Chinese Indonesians with wealth. Intersectional analyses indicated that ethnicity-status associations were stronger for male than female targets. Children of all ethnicities preferred Chinese Indonesians and preferences were predicted by wealth judgments.

Almost all children grow up in hierarchical societies where groups vary in status (Heck et al., 2022; Mandalaywala, 2019; Sidanius & Pratto, 1999). *Status* is a complex and heterogeneous concept that refers to high relative standing within a social system that often comes with various forms of power, including the power to control the distribution of resources, to grant others permission to act, and to set norms (Gülgöz & Gelman, 2017; Mandalaywala et al., 2020). Two important dimensions of status that are the focus of this study are a group's *wealth*, which is closely tied to material resources, and *political influence*, which includes the ability to make societal rules and decisions (Olson et al., 2012; Pratto et al., 2006). Children's awareness of *which* groups hold these forms of status has far-reaching consequences; children's group-status associations lay the foundation for the development of biased social preferences in favor of high-status groups (Bigler & Liben, 2007; Shutts, 2015).

Much research has focused on children's status associations and group preferences in societies where one ethnic group possesses almost *all* forms of status (e.g., White Americans in the United States; Dukler & Liberman, 2022; Elenbaas & Killen, 2016; Ghavami & Mistry, 2019; Mandalaywala et al., 2020; Newheiser & Olson, 2012; Shutts et al., 2016). However, there are less well-studied societal contexts, such as Indonesia, where one group has high status on one dimension (Native Indonesians have greater political influence) and a different group has high status on another (Chinese Indonesians have greater wealth). Little is known about whether children growing up in these contexts associate ethnic groups with *distinct* forms of status. Addressing this question can offer fundamental insights into children's ability to represent more complex hierarchies and also provides novel evidence regarding how children coordinate multiple status dimensions in their formation of group preferences. This research investigated these questions with 6- to 12-year-old children and adults in Indonesia. Specifically, we examined the development of associating each Indonesian ethnic group with their respective form of status and how these status judgments relate to ethnic group preferences.

Children's ethnicity status associations

From early in development, children associate status with societal groups (Bigler et al., 2003; Dukler & Liberman, 2022; Marshall et al., 2022; Olson et al., 2012; Qian et al., 2019; Shutts et al., 2016). For example, children as young as 3- to 5 years-old in South Africa, Uganda, and the United States notice group-based wealth disparities, associating White people more than Black people with high-value belongings (e.g., nice houses and toys; Marshall et al., 2022; Olson et al., 2012; Shutts et al., 2016). Some studies find that young children's tendency to associate ethnic groups with wealth status is just as strong as their older peers (Dunham et al., 2014; Olson et al., 2012), while other research has found that these associations strengthen across early to middle childhood (Elenbaas & Killen, 2016; Marshall et al., 2022).

In addition to wealth, there is also evidence that children associate societal groups with political influence. Studies with 5- to 10-year-olds in the United States find that most children accurately judge that U.S. presidents are usually White, with this knowledge becoming more robust over childhood (Bigler et al., 2008; Patterson et al., 2013). Similarly, 5- to 10-year-old children in India demonstrate an awareness of which ethnic groups tend to have political status, such that they choose light-skinned South Asian or White peers (i.e., ethnic groups with lighter skin tones) when judging who is likely to be elected classroom president (Santhanagopalan et al., 2022).

Although prior research suggests that children can associate groups with the key status dimensions of wealth and political influence, these studies have important limitations. First, studies that have examined children's political judgments ask about ethnic groups that are *both* politically and economically advantageous (i.e., White Americans in the United States and ethnic groups with lighter skin tones in India). As such, it is unclear if children are capable of associating ethnic groups with each form of status. For example, it is possible that children are only aware of *one* status dimension, such as wealth, and generalize this knowledge to other status dimensions they know less about, such as political influence. In line with this possibility, children infer that wealthy people are also popular, motivated, and intelligent (Shutts et al., 2016; Sigelman, 2012) and could be making similar generalizations to political influence.

Some studies have examined societies where these dimensions come apart, such as in South Africa and Uganda where White people have wealth and Black people have political influence. However, these studies combined wealth and political judgments into one broad status measure (e.g., social ladder tasks; Marshall et al., 2022) or focused only on children's wealth judgments (Olson et al., 2012). Because wealth and political status dimensions have not both been examined independently, it remains unclear whether children only have a *general* concept of status (e.g., "White people are a high-status group") that they apply to the specific dimension being asked about or whether they have more fine-grained representations (e.g., "White people have wealth status but Black people have political status"). The present research addresses these limitations by asking children to judge *both* wealth and political status in the Indonesian context where the two status dimensions map onto distinct ethnic groups.

Status judgments and social group preferences

Beyond improving our understanding of children's status hierarchy representations, teasing apart status judgments can provide greater insight into the mechanisms underlying children's social group biases. Prior work suggests that, broadly speaking, status may be a key driver of children's group preferences (Shutts, 2015). For example, children from high-status groups tend to prefer their own group, and children from low-status groups often show no group preference or also favor high-status outgroups (Aboud & Skerry, 1984; Dunham et al., 2014; Newheiser & Olson, 2012; Qian et al., 2021; Shutts et al., 2016). Interestingly, however, when directly assessing the hypothesis that status perceptions underlie group preferences through correlational data, the evidence is mixed. Some studies find that children favor groups that they associate with high status (Horwitz et al., 2014; Mandalaywala et al., 2020; Marshall et al., 2022; Yazdi et al., 2020), while other results suggest that, although children *prefer* high-status groups, these preferences are not predicted by status perception measures (Dunham et al., 2014; Mandalaywala et al., 2020; Qian et al., 2021).

Studying *multiple* status dimensions in a more fine-grained way may help to inform when status does and does not predict social group preferences. Indeed, how children coordinate multiple dimensions of status when evaluating others is a key open question (e.g., Dukler & Liberman, 2022; Shutts et al., 2016). To date, no research to the best of our knowledge has examined children's judgments of different types of group status and whether a specific dimension more strongly relates to their social preferences. Addressing this question has both theoretical and practical importance: By specifying which forms of status undergird biased social preferences, we can develop more targeted anti-bias interventions.

There is preliminary evidence that children may especially value *wealth* status (Horwitz et al., 2014; Newheiser & Olson, 2012; Olson et al., 2012; Ramsey, 1991). In particular, children living in South Africa and Uganda show a robust preference for White individuals (i.e., the group with wealth but not political influence) over Black individuals (i.e., the group with political influence but not wealth; Marshall et al., 2022; Olson et al., 2012). The current research provides the first test as to whether children are aware of each status association and examines how children weigh these dimensions in their formation of group preferences.

Indonesia as a study context

Studying children's representations of different types of status is especially relevant in a country like Indonesia, which is the location of this research. Indonesia is a multiethnic country in Southeast Asia with a population of approximately 277 million people, the fourth largest population in the world (Central Intelligence Agency, 2022). The two prominent ethnic groups in Indonesia are *Native Indonesians*, who make up 98% of the Indonesian population, and *Chinese Indonesians*, who are the largest non-Native Indonesian population with Indonesian citizenship and make up 1% of the Indonesian population (Sensus Penduduk, 2010).

Importantly, these ethnic groups hold *distinct* forms of status in Indonesia, with Native Indonesians having greater political influence and Chinese Indonesians possessing greater economic power on average. Politically speaking, all seven Indonesian presidents have been Native Indonesian and there has been formal legislation for Chinese Indonesians to assimilate to Native Indonesian culture. During the New Order (1966–1998), there were laws that banned written Chinese language and religious practices from public places, and the government strongly encouraged Chinese Indonesians to change their names to sound more Native Indonesian (Winarta, 2007). Even after these policies were overturned in 1998, negative attitudes toward Chinese Indonesians having political power have persisted (Allard & Beo Da Costa, 2017). For instance, political opponents of the 2014 presidential candidate, Joko Widodo, accused him of being ethnic Chinese in order to reduce public support (Kapoor, 2014). Relatedly, the 2017 Indonesia National Survey Project found that 64% of surveyed Native Indonesians are "uncomfortable" with a Chinese Indonesian being in a position of political leadership (Setijadi, 2017).

With respect to wealth, however, the status hierarchy is *reversed*: Chinese Indonesians, despite being a numerical minority of the population, control large parts of the economy (Allard & Beo Da Costa, 2017; Tadjoeddin, 2019). For example, among the 10 wealthiest people in Indonesia (all of whom are men; Ho & Karmali, 2021), seven are Chinese Indonesian and only one is Native Indonesian. Chinese Indonesians' economic power has led to resentment among some Native Indonesians, most notably during the violent May 1998 riots in which military leaders blamed Chinese Indonesians for Indonesia's economic crisis and incited violence against them (Himawan et al., 2022; Purdey, 2006). Data from the 2017 national survey finds that Native Indonesians still perceive ethnic wealth disparities; 60% of respondents agreed that Chinese Indonesians are more likely to be wealthy than Native Indonesians (Setijadi, 2017).

Although we cannot do justice to the complex history between Native and Chinese Indonesians, we wish to provide some historical context as to how these status differences likely arose. Indonesia was colonized by the Netherlands in the 1600s (known then as the Dutch East India Company) and then occupied by Japan in 1942, until Indonesians fought for and gained independence in 1945. During Dutch colonization, the Dutch enacted a racial caste system, segregating the population into three categories: (i) Europeans in the highest position; (ii) "Foreign Easterners," such as ethnic Chinese, in the second position; and (iii) Native Indonesians at the bottom (Winarta, 2007). The Dutch treated Chinese Indonesians as business partners, helping to establish Chinese Indonesians' wealth status and resulting in the perception that Chinese Indonesians were accomplices to the Dutch and disloyal to Native Indonesians (Setijadi, 2017). As we have described, these social dynamics have persisted in contemporary Indonesian society, with Chinese Indonesians still having economic advantage and also being perceived by Native Indonesians as harboring loyalties to countries outside of Indonesia (Setijadi, 2017).

Gender status associations

While our primary focus is ethnicity, we also examined children's *gender* status associations, as well as the intersections *between* ethnicity and gender. Gender status differences in Indonesia mirror those found around the world, in which men possess greater wealth *and* political influence than women (Badan Pusat Statistik, 2021; Human Development Reports, 2020). Given these societal patterns, Indonesian children may associate men with *both* status dimensions. We can use the gender results to determine whether Indonesian children's tendency to associate ethnic groups with distinct forms of status is unique to ethnicity rather than all social groups. Indeed, an alternative account is that children are aware of one group's status (e.g., Chinese Indonesians have wealth) and pair the second group with the other form of status (e.g., Native Indonesians with political influence) only as a means to grant status equally.

Examining gender can also address open questions regarding children's awareness of gender-based status disparities, as prior findings have been mixed. On the one hand, there appears to be an early awareness of gender-based status inequalities. For example, 3- to 6-year-old U.S. children reason that boys will have more desirable objects (i.e., toys and new clothes) and decision-making power than girls (Mandalaywala et al., 2020). Another study found that 6- to 8-year-old U.S. children rated masculine jobs as more prestigious than feminine jobs, which included an estimate of how much money the job makes (Liben et al., 2001). Also by 5 years old, U.S. children are knowledgeable that all past presidents have been men (Bigler et al., 2008). Awareness of males' political influence has similarly been found in contexts outside of the

U.S.; when making predictions about who will be elected (classroom) president, children in India choose boys over girls by age 9 years old (Santhanagopalan et al., 2022). However, some studies find that children are *not* aware of gender-based status disparities. For example, despite making correct inferences about race-wealth associations, studies have found that U.S. and South African children do not associate boys and men with wealth more than girls and women (Mandalaywala et al., 2020; Olson et al., 2012).

Finally, we considered children's status representations at the intersection of gender and ethnicity. Given that people belong to multiple social groups (e.g., ethnic and gender), intersectional analyses offer nuanced insight into children's developing social cognition (Lei & Rhodes, 2021). In the Indonesian context where men hold greater status than women, children's ethnicity-status associations may be stronger for male targets compared to female targets. Specifically, children may strongly associate Native Indonesian males with political power and Chinese Indonesian males with wealth status, while representations of Native and Chinese Indonesian females may be less differentiated. In support of this possibility, recent developmental scholarship indicates that children hold specific group stereotypes at the intersection of race and gender (Jaxon et al., 2019; Lei et al., 2020; Leshin et al., 2022; Shu et al., 2022), and that children's ethnicity-status associations are amplified for male targets (e.g., when reasoning about political status in India; Santhanagopalan et al., 2022).

The present study

Indonesia's societal structure offers a unique opportunity to address fundamental questions about children's representations of complex status hierarchies and how they consider multiple status dimensions when determining who they want to affiliate with. To the best of our knowledge, there has only been one study investigating Indonesian children's social group cognition, which focused on Native Indonesian children's ethnic group attitudes (Brown et al., 2018). Brown et al. (2018) found that 4- to- 7-year-old Native Indonesian children ascribed positive traits (e.g., being friendly) equally to Native Indonesian and Chinese Indonesian children. Notably, Native Indonesian children did not extend this positivity to another minority Indonesian ethnic group that was included in the research (Papuan), suggesting that Native Indonesian children hold positive outgroup attitudes specifically toward Chinese Indonesians. This research provides initial insight into Indonesian children's social group cognition, yet there are still open questions regarding Indonesian children's understanding of their societal hierarchy.

This study was a systematic developmental investigation of ethnicity-status and gender-status associations, as well as ethnic group preferences in Indonesia. Our study included Native and Chinese Indonesian children 6–12 years of age, as well as Native and Chinese Indonesian adults. This diverse sample allowed for a thorough investigation of how these social-cognitive processes operate across different ages and ethnic groups within the status hierarchy.

Although this research was largely exploratory in nature due to the limited work in Indonesia, we had some preliminary predictions. We predicted that children would be able to associate ethnic groups with distinct forms of status—specifically, Native Indonesians with political influence and Chinese Indonesians with wealth. Given that U.S. children as young as 3—5 years of age associate White people with wealth and decision-making power (Dukler & Liberman, 2022; Marshall et al., 2022), we expected the youngest children in our sample (6 years of age) to associate ethnic groups with distinct forms of status. For gender, we expected that children would either associate males with *both* forms of status (Bigler et al., 2008; Liben et al., 2001) or simply show chance performance (Mandalaywala et al., 2020; Olson et al., 2012). We also examined children's status representations at the intersection of ethnicity and gender, in which we tested whether children's ethnicity-status associations are stronger for male compared to female targets. Finally, because wealth appears to be a salient and desirable form of status (Marshall et al., 2022; Olson et al., 2012), we predicted that children would have stronger preferences for Chinese Indonesians (i.e., the wealthier ethnic group) and that these preferences would be predicted by wealth judgments.

METHOD

Participants

The sample consisted of Indonesian children ($n = 236$; 6–12 years, $M = 9.56$ years, SD = 1.69; 56% female, 44% male) and adults ($n = 105$; 18–58 years, $M = 41.70$ years, SD = 12.23; 52% female, 20% male, 28% not reported). Children were recruited from two schools in the Jakarta metropolitan area. According to reports by school administrators, most families had at least one parent with a college degree. The child sample was ethnically diverse: 44% Native Indonesian, 18% Chinese Indonesian, and 38% other ethnicities (24% Korean, 10% mixed ethnicities, 2% White, 2% Filipino/a, <1% African, and <1% South Asian). Adult participants also primarily lived in the Jakarta metropolitan area (74%) and were ethnically diverse: 26% Native Indonesian, 66% Chinese Indonesian, 2% other ethnicities (<1% Korean, <1% Indian), and 7% not reported. The adult sample reported high levels of education (23% advanced degree, 50% college degree, 16% high school/technical degree, 2% less than high school, and 10% not reported). The study was conducted from December 2021 through March 2022.

Procedure

Child participants completed an online Qualtrics survey during school time as a whole-class activity. An experimenter read each survey question aloud to the entire class through a video conferencing platform (e.g., Zoom), and children responded to questions on individual computers. Each question appeared individually on its own page and was color-labeled so that the experimenter could easily refer to it (e.g., "You should be on the 'blue' question now"). The experimenter read each question and the answer choices twice. There were attention checks and small breaks (i.e., animated GIFs) throughout the study to ensure that children were engaged. The study took approximately 20 min. Following the schools' recommendations, all sessions were conducted in English. Adult participants completed the Qualtrics survey on their own time in their preferred language (either English or Bahasa Indonesia). The study was approved by the University of California, San Diego Institutional Review Board.

Measures

Study materials can be found in Supporting Information. To first orient child participants to using the Qualtrics survey, they practiced selecting a specific response in four multiple choice questions. Children needed to pass this section to be included in the final sample (an additional six children were excluded from the reported sample for failing this section). All participants completed the survey tasks in the following order: (1) social status judgments task; (2) social preferences task; (3) ethnicity matching task; and (4) self-categorization. There were also two attention check questions embedded in the survey that asked participants to choose a specific shape (an additional nine children were excluded from the reported sample for failing at least one of these checks).

Social status judgments task

For each social status judgment, participants were presented an array that had four images of people that varied in ethnicity and gender (2 ethnicity: Native or Chinese × 2 gender: female or male). There were four arrays: two child arrays (each with a unique set of four children) and two adult arrays (each with a unique set of four adults; child and adult stimuli have been used in prior research, e.g., Olson et al., 2012). The images were taken from a Google search and were pre-tested with six Indonesian adults. In a pre-test we conducted, adults were asked to match typical Native Indonesian and Chinese Indonesian male and female names to the images. For example, adults were given the names, *Dimas* (typical Native Indonesian male name), *Michelle* (typical Chinese Indonesian female name), *Dewi* (typical Native Indonesian female name), and *Kevin* (typical Chinese Indonesian male name) and matched each name with one of the four images in the array. Pre-test participants paired the names with the intended images for 96% of the matches, and thus we used those images for the study task.

In the task, we did not provide any ethnic group labels or names for the images, as prior research suggests that labeling can encourage children to pay attention to distinctions they would not otherwise privilege (see Shutts et al., 2016). For each array of four images, there were three questions: a *political influence* item (all pertaining to political power within Indonesia; e.g., "Which child will grow up to have a very important position and work with the Indonesian president?"), a *wealth* item (all asked about possessing high-value items; e.g., "Which child will grow up to have a very large nice car?"), and a *control* item that should not be associated with either ethnic group (e.g., "Which child sleeps on their right side instead of their left side?"); item order varied across image arrays. We included the control items to assess participants' *general* tendency to choose a certain ethnic group, which allowed us to test whether any biases were specific to the status questions. There were 12 items in total (4 arrays × 3 items). We coded for participants' tendency to choose a Chinese Indonesian individual (vs. Native Indonesian) as well as participants' tendency to choose a male individual (vs. female).

Social preferences task

Given that our primary focus was on children's developing social preferences, the social preferences task used the two *child* arrays. There were four items in total (2 child arrays × 2 items). For each array, children were asked about *others*' preferences (i.e., "Which child has the most friends at school?") and their *self*-reported preferences (i.e., "Which child would you want to be friends with the most?"). We wanted to match adults' survey to children's and thus we also presented adults with the child arrays. The question about *others*' preferences was identical (i.e., "Which child has the most friends at school?"). However, when adults were asked their own preference question, they were asked: "When you were younger, which child would you want to be friends with the most?" We coded for participants' tendency to choose a Chinese Indonesian individual (vs. Native Indonesian).

Ethnicity matching task

As a validation of our stimuli and to assess the salience of ethnicity in this cultural context, participants completed an ambiguous matching task. We presented a target image (e.g., a Native Indonesian girl) and then

presented two same-gender images with *differing* ethnicities (e.g., another Native Indonesian girl and a Chinese Indonesian girl). Specifically, participants were told, "Look at this child! Which of one of these children is in the same group as the [target] child on top?" We were ambiguous about which group should be used to assess whether participants would spontaneously use ethnicity to categorize others. Participants completed four child and four adult trials, resulting in eight total matches.

Self-categorization task

For further validation of our stimuli, we had participants categorize themselves in relation to the arrays, which we could then compare to the demographic data. Participants were presented with the two child photo arrays and asked for each array, "Which child looks the most like you?" Adults were asked, "Which child looked the most like you when you were young?" There were two items in total.

RESULTS

We first report results from the two validation tasks: (a) the self-categorization task, and (b) the ethnicity matching task. With respect to *self-categorization*, there was robust correspondence between children's self-identification and the school demographic data. Boy participants, as classified by the school, chose the boy images more than girl participants did, $t(230) = 41.60$, $p < .001$; $M_{boys} = 95\%$, $M_{girls} = 3\%$. Moreover, Chinese Indonesian children, as classified by the school, selected the Chinese images more than the Native Indonesian children did, $t(141) = 2.64$, $p < .01$; although *both* ethnic groups showed a tendency to select the Chinese images, $M_{Chinese} = 82\%$, $M_{Native} = 63\%$ (children's self-identification as lighter skinned, even when it does not match their actual skin tone, has been found in prior developmental research; Sacco et al., 2019). Adults' self-reported gender and ethnicity also corresponded with their image selections: Men chose the boy images more than women did, $t(74) = 18.03$, $p < .001$; $M_{men} = 95\%$, $M_{women} = 5\%$, and Chinese Indonesian adults selected the Chinese images more than the Native Indonesian adults did, $t(94) = 4.55$, $p < .001$; $M_{Chinese} = 88\%$, $M_{Native} = 54\%$.

Results from the *ethnicity matching* task indicated that participants robustly attended to ethnicity when categorizing other individuals. Both children and adults chose the same-ethnicity match significantly above chance (50%) across the eight trials, $M_{children} = 80\%$, $t(234) = 17.01$, $p < .001$; $M_{adults} = 81\%$, $t(104) = 10.81$, $p < .001$. Taken together, these tasks confirmed that participants clearly differentiated the images by the intended gender and ethnicity.

Social status judgments

Ethnicity

Figure 1a shows children's and adults' mean ethnicity status judgments (political, wealth, control items; four items per dimension). The figure reports proportion scores, such that 0 = chose all Native Indonesians and 1 = chose all Chinese Indonesians.

We ran mixed-effects logistic regression models that predicted the tendency to choose a Chinese versus Native individual (1 = Chinese, 0 = Native), with fixed effects of status dimension (*political influence*, *wealth*, with *control items* as the reference category) and a random intercept for participant. Compared to the control items, children and adults were significantly *less* likely to choose Chinese (vs. Native) individuals for the political influence items, children: $B = -0.90$, $p < .001$, 95% CI [−1.09, −0.71], OR = 0.41; adults: $B = -1.39$, $p < .001$, 95% CI [−1.69, −1.10], OR = 0.25, but significantly *more* likely to choose Chinese (vs. Native) individuals for the wealth items, children: $B = 0.85$, $p < .001$, 95% CI [0.66, 1.04], OR = 2.33; adults: $B = 1.01$, $p < .001$, 95% CI [0.71, 1.31], OR = 2.75. Moreover, all status judgment scores were significantly different from chance (0.50), ps < .001, together suggesting that children and adults reliably associated Native Indonesians with political influence and Chinese Indonesians with wealth.

Figure 1b shows children's ethnicity status judgments by age. Children associated Native Indonesians with political influence different from chance (0.50) by 6.5 years old ($M = 0.41$, 95% CI [0.33, 0.49]), and the youngest children in the study (6.2 years old) associated Chinese Indonesians with wealth different from chance ($M = 0.70$, 95% CI [0.69, 0.70]). There was an effect of age on political judgments, such that older children more strongly associated Native Indonesians with political influence, $B = -0.16$, $p < .01$, 95% CI [−0.25, −0.06], OR = 0.86. There was also a positive correlation between age and the tendency to associate Chinese Indonesians with wealth, although this association was weaker, $B = 0.08$, $p < .001$, 95% CI [0.08, 0.08], OR = 1.08.

With respect to participants' *own* ethnicity (Native, Chinese, or "other" ethnicity) influencing status judgments, there were no ethnic differences in associating Native Indonesians with political influence, $F(2) = 0.32$, $p = .73$. We found ethnic differences in associating Chinese Indonesians with wealth, $F(2) = 3.57$, $p < .05$: Chinese Indonesian children were more likely to associate Chinese Indonesians with wealth ($M = 0.80$) than children of "other" ethnicities did ($M = 0.68$), $p < .05$, but Native Indonesian children were not different from either ethnicity ($M = 0.74$). Although there were ethnic differences in the strength of the Chinese-wealth association, children of *all* ethnicities associated Chinese Indonesians with wealth above chance, ps < .001. There were no ethnic differences between Native and Chinese
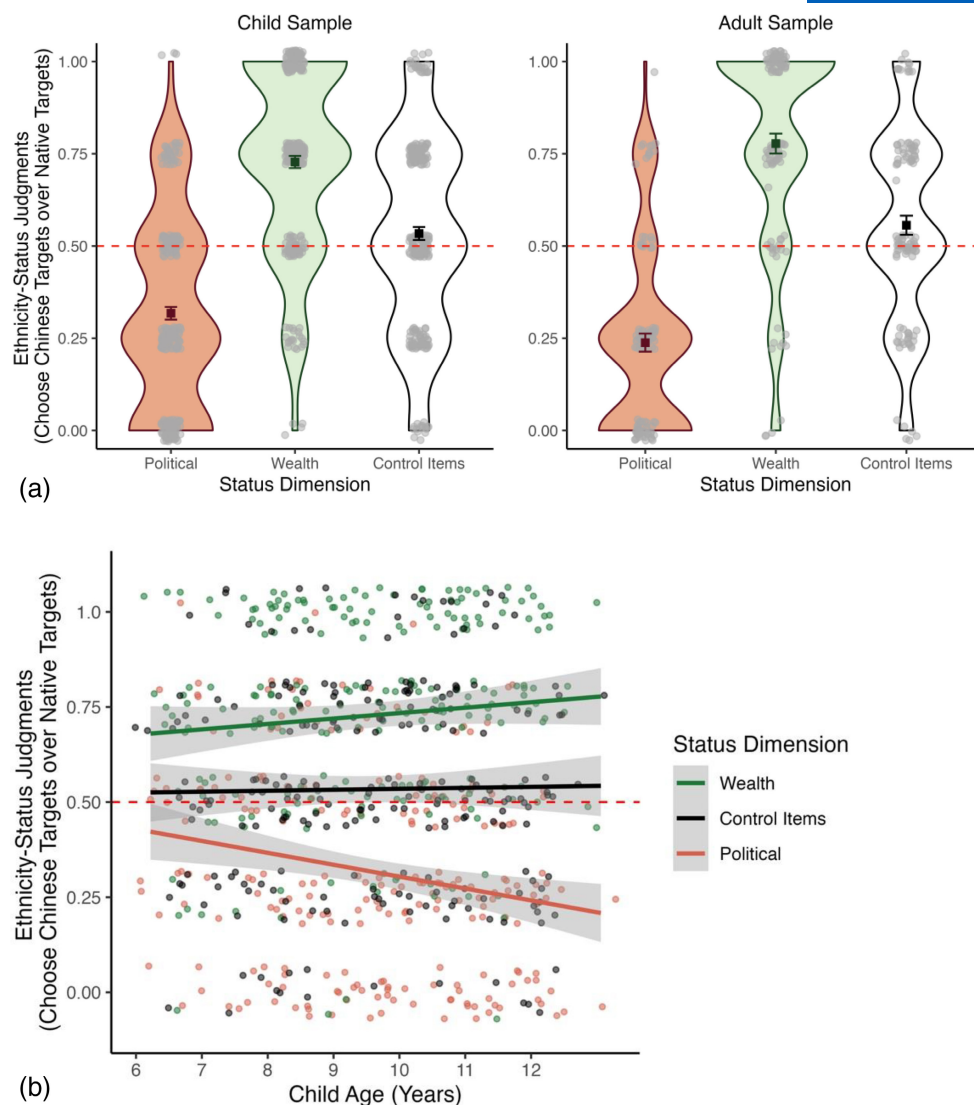
FIGURE 1 (a) Children's and adults' ethnicity-status judgments (means and 95% CIs are graphed); (b) age-related differences in children's ethnicity-status judgments.

Indonesian adults in associating Native Indonesians with political influence, $t(94)=0.64$, $p=0.53$, $M_{\text{Native}}=0.23$, and $M_{\text{Chinese}}=0.20$, nor in associating Chinese Indonesians with wealth, $t(94)=0.13$, $p=0.90$, $M_{\text{Native}}=0.80$, and $M_{\text{Chinese}}=0.79$. Taken together, children's representations of complex status hierarchies are early emerging (around 6.5 years of age) and are robust across ethnic backgrounds.

Gender

Figure 2a shows children's and adults' mean gender status judgments (political, wealth, control items; four items per dimension). The figure reports proportion scores, such that 0=chose all females and 1=chose all males.

We ran mixed-effects logistic regression models that predicted the tendency to choose a male versus female (1=male, 0=female), with fixed effects of status

dimension (*political influence*, *wealth*, with *control items* as the reference category) and random intercept for participant. Compared to the control items, participants were significantly more likely to choose males for the political influence items, children: $B=0.79$, $p<.001$, 95% CI [0.60, 0.97], OR=2.20; adults: $B=1.71$, $p<.001$, 95% CI [1.41, 2.01], OR=5.51, and significantly more likely to choose males for the wealth items, children: $B=0.64$, $p<.001$, 95% CI [0.46, 0.83], OR=1.90, adults: $B=1.12$, $p<.001$, 95% CI [0.84, 1.40], OR=3.06. All proportion scores were significantly different from chance (0.50), suggesting that children and adults reliably associated males with *both* political influence and wealth.

Figure 2b shows children's gender status judgments by age. Children associated males with political influence different from chance by 6.9 years old ($M=0.59$, 95% CI [0.51, 0.66]), and males with wealth different from chance by 6.8 years old ($M=0.59$, 95% CI [0.51, 0.67]). There was an effect of age on political judgments, such that older
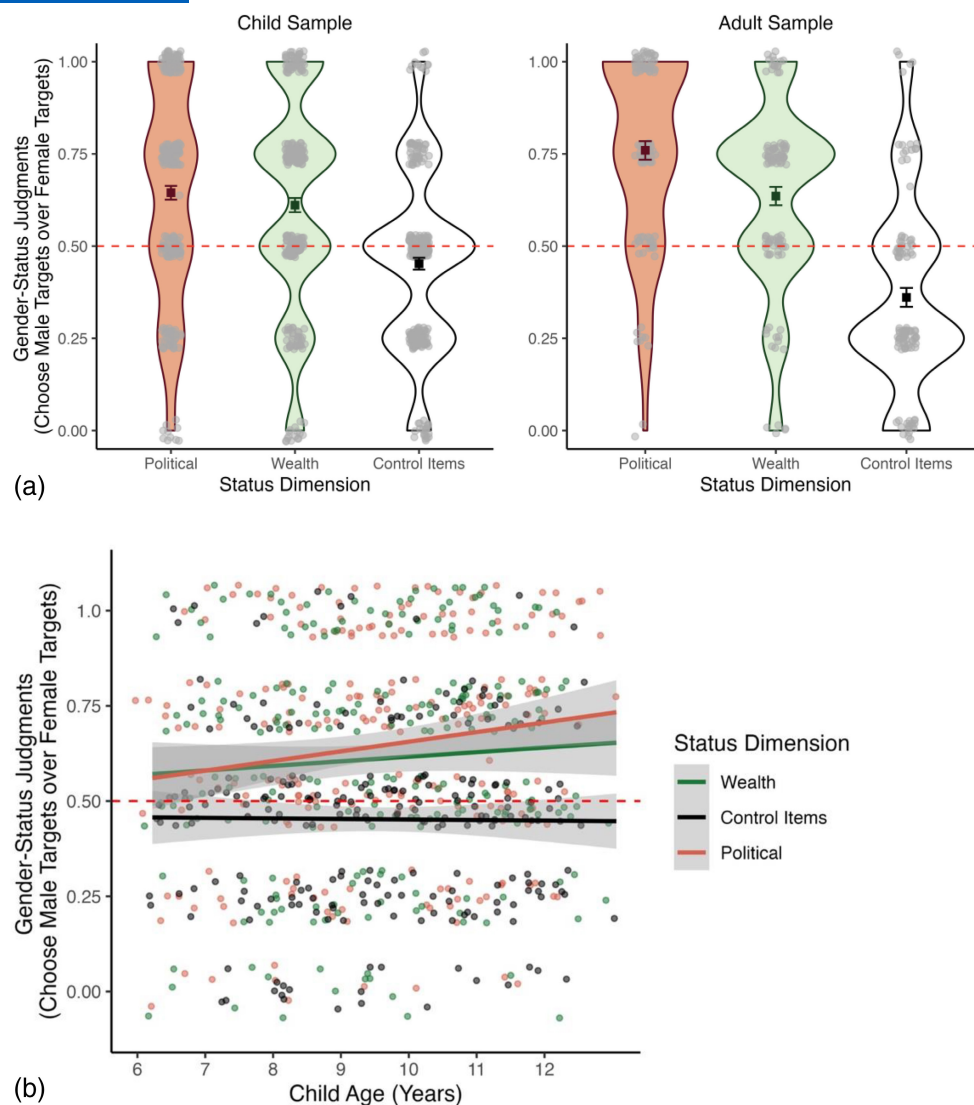
FIGURE 2 (a) Children's and adults' gender-status judgments (means and 95% CIs are graphed); (b) age-related differences in children's gender-status judgments.

children more strongly associated males with political influence, $B=0.13$, $p<.05$, 95% CI [0.02, 0.23], OR $=1.14$. Notably, there were no age differences in children's tendency to associate males with wealth, $B=0.06$, $p=.28$, 95% CI [−0.05, 0.16], OR $=1.06$. This pattern aligned with the age-related patterns found for ethnicity status associations, in which age appears to be a stronger predictor of political status perceptions but a weaker predictor of wealth status in which younger children already show similar awareness as older children.

With respect to children's *own* gender influencing status judgments, boys were more likely than girls to associate males with political influence, $t(234)=5.30$, $p<.001$, $M_{boys}=0.75$, $M_{girls}=0.56$, as well as to associate males with wealth, $t(234)=3.69$, $p<.001$, $M_{boys}=0.69$, and $M_{girls}=0.55$. Children of *both* genders associated males with political influence above chance, $p<.05$, but only boys were above chance for the male-wealth association. Among adult participants, both men and women

associated males with political influence, $t(74)=-0.75$, $p=.45$, $M_{men}=0.74$, $M_{women}=0.79$, and with wealth, $t(74)=-0.01$, $p=0.99$, $M_{men}=0.63$, and $M_{women}=0.63$. Taken together, gender hierarchy representations are early emerging (around 6.9 years of age), in which children, like adults, associate males with both political influence and wealth.

Intersectional analyses

Finally, we examined status representations at the intersection of ethnicity and gender. As shown in Figure 3, ethnicity-status differences are more striking for *male* targets than for female targets. For the political status items, children chose Native Indonesian males 49% of the time while they chose Chinese Indonesian males 16% of the time, resulting in a 33% difference. This ethnic difference in political status was much smaller for female
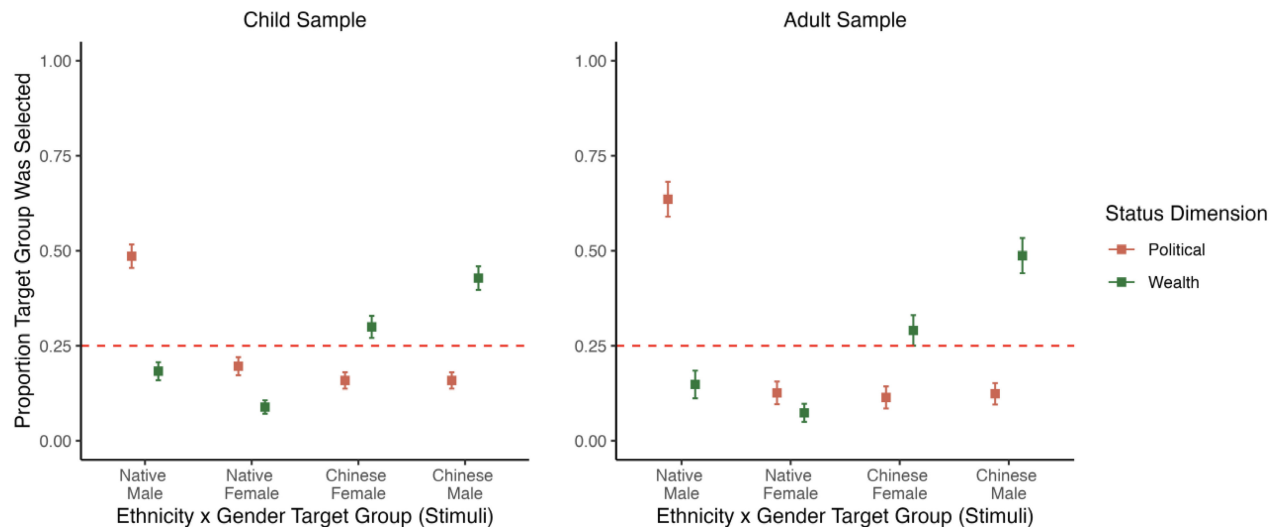
FIGURE 3 Children's and adults' intersectional ethnicity × gender status judgments (means and 95% CIs are graphed).

targets: Children chose Native Indonesian females 20% of the time and Chinese Indonesian females 16% of the time, resulting in only a 4% difference. We conducted a one-sample *t*-test that examined whether the ethnicity-status difference varied significantly across target gender (33% for male targets vs. 4% female targets), and indeed found the difference was significantly greater for male than female targets, $t(235) = 11.05$, $p < .001$.

For the wealth status items, children chose Chinese Indonesian males 43% of the time while they chose Native Indonesian males 18% of the time, making for a 24% difference (estimates have been rounded). Numerically speaking, the ethnic-wealth status difference was smaller for female targets: Children chose Chinese females 30% of the time and Native females 9% of the time, resulting in a 21% difference. Here, we did not find that these differences (24% for male targets vs. 21% for female targets) varied significantly across target gender, $t(235) = 1.24$, $p = .22$, which suggests that ethnicity and gender have independent main effects on perceived wealth status. Nonetheless, when considering both status dimensions together, children represent Native and Chinese Indonesian males' status more distinctly compared to Native and Chinese Indonesian females.

With respect to adult participants, we find even stronger evidence for intersectional status representations. For the political status items, adults chose Native Indonesian males 63% of the time while they chose Chinese Indonesian males 12% of the time, making for a 51% difference. Adults chose Native Indonesian females 13% of the time and Chinese Indonesian females 11% of the time, resulting in just a 1% difference (estimates have been rounded). A one-sample *t*-test found that the ethnic-political status difference was significantly greater for male than female targets, $t(104) = 12.99$, $p < .001$. We found a similar pattern for wealth: adults chose Chinese Indonesian males 49% of the time while they chose Native Indonesian males 15% of the time, making a 34%

difference. Adults chose Chinese Indonesian females 29% of the time and Native Indonesian females 7% of the time, resulting in a 22% difference. A one-sample *t*-test indicated that the ethnic-wealth status difference was significantly greater for male than female targets, $t(104) = 2.80$, $p < .01$.

Ethnic group preferences

Preliminary analyses indicated that children's ethnicity (Chinese vs. Not) interacted with the perspective of the preference judgment (self vs. others' predicted preferences), $B = -1.24$, $p = .002$, 95% CI [−2.03, −0.46], OR = 0.29. As such, Figure 4 separates preference results by participants' own ethnicity (Native, Chinese, and for children, "other" ethnicity), as well as perspective (self vs. other). The figure reports proportion scores, such that 0 = chose all Native Indonesians and 1 = chose all Chinese Indonesians.

With respect to children's *self*-reported preferences, children of all ethnicities preferred Chinese Indonesians; all scores were above chance (0.50), ps < .001. There were ethnic group differences but only in children's perceptions of *others*' preferences, $F(2) = 4.05$, $p = .02$. While Native Indonesian, $M = 0.75$, $t(102) = 7.85$, $p < .001$, and children of "other" ethnicities, $M = 0.65$, $t(90) = 3.96$, $p < .001$, were still above chance in inferring that *other* people preferred Chinese Indonesians, Chinese Indonesian children were no different from chance, $M = 0.57$, $t(41) = 1.14$, $p = .26$. Interestingly, Chinese Indonesian adults showed the same pattern as Chinese Indonesian children. While they were above chance in their *own* preferences for Chinese Indonesians, $M = 0.75$, $t(68) = 6.22$, $p < .001$, they were also no different from chance in their perceptions of *others*' preferences, $M = 0.54$, $t(67) = 4.12$, $p = .37$. Native Indonesian adults showed no bias in their own
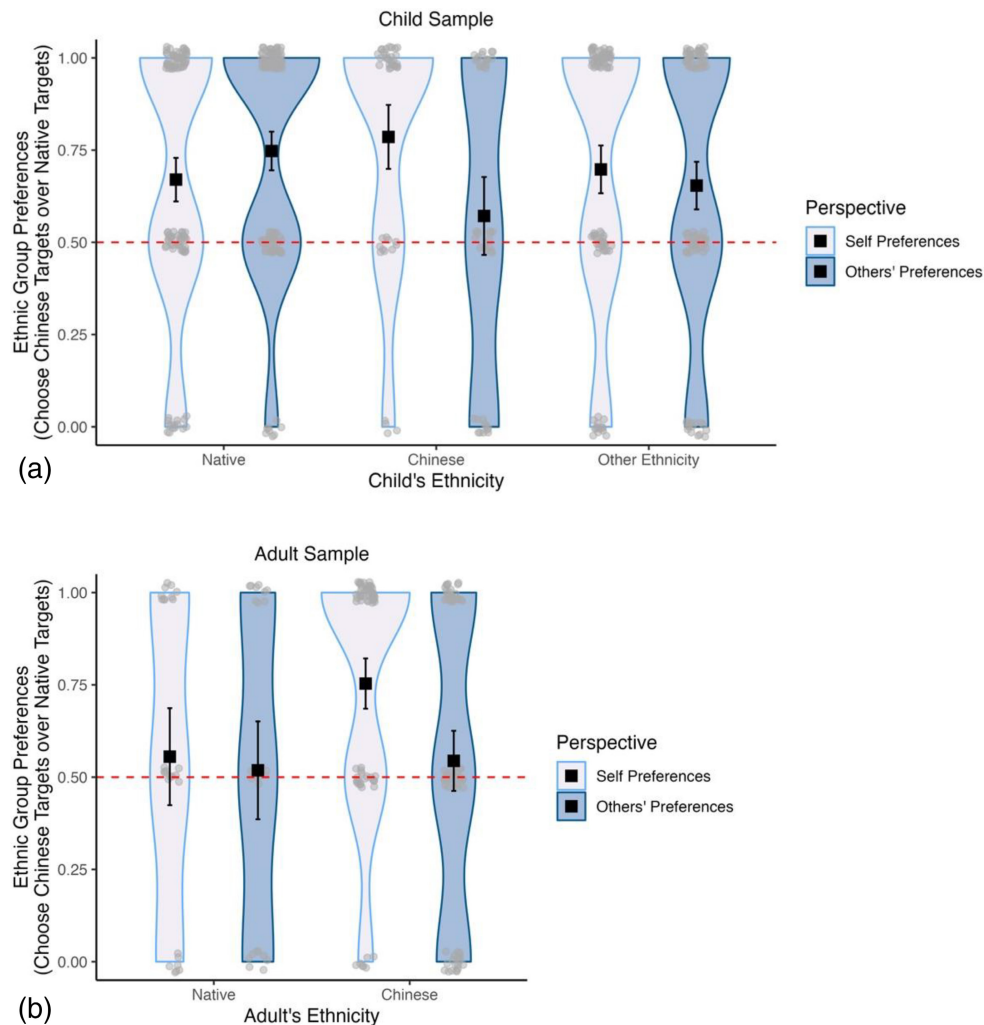
FIGURE 4 (a) Children's and (b) adults' mean ethnic group preferences (self and other) by participants' own ethnicity (means and 95% CIs are graphed).

ratings, $M = 0.56$, $t(26) = 0.72$, $p = .48$, nor in their ratings for others' preferences, $M = 0.52$, $t(26) = 0.24$, $p = .81$.

Taken together, there was a modal tendency to prefer Chinese Indonesians over Native Indonesians: Children of all ethnicities, and Chinese Indonesian adults, reported this preference. Native Indonesian adults were the exception, such that they reported *no* preference for either ethnic group in their self *or* other ratings. Interestingly, Chinese Indonesian children and adults reasoned that *others*' do not share their preference for Chinese Indonesians, instead reporting that others had no preference for either ethnic group.

Relation between children's status judgments and preferences

The final analysis examined whether status judgments (political, wealth, and control items) predicted social preferences. Although we found that participants associated Chinese Indonesians with wealth and most

participants also preferred Chinese Indonesians, this does not necessarily mean that perceptions of wealth and social preferences are *linked*. To test whether perceptions of wealth may *underscore* the development of social biases, we tested if there was an association between the constructs. That is, do participants with *stronger* Chinese-wealth associations show *stronger* preferences for Chinese Indonesians? In all analyses that we report, we coded status judgments and social preferences such that higher scores indicated choosing a Chinese (vs. Native) individual.

Bivariate correlations between status judgments and social preferences

We first report bivariate correlations between status judgments and overall social preferences (i.e., all social preference items averaged together). We found that stronger Chinese-wealth status associations were *positively* related to social preferences for Chinese

individuals for both children, $r=.30$, $p<.001$, and adults, $r=.37$, $p<.001$. We found that stronger Chinese-political status associations were *not* related to social preferences for Chinese individuals among children, $r=.10$, $p=.11$, and were *negatively* correlated with social preferences for Chinese individuals among adults, $r=-.26$, $p=.007$. Finally, choosing Chinese individuals for the control items was not associated with social preferences among children, $r=-.01$, $p=.94$, or adults, $r=.03$, $p=.73$. Taken together, only *wealth* status judgments positively correlated with social preferences.

Mixed-effect logistic regression models

Next, we ran mixed-effects logistic regression models including *all* status judgments in the model (all mean-centered) and controlling for participant ethnicity (Chinese=1 vs. Not=−1). We also split the analyses by *perspective* (i.e., self vs. other preference). Tables 1 and 2 present these results (*self* in Table 1 and *other* in Table 2).

We find evidence that, even when controlling for other status judgments and participants' own ethnicity, perceptions of *wealth* uniquely predicted social preferences for children and adults (see Table 1). Perceptions of wealth also predicted children's and adults' judgments of *others*' preferences (see Table 2). However, there was one notable additional finding: Children's perceptions of political influence also positively predicted their judgments that *others* would prefer that group.

DISCUSSION

Our findings shed new light on children's ability to represent complex social status hierarchies. We find that by 6.5 years of age, children can represent distinct ethnicity-status associations in Indonesia, such that they reliably associate Native Indonesians with political influence but Chinese Indonesians with wealth. For gender on the other hand, children associated males with *both* wealth

and political influence by age 6.9 years old. When considering these status representations at their intersection, we found that ethnicity-status associations were stronger for male compared to female targets. Our findings also inform the mechanisms underlying the development of biased social preferences, specifically, how children weigh multiple dimensions of social status. We find that children of all ethnicities prefer Chinese Indonesians (i.e., the wealthier group), and that children's preferences are predicted by their wealth judgments not political judgments. These results suggest that wealth may be a particularly desirable form of status that could lead to the development of social group biases.

While prior work has established that children associate ethnic groups with status more generally (Mandalaywala et al., 2020; Marshall et al., 2022; Olson et al., 2012), these studies could not speak to how differentiated these associations are with respect to the status dimension. Our study was unique in its ability to assess more fine-grained representations of status. First, we assessed both wealth and political judgments in a societal context in which these status dimensions come apart, and we find clear evidence that children associate ethnic groups with distinct forms of status. Second, we found these status judgments differed from neutral control items, which ruled out an account that children's status judgments may only reflect a general tendency to select one group. Third, we examined children's gender status associations to confirm that Indonesian children would also associate one group with multiple forms of status when appropriate. For gender, we find that children accurately associate males with both wealth and political status. Finally, our intersectional approach revealed nuances in children's status representations, such that ethnicity-status associations were amplified for male targets. This pattern highlights children's sophisticated ability to represent complex hierarchies and aligns with prior findings that children consider multiple identities in their social concepts (Leshin et al., 2022; Santhanagopalan et al., 2022; Shu et al., 2022). In addition to reflecting the statistical realities of their environment,

TABLE 1 Models predicting children's and adults' self-reported preferences (pro-Chinese).

	Child sample			Adult sample		
	B	95% CI	OR	*B*	95% CI	OR
Intercept	1.24***	[0.83, 1.65]	3.45	0.92***	[0.45, 1.38]	2.51
Participant ethnicity						
Chinese (vs. Not)	0.23	[−0.13, 0.59]	1.26	0.44*	[0.02, 0.86]	1.55
Status judgments						
Political (Chinese)	0.72	[−0.32, 1.76]	2.06	−0.79	[−2.48, 0.90]	0.45
Wealth (Chinese)	2.14***	[1.02, 3.25]	8.48	1.88*	[0.31, 3.46]	6.59
Control items (Chinese)	0.44	[−0.57, 1.45]	1.55	−0.26	[−1.76, 1.25]	0.77

Note: The table reports unstandardized regression coefficients on a logit scale.
*$p<.05$; ***$p<.001$.

TABLE 2 Models predicting children's and adults' judgments of others' preferences (pro-Chinese).

	Child sample			Adult sample		
	B	**95% CI**	**OR**	**B**	**95% CI**	**OR**
Intercept	0.62***	[0.31, 0.92]	1.85	0.24	[−0.14, 0.61]	1.27
Participant ethnicity						
Chinese (vs. Not)	−0.43**	[−0.73, −0.13]	0.65	−0.08	[−0.46, 0.31]	0.92
Status judgments						
Political (Chinese)	1.39**	[0.43, 2.35]	4.00	−0.59	[−2.20, 1.02]	0.56
Wealth (Chinese)	1.95***	[0.96, 2.94]	7.03	1.90*	[0.40, 3.40]	6.66
Control items (Chinese)	0.55	[−0.35, 1.46]	1.74	0.46	[−0.92, 1.85]	1.59

Note: The table reports unstandardized regression coefficients on a logit scale.
*$p<.05$; **$p<.01$; ***$p<.001$.

it is also possible that ethnicity-status associations were amplified for male targets because children (and adults) often view males as prototypical of social categories (Bailey, 2022). Taken together, we find compelling evidence that children can represent complex status hierarchies as young as age 6.5 years old.

We also document robust evidence that children find wealth more desirable than political influence: Children of all ethnicities preferred Chinese Indonesians, and these preferences, as well as judgments about other people's preferences, were predicted by wealth judgments. Moreover, we find that children *are* aware that Native Indonesians have greater political influence, yet still prefer Chinese Indonesians. Taken together, these findings raise questions about why children find wealth status to be especially desirable. One possibility is that children believe that they stand to benefit more immediately by affiliating with people who are wealthy than those who are part of a politically influential group. Indeed, prior work finds that children expect wealthy people to share their possessions (e.g., toys) with others (Ahl et al., 2019; Ahl & Dunham, 2019); it may be harder for children to see how they stand to benefit from affiliating with political influential individuals. Interestingly, while children's perceptions of political influence were not related to their own preferences, they were positively related to judgments of *others'* preferences. This could indicate that children infer that people who are chosen to be in positions of political power must be liked by others in society.

There were two exceptions to the pattern of Chinese Indonesians being preferred. First, although Chinese Indonesian children and adults showed this pattern for their *own* preferences, they expected *others* to have no preference for either ethnic group. To the extent they are assuming that "others" are Native Indonesians (as they are 98% of the population); this result may reflect an assumption that Native Indonesians want to affiliate with Chinese Indonesians but also with their own ingroup (see Yan, 2017 for the importance of tight social relationships in Chinese culture). In addition, these judgments may be affected by an awareness of interethnic tensions, particularly regarding Chinese Indonesians' wealth status (Setijadi, 2017).

The second exception to the pro-Chinese bias was Native Indonesian *adults'* preferences, who showed no preference for either group. Although these preferences were retrospective, this finding was a notable deviation from Native Indonesian *children* who strongly preferred Chinese Indonesians, and it raises questions as to why preferences may be different among children and adults. While some theories suggest that ingroup preferences decline in favor of a higher status group over childhood (Shutts, 2015), our results indicate that ingroup preferences may increase again when examining the trajectory into adulthood. One explanation is that once children enter adolescence and young adulthood, they may engage in greater ethnic identity exploration that results in a greater appreciation for their own ethnic group (Umaña-Taylor et al., 2014). Another possibility is that Native Indonesian adults weigh political influence more strongly than children, and their positivity toward their group having political influence may cancel out a pro-wealth bias.

We note two developmental findings: First, there were age-related increases in political status associations but not always wealth status associations, suggesting that awareness of wealth differences emerges earlier in development (Olson et al., 2012). Second, wealth judgments were strongly predictive of Indonesian children's preferences, which is not always found in prior developmental work (see Dunham et al., 2014; Mandalaywala et al., 2020; Qian et al., 2021, e.g., in which correlations are not significant). These findings may be explained to some extent by methodological factors (see Mandalaywala et al., 2020); however, they also may reflect the influence of the Indonesian social and cultural context.

Two authors of this article, who both grew up in Indonesia, talked with eight Indonesian adults for greater insight into the country's intergroup dynamics. We also consulted with Indonesia scholars. These discussions indicated that there are strong cues to ethnic differences in wealth status, especially in urban areas like Jakarta where the research was conducted, which could explain children's early awareness. One topic that came up several

times was that Chinese and Native Indonesian children are often segregated, such that Chinese Indonesian children tend to attend wealthier, international schools while Native Indonesian children tend to attend public schools. Moreover, Chinese Indonesian families tend to own businesses and have more expensive possessions (e.g., large cars vs. mopeds), while Native Indonesian people often serve as maids, drivers, and nannies. These discussions also identified ways that children may pick up on Native Indonesians' political influence, including Native Indonesians' representation in movies and television shows as political leaders, posters of Native Indonesian politicians on the road, and images of the president in classrooms. Although cues to political influence are present in everyday life, it is possible that children may not understand the kinds of power these positions grant (e.g., to make rules for the country), but children more readily grasp the power of wealth (e.g., attending nicer schools and driving nicer cars). Furthermore, scholars noted that Native Indonesians tend to explain Chinese Indonesians' wealth in terms of their hard work (Setijadi, 2017) and that Chinese Indonesians are perceived as highly exclusive (Kuntjara, 2020), both of which could contribute to children's desire to affiliate with this group.

While the current work explored group status associations and preferences, further study in Indonesia can address other central questions related to social-cognitive development. For example, assessing Indonesian children's *essentialist* beliefs about ethnicity can build upon the growing literature on how societal contexts shape ethnic and racial essentialism (Diesendruck et al., 2013; Pauker et al., 2016; Rhodes & Mandalaywala, 2017). We posit two possibilities for how ethnic essentialism may develop in Indonesia. On the one hand, because Native and Chinese Indonesians hold unique forms of status and thus have distinct societal roles, children may strongly essentialize the groups much like they do gender. On the other hand, if children recognize that status is a flexible concept that neither ethnic group possesses fully, they may be *less* essentialist compared to children growing up in societies where one ethnic group is dominant across status dimensions.

Relatedly, examining children's *explanations* for ethnic status differences, namely whether these differences are explained by intrinsic versus structural factors, could offer novel theoretical insights into how societal structures shape causal reasoning (Amemiya et al., 2022). While children may accept structural explanations for ethnic inequalities when structures benefit one ethnic group (e.g., social policies in the United States favoring White Americans), it may be more challenging for them to appreciate structural causes in contexts such as Indonesia where ethnic groups possess both societal advantages and disadvantages. It is possible that teaching children about each group's unique societal disadvantages could help to reduce any negative biases toward each group (Rizzo et al., 2021).

Limitations

One limitation of the current research is that some items were not completely parallel. Specifically, for one of the child arrays, the wealth item asked about *current* wealth ("Which child has lots of new and fancy toys?") while the political item asked about *future* political influence ("Which child will grow up to have a very important position and work with the Indonesian president?"). One possibility is that this difference explains why wealth was a stronger predictor of children's current preferences. However, when we removed this array from the analyses and included the remaining arrays that were perfectly matched, we replicated the result that wealth but not political status judgments predicted children's preferences.

In a related vein, while we matched child and adult participants on *which* targets were evaluated for the social preference task (i.e., all child arrays), we needed to adjust the wording of the *own* preferences question to make sense for adults (i.e., "When you were younger, which child would you want to be friends with the most?"). Thus, while children were reporting their current preferences, adults were reporting retrospective preferences. We note that this mismatch was not an issue for judgments about *others*' preferences, in which we used the same exact item for children and adults ("Which child has the most friends at school?"). Despite the difference on the own preference question, we still found the same pattern of results that wealth but not political influence predicted children's and adults' social preferences. However, future research could examine adults' current social preferences to gain further insight into the interethnic attitudes within adult Indonesian society.

CONCLUSION

This research broadens our understanding of children's representations of societal status hierarchies in an understudied cultural context, Indonesia. Our research adds to the growing literature indicating that children associate groups with societal status from early in development. Here, we find that children can represent *distinct* ethnicity-status associations by 6.5 years old and that these ethnicity-status associations are amplified for male targets compared to female targets. Moreover, we find evidence that children's awareness of *wealth* status matters more than political status for the development of social biases. Taken together, examining understudied cultural contexts can strengthen our theoretical knowledge and help to identify targets for intervention, such as perceptions of and stereotypes about wealth status, that may more effectively reduce the development of social group biases.

DATA AVAILABILITY STATEMENT

The materials, data, and analytic code necessary to reproduce the analyses presented here are publicly accessible at: https://osf.io/eyznh/. The analyses presented here were not preregistered.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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