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**Changes in
subjective
wellbeing,
affluence and trust
in the police in
India**

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Abstract

This paper examines whether trust in the police is associated with perceived changes in the subjective wellbeing of household heads between 2005 and 2012. It draws upon data from India's unique household panel dataset covering the entire nation, the India Human Development Survey. The study confirms that trust in the police positively affects the change in subjective wellbeing, using 2SLS and Lewbel IV models to partially address the endogeneity of trust in the police with an external instrument, the number of occasions of police opening fire on civilians, as well as internally generated instruments. We discuss our key econometric findings in the context of the present political regime, the National Democratic Alliance, and argue that there has been a strengthening of an unholy nexus between the police and corrupt politicians as well as the judiciary. This has led to extreme brutality and extrajudicial killings in pursuit of *Hindutva*, making Muslims and lower caste Hindus the worst victims. This nexus makes police reforms daunting.

Keywords

Subjective wellbeing, trust, police, incompetence, corruption, reforms, India

JEL Codes

D02, D63, D73, C36

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1. Introduction

Subjective wellbeing (SWB) or life evaluation refers to the quality or 'goodness' of life, overall life satisfaction, or sometimes happiness. Measurement is usually based on the Cantril ladder (1965), wherein individuals are asked to place themselves on an 11-step ladder with the worst possible life representing the lowest rung and the best possible life representing the top rung. Among those who have given strong conceptual and empirical support, some prominent contributions include Clark (2003), Blanchflower and Oswald (2004, 2007), Easterlin (1973, 2006), Kahneman and Krueger (2006), Kahneman and Deaton (2010), Diener and Inglehart (2013), Akay et al (2017) and Deaton (2011, 2018).

The measurement of SWB has been controversial, however. Ravallion et al (2016), for example, are sceptical but not dismissive of such measures. Their scepticism rests on scale heterogeneity – the standard deviation of utility over different choice situations. Yet subjective measures of poverty are not just similar to those obtained from income/expenditure thresholds but sometimes unavoidable.¹ Deaton (2018) offers robust support for self-reported measures of wellbeing, as such measures capture aspects of welfare beyond real income, which is what economists typically use to proxy utility. He used cross-country and country-specific comparisons to validate measures of SWB and draw out their policy significance.

The connection between SWB and the police is deep-rooted. The public view the job of the police as not just dealing with crime, but as rooted also in the defence of civility and community, in treating people fairly and with dignity, and in being aligned with and responsive to local needs and issues. Specifically, the effectiveness of the police is revealed not only in the way they deal with crime, but also by officers being there for victims, treating people fairly and providing a visible and accessible source of moral authority. Thus economic and physical security – and preservation of the dignity of the individual – both essential ingredients of SWB – are safeguarded by effective and fair law enforcement by the police (Jackson & Bradford, 2010)

Here we aim to build on our recent companion study (Kulkarni et al, 2022), which analysed the relationship between the change in SWB (or Δ SWB) – confined to economic wellbeing – and trust in the judiciary in India. As in the previous study, a significant contribution of the present study is the examination of the relationship between Δ SWB and trust in the police. To the best of our knowledge, not only are analytical studies of SWB at the all-India level scant but there is also none that explores the relationship between SWB and trust in the police at the all-India level. Here we examine who trusts the police and why, and whether this trust contributes to changes in wellbeing. In addition, following the methodology in Kulkarni et al (2022), we experiment with IV estimations of the key relationship between Δ SWB and trust in the police, based on two-

¹In another contribution, Ravallion (2014) conjectures that different people are likely to have different ideas about what it means to be 'rich' or 'poor', or 'satisfied' or not with one's life, leading them to interpret survey questions on subjective welfare differently.

stage least square (2SLS) and IV Lewbel estimations, to address the endogeneity concerns and robustness of the results.

2 Scheme

Section 3 is devoted to a literature review in two parts: first, we carry out a selective review of studies of SWB, since a detailed review already exists in Kulkarni et al (2021); this is followed by a review of a few studies of trust in the police and recent illustrative evidence that points to a decline in already low trust in the police. Section 4 highlights salient features of the India Human Development Survey, the only all-India panel survey for 2005 and 2012, conducted by National Council of Applied Economic Research and the University of Maryland. This section also includes a broad-brush treatment of covariates of trust in the police and whether this breeds further trust over time. Section 5 concentrates on the econometric methodology used – specifically, 2SLS and Lewbel IV estimators. Section 6 is devoted to the interpretation of the econometric findings. Section 7 discusses the important findings from a broad policy perspective, while concluding observations in Section 8 focus on the policy imperatives.

3 Literature review

Our literature review is in two parts: first, we provide a selective review of major contributions to the literature on SWB; this is followed by a detailed review of a few studies on trust in the police, and illustrative evidence of how their biases have turned into hostility towards minorities and lower-caste Hindus and, worse, into unprovoked brutality and extrajudicial killings.

3.1 Subjective wellbeing

As detailed literature reviews of SWB are already available in Kulkarni et al (2021), a short and selective review is given below.

One important empirical issue is whether the measures of SWB are reliable (see, eg, Kahneman & Krueger, 2006; Kahneman & Deaton, 2010; Diener & Inglehart, 2013; Akay et al, 2017; Deaton, 2011, 2018). Kahneman and Krueger (2006) argued that one way of partially assessing the validity of SWB measures is to examine their correlation with various individual traits. They argued that (1) recent positive changes in circumstances, as well as demographic variables like education and health, are likely to be positively correlated with happiness or satisfaction; (2) variables that are associated with low life satisfaction and happiness include *recent* negative changes of circumstances, chronic pain and unemployment, especially if only the individual concerned was laid off; (3) gender is uncorrelated with life satisfaction and happiness; and (4) the effects of age are complex – the lowest life satisfaction is apparently experienced by those who have teenagers at home, and reported satisfaction improves thereafter. They resolved the puzzle of the relatively small and short-lived effect of changes in most life circumstances on reported life satisfaction by invoking evidence on adaptability. They concluded that, despite their limitations, subjective measures of wellbeing enable a more direct analysis of welfare that could be a preferred alternative to traditional welfare analysis.

Another important study by Diener and Inglehart (2013) scrutinised life satisfaction scales in the global context, based on the authors' critical review of relevant studies and verification of the reliability of the scales used and validity of judgments made in SWB measures. They found that the stability of life satisfaction scores across time and situations suggests that consistent psychological processes are involved and similar information is used when people report their scores, while single-item scales are less stable than multi-item life satisfaction scales. Societal-level mean life satisfaction also shows robust consistency. In brief, the reliability and validity of life satisfaction scales reflect authentic differences in the ways people evaluate their lives, and the scores move in expected ways in relation to changes in people's circumstances.

Deaton (2018) is a strong proponent of SWB measures. He argued that these do not need to be related to behaviour. "If decision utility differs from welfare utility, and if people sometimes behave against their best interests, the direct measurement of well-being might still give an accurate measure, and might even enable people to do better, either through paternalistic government policies, or incentives, but more simply by providing information on the circumstances and choices that promote well-being" (Deaton, 2018, p 18). He noted that direct measures may also capture aspects of welfare beyond real income, which is what economists typically use to proxy utility. Health is a case in point; education, civil liberties, civic participation, respect, dignity and freedom are others.

Using the Gallup World Poll and the Cantril scale (1965) of life evaluation, Deaton (2018) offered valuable insights. These include the facts that:

- average ladder values vary greatly around the world, from around 4 in Africa, to between 7 and 8 in the rich countries of Europe and the English-speaking world;
- differences between men and women within regions are smaller than differences between regions;
- women tend to evaluate their lives somewhat more highly than men, except in Africa, and sometimes among those over 60;
- age patterns are apparent, but neither universal nor very pronounced, at least compared with those associated with international differences in incomes;
- the (unconditional) U-shape appears in the English speaking countries (UK, US, Canada, Ireland, New Zealand and Australia), to a lesser extent in East and South Asia and perhaps in Latin America and the Caribbean – though only in the last age group (65–74), and in Europe – more for men than women – but not elsewhere;
- in the two poorest regions, Africa and South Asia, life evaluation is low throughout life and, in Africa, it falls with age.

However, Deaton was puzzled by the U-shape of wellbeing, where it exists, since SWB rises after middle age, when people are losing their spouses, and when both morbidity and mortality are rising. In contrast, other components of psychological wellbeing may improve with age, thanks to less stress and the negative side-effects (eg physical pain) of work diminishing with retirement.

In an admirably clear and comprehensive review of factors associated with SWB, Dolan et al (2008) drew attention to ambiguities, inconsistencies and causality in the interpretation of results. These generally show positive but diminishing returns to income. Some of this positive association is likely to be a result of reverse causation, as indicated by the studies which show higher wellbeing leading to higher future incomes (Clark et al, 2008).

Some studies have found a positive relationship between SWB and each additional level/grade of schooling, while others have found that the middle level of schooling is related to the highest life satisfaction (e.g., Blanchflower & Oswald, 2004; Stutzer, 2004). However, there is some evidence that schooling has more of a positive impact in low-income countries. In addition, the coefficient on schooling is often responsive to the inclusion of other variables within the model. Schooling is likely to be positively correlated with income and health and, if these are not controlled for, the schooling coefficient is likely to be more strongly positive (Fahey & Smyth, 2004; Ferrer-i-Carbonell, 2005).

3.2 Trust in the police

Before reviewing the small sample of studies and the evidence on the erosion of trust in the police, something must be said on trust as an analytical category, since it obviously has moral implications.

Trust is a relational concept that links the subject (who trusts) to the object (that is trusted). Trust is conditional on an object between two individuals, A and B. Trust is thus expressed as A trusts B to do X (Hardin, 2000).² Fehr (2009) argued that trust should be defined in relation to people's behavioural and social preferences and beliefs and found that the survey-based measure of trust is correlated with low levels of betrayal aversion and risk aversion. Given that preferences are exogenous and beliefs are endogenous in the short run, trust is partly exogenous and partly endogenous, which led the author to argue that how trust was endogenously formed should be taken into account in the empirical analysis.

The police in India are still governed largely by the Police Act of 1861. Promulgated just four years after the events of 1857,³ and doubtless heavily influenced by them, it is an Act for an internal army of occupation, designed with the aim of staving off all possibilities of another revolt. In fact, several laws are not just antiquated but anomalous: the bizarre defamation law that allowed the actress Kushboo to be arrested for defaming Tamil womanhood (yes, all of them!) for her suggestion that premarital sex is not objectionable as long as the parties take precautions, goes back to the Indian Penal Code of 1860 (Banerjee, 2015). The resistance to reform of outdated laws is driven by the wicked nexus among criminal legislators, the lower judiciary and the police. Following a

² The addition of time to Hardin's definition indicates that trust may change over time – 'A trusts B to do X at T' (Bauer & Freitag, 2017).

³ In 1857 a widespread rebellion against British rule in India, known as the Indian Mutiny, resulted in violence on both sides and a massacre of Indians by British troops.

judgement of the 2006 Supreme Court of India, a Police Complaints Authority (PCA) was established in name in several states but, not unexpectedly, failed to influence police culture and functioning (Banerjee, 2015).

Basically, we need to distinguish between trust in police effectiveness (technical competence), on the one hand, and trust in police fairness and engagement, on the other. However, in all the empirical studies, overall confidence and trust in police fairness and engagement are highly correlated. It therefore follows that overall confidence measures are very closely related to active assessments of police behaviour relating to personal treatment (particularly, fairness) and engagement with the community (Jackson & Bradford, 2010).

That the public image of the police was unflattering even under the United Progressive Alliance (UPA) of political parties is reinforced by the latter's incompetence, and corrupt and discriminatory practices.

A 30 September 2005 report on the police in India by the Asian Human Rights Commission (AHRC) stated that "there is ample evidence of increasing illegal behaviour by the police in India". In fact, "the majority of complaints received by the [National Human Rights Commission] are against police officials, and corruption is one of the four principal categories of complaint (AHRC, 2005a). The results of a study on petty corruption done by Transparency International (TI) and the Delhi Centre for Media Studies, which involved a sample of 14,405 respondents in 20 Indian states and covered 151 cities and 306 villages, revealed that 80% of respondents had paid a bribe to the police, although the study did not outline the circumstances of the bribes (TI & CMIE, 2005a). Of the 11 public services examined, the police was the most corrupt (TI & CMIE, 2005b).

Evidence points to the alleged involvement of police officials in corrupt actions, such as land deals, 'fake stamp cases' – in which officials allegedly sold imitation state stamps and papers and carried out 'fake embossing [and] franking' – and demanding and accepting bribes⁴ There are also reports of alleged police incompetence, including the highly flawed manner in which complaints are recorded, and the false implication of innocent persons in criminal cases (AHRC, 2005b; Human Rights Solidarity, 2005).

In a scholarly study, based on two years of ethnographic research, Jauregui (2013) emphasised the multiplicity of power in the form of simultaneous and competing claims to different types of authority, and the ways that these competing claims interacted in specific contexts to produce subjects with more or less legitimate authority over time. More pertinently in the present context, she demonstrated that the process of delegitimation of police authority in India is not linked solely to 'conventional' police problems of corruption and brutality, but is also directly associated with everyday

⁴ Hindustan Times (2005). "Corruption in Police." 6 August.

interactions that reveal police's disempowerment.⁵ While this characterisation of the police is hard to dispute, it is arguably incomplete. It doesn't capture the range of perverted beliefs that prevails among a very large segment of the police.⁶

Two significant findings emerged from a recent, insightful study (Nalla & Nam, 2020). First, although citizens' perception of police corruption was a significant explanatory variable of trust in the police, procedural justice moderated the strength of the relationship between corruption and trust. Second, the nature of contact experience revealed essential differences in the moderating effect of procedural justice on the relationship between corruption and trust in the police. Finally, irrespective of the nature of contact experience, police effectiveness, and trust in the police are related.

More than two-thirds of the respondents believed that police officers were corrupt and lacking in integrity. Many respondents expressed the fear that, when a police officer approached, they would ask for a bribe (63.9%). Regarding procedural fairness, an average of only 20% of the respondents believed that the police investigated crimes fairly. More than three-quarters believed that it was easy to bribe police officers (79.3%), could get away with bribing a police officer (75.9%), or that officers would allow illegal operations and other businesses to operate in areas they are not allowed to run (76.1%). Finally, less than a third of all respondents believed that the police were procedurally fair in their operations or that they were polite (27.5%), investigated fairly (23.2%), were attentive to victims (29.8%), or sensitive to the public (25%) (Nalla & Madan, 2013).

Overall, based on their econometric analysis, Nalla and Madan (2013) reported that citizens who had contact with the police, and those who believed the police were effective in crime prevention, had greater trust in them, whereas those who believed the police were corrupt had less trust in them. However, the statistically significant relationship between corruption and trust in the police became weaker. Procedural fairness further exerted a significant and substantial impact on trust in the police. Even though citizens' perceptions of police corruption lowered their trust in the police, if police interactions with citizens were perceived to be fair, those experiences moderated their negative trust. In

⁵ The police in India are *legally subject* to whichever 'big men' or women happen to be presiding over the government. While the sovereignty of each state's government over its police force is not unusual or inherently insidious, such sovereignty frequently takes venal forms. Many political leaders and other sorts of big men have no qualms about using their power to manipulate the police at will, sometimes with the full force of the law behind them. Disobedience results in arbitrary suspension and transfers (Jauregui, 2013). In the present Bharatiya Janata Party (BJP)-led National Democratic Alliance (NDA) regime, however, what is perhaps more insidious is the convergence of beliefs between state governments, the lower judiciary and the police.

⁶ Mistrust in police officers may lead to mistrust of the judicial system in general, or mistrust in politics. Vice versa, mistrust in a government may yield mistrust in the police. In other words, mistrust could be systemic (Nooteboom, nd).

fact, corruption and procedural justice have independent effects on trust in the police, but procedural fairness also interacts with corruption. Thus, even though the respondents thought that the police were corrupt, those who believed they were procedurally fair were more likely to trust them. Hence procedural fairness moderates the relationship between corruption and trust in the police.

Although we lack firm evidence on corruption in the police under the National Democratic Alliance (NDA), there are strong grounds for our view that they are feared more because of their excessive use of force, and of their unprovoked and brutal killings of Muslims and other minorities, and of lower caste Hindus. Inherent biases influence action, but these biases are also contingent on external circumstances. It is the latter that have become more dominant today because of the extreme centralisation taking away the autonomy of state governments but, more importantly, because these governments are not just complying with the diktat of the centre but are also embracing it. The relentless pursuit of *Hindutva* (Hindu nationalism) has thus met little opposition. While laws on ‘love jihad’ and the Citizen Amendment Act 2019 (CAA) led to protests and violent clashes, these were put down ruthlessly⁷. ‘Cow lynchings’ (of people accused of killing cows, sacred in Hinduism) were not condemned by state governments and the police stood by in tacit support.

4 Data

Our analysis draws upon the two rounds of the nationally representative India Human Development Survey (IHDS) data for 2005 and 2012, collected jointly by the University of Maryland and the National Council of Applied Economic Research (NCAER), New Delhi.⁸ The first round (IHDS-1) was a survey of 41,554 households in 2004–05. The second round (IHDS-II) involved re-interviews in 2012 with 83% of the original households, as well as split households residing within the same locality, along with an additional sample of 2,134 households.⁹ The total for IHDS-II is therefore 42,152

⁷ “Love jihad” is a term used by the political and religious right to describe an alleged phenomenon where Muslim men lure Hindu women, by hook or by crook, into marrying them and converting to Islam.

⁸ See <https://doi.org/10.3886/ICPSR22626.v12>; and <https://doi.org/10.3886/ICPSR36151.v6>.

⁹ An additional sample of 2,134 households was added to the urban sample of IHDS-II to reduce the impact of attrition on the standard errors of a few key variables. The simulations estimated that the attrition would increase standard errors to unacceptable levels if eight out of 15 households were unreachable in each urban cluster. Hence, the interviewers were asked to report to NCAER supervisors if they were unable to re-contact five or more households in a cluster. The supervisor verified the losses and randomly assigned households to the right, the left, or to the original location based on the original locations of the households which were not observed in 2012, using a predefined rule. A similar addition to the rural sample was not attempted because of much lower attrition rates. Personal communication with Sonalde Desai, who led both rounds of the IHDS.

households. The sample is spread across 33 (now 34) states and union territories, and covers rural as well as urban areas. Repeated interviewing of the same households at two points in time facilitates a richer understanding of which households are able to partake in the fruits of growth, what allows them to move forward, and the process through which they are incorporated into or left out of a growing economy.

Topics covered by the IHDS relevant in the present context included perceived changes in SWB, expenditure, income, employment, health insurance, castes, religion, assets, trust in public institutions and demographic characteristics (gender, age, marital status).¹⁰

An important feature of the IHDS is that it collected data on SWB changes. The question asked was: 'Compared to 7 years ago, would you say your household is *economically* doing the same, better or worse today?'. So the focus of this SWB was narrow and had only three scales corresponding to *the perceived change* in the SWB (denoted as Δ SWB hereafter), not its level. It should also be noted that the measure was taken at the household level, not the individual level. While the focus of this variable is narrow, it has a few advantages. First, as reviewed in detail in the previous section, there exists a lifecycle effect on SWB: that is, perceived wellbeing changes according to the point of the lifecycle or age of the respondent, as well as those of his/her spouse or other household members. While the survey question asked about the change in SWB compared to that seven years ago, it may be different from the time-series comparison of the level in SWB because of the stronger effect of more recent experiences of negative shocks (eg death of a breadwinner) on SWB. In this sense, our proxy is likely to be more closely associated with SWB at the time of the survey (2012) rather than seven years ago (2004–05), although, given that this is a longitudinal survey, the individuals would be expected to retain some memories of the last survey as a reference point. Second, by being asked specifically about economic wellbeing, the respondents would perceive the same aspect in wellbeing. This would minimise the heterogeneity in the respondents' perceptions or focus on wellbeing compared with the variable based on more general questions about happiness or 'the best possible life'. Third, while most of the earlier studies asked about individual SWB, our measure captures Δ SWB at the household level. Since the lifecycle effect is somewhat diluted, this has the advantage that it allows analysis of the household-level determinants of Δ SWB.

Detailed expenditure data were collected based on 52 questions about household expenditure. The location of households was classified into rural, urban (net of slums) and slums. Five caste categories were considered: Brahmins, High Castes, Other Backward Classes (OBCs), Scheduled Castes (SCs/Dalits), Scheduled Tribes (STs/Adivasis) and a residual 'Other' category.

¹⁰ It is noted that the 2005 IHDS-I did not allow identification of the respondent, while the 2012 IHDS-II did. As the respondents reported SWB changes between 2005 and 2012 at the household level in IHDS-II, we have matched SWB changes, a dependent variable, to the household head's characteristics, and other explanatory variables, by restricting the sample only to cases where the household head served as a respondent.

Detailed demographic data were collected on, *inter alia*, gender, age, schooling and marital status. The latter was disaggregated into unmarried, married and widowed/separated. At the household level, the highest schooling attainment of adult women and adult men was taken from individual education records. Adults were defined as individuals 21 years or older. Based on the number of years of education, individuals were classified into illiterates, those with primary schooling, middle-level schooling, matriculates and graduates.

Net state domestic product (NSDP) per capita at constant prices was obtained from state economic surveys. We used its log transformation as an explanatory variable.

A unique feature of the IHDS is that it asks a question about trust in public institutions, such as state governments, the judiciary, police and politicians. Trust is measured in *ordinal* levels of confidence: a great deal of confidence, only some confidence and hardly any confidence.

'Trust' has often been used synonymously with confidence, as, for example, in Baker (2000) and studies cited therein. Even global and regional surveys do this. As noted by Gonzalez and Smith (2017), in the case of institutional trust, questions are traditionally formulated through a common heading (such as 'do you have confidence in your....'), followed by a list of institutions such as government, legislature, judiciary and police. Survey wording varies considerably both in terms of the general construction of the question and in the use of the term 'trust' or one of its synonyms (eg confidence).

Our focus here is on trust in the police. As this is endogenous, we instrument it by (log) of the number of occasions of police opening fire. The hypothesised relationship is negative, as many people get injured and some die, spreading fear and distrust among the local households.

4. 1 Covariates of trust in the police

Table 1 gives a list of variables used, their definitions and descriptive statistics (means, standard deviations, maximum and minimum values).

Based on the two rounds of the IHDS, we comment below on cross-tabulations of trust in the police by selected household head characteristics. To circumvent reverse causality/association, trust in the police was cross-classified by household/or head characteristics in 2005. This is followed by a brief discussion of whether trust in the police in 2005 bred trust in 2012.

Trust in the police rose a great deal from about 23% in 2005 to about 27% in 2012; the numbers reporting only some confidence rose sharply, from well over 33% to nearly 51%; however, those having hardly any confidence fell sharply, from 35% to around 22%.

Table 1: Summary statistics

Variables	Mean	SD	Min	Max
SWB	1.286	0.634	0	2
State proportion – trust in police – 2012	0.269	0.119	0.114	0.489
Log – Number of occasions of police shootings	0.241	0.428	0	1
Age	46.0	12.5	16	97
Age square	2268	1220	256	9409
Log per capita expenditure	6.491	0.666	1.386	10.578
Gender				
Male	0.898	0.302	0	1
Female	0.102	0.303	0	1
Marital status				
Married	0.865	0.342	0	1
Unmarried	0.010	0.099	0	1
Widowed/divorced	0.125	0.331	0	1
Sector				
Rural	0.717	0.450	0	1
Urban	0.266	0.442	0	1
Urban slum	0.018	0.132	0	1
Schooling grades				
Illiterate	0.357	0.479	0	1
1–4	0.116	0.320	0	1
5–8	0.234	0.423	0	1
9–10	0.167	0.373	0	1
>10	0.125	0.331	0	1
Religion				
Hindu	0.831	0.374	0	1
Muslim	0.108	0.310	0	1
Christian	0.025	0.156	0	1
Other	0.036	0.186	0	1
Caste				
Brahmin	0.049	0.215	0	1
High Caste	0.152	0.359	0	1
OBC	0.366	0.481	0	1
Dalit	0.222	0.416	0	1
Adivasi	0.082	0.275	0	1
Others	0.130	0.336	0	1
Log – Net state domestic product	9.983	0.430	8.976	11.065

Source: Authors' computations from IHDS.

These descriptive statistics were supplemented by cross-tabulations.

Let us now consider how trust in 2012 varied with the age of the household head in 2005. Those in the age group 31–50 years, also the largest group in the sample, accounted for the largest share of those with a great deal of confidence in the police. Among older age

groups the share fell sharply, declining to barely 3% among the oldest (> 70 years). What is interesting is that those in the age-group 31–50 also accounted for the largest shares of those with only some confidence and hardly any confidence, with sharp declines among older age groups.

The location of households was disaggregated into rural, urban (net of slums) and slums. Among those with a great deal of confidence, rural households accounted for about 72.5%, followed by urban households (about 26.5 %) and then slums (1.2%). A similar pattern was replicated for those with only some confidence and hardly any confidence, which of course followed the household shares.

Schooling years show a somewhat surprising pattern. Among those with a great deal of confidence, the highest share was of illiterates (under 36%), and the lowest was among those with 1–4 years of schooling (under 12%); proportions were about the same among matriculates and above (under 12%). Similar patterns were replicated among those with only some confidence and hardly any confidence, with a slight variation (ie the shares of matriculates and above were slightly larger than among those with 1–4 years of schooling). The sudden jump in trust from among the illiterates to those with 1–4 years of schooling and the rapid decline among those with more schooling are consistent with trust tinged with intimidation among the former and deep scepticism informed by greater awareness of the poor practices and corruption of the police among the latter.

If a household's affluence is judged in terms of its per capita expenditure tercile, we find that the share of those with a great deal of affluence rises across the terciles. The same is the case with the shares of those with only some confidence and hardly any confidence. However, among those with hardly any confidence, the variation in the shares across the terciles is minimal. Whether low income households are more likely to get rougher treatment from the police cannot be ruled out.

A striking variation in trust across religious groups was observed. The vast majority of those with a great deal of confidence in the police consisted of Hindus (nearly 84%). There was a sharp drop among Muslims (barely 10.5%) and a only tiny fraction among Christians (3.60%). This pattern was replicated among those with only some confidence as well as among those with hardly any confidence. Despite the protection offered by the UPA regime to minorities, it seems that they felt insecure and discriminated against in employment, housing and schooling for their children.

Caste hierarchy persists, despite affirmative action and upward mobility among the lower castes (eg the SCs). However, trust in the police is not in consonance with this hierarchy. The Brahmins have the lowest share (under 4%) among those with a great deal of confidence, while the OBCs have the highest (over 37%) followed by the SCs (about 24%). Similar patterns are replicated among those with only some confidence and hardly any confidence. This is indeed intriguing. Whether Brahmins and High Caste criminals expect to be treated differently from OBC and Dalit criminals because of the caste hierarchy is plausible but requires detailed scrutiny. Or perhaps being victims of police corruption lowers the former's trust in the police more than among OBCs and Dalits, a

question on which empirical evidence is lacking. Nevertheless, there is considerable evidence of a strong negative bias among the police against lower castes and these frequently receive rough treatment. Such evidence is at best incomplete, however, as we also need evidence on the perceptions of the lower castes about acts of discrimination by the police.

Finally, we examined the association between trust in 2005 and in 2012, specifically, whether trust breeds trust. Among those with a great deal of confidence in 2005, fewer than 32% retained this confidence in 2012. Over 51% of those with a lot of trust in 2005 reported a lower level of confidence, while those with hardly any confidence numbered around 17%. Among those with only some confidence in 2005, around 28% moved up to having a great deal of confidence, over 51% remained in the same category, while over 21% reported having hardly any confidence. Among those with hardly any confidence in 2005, well over 21% moved up to having a great deal of confidence, around 50% moved up to having some confidence and about 29% remained in the same category. Thus not just a high proportion of those with a great deal of confidence remained so in 2012 but there was also a great deal of upward mobility from the lower categories of 'only some confidence' and 'hardly any confidence'. These findings suggest that not only does trust breed trust but it also evolves over time.

5 Methods

5.1 Model specifications

To serve as the basis for more refined models, we began with a multiple regression model where the dependent variable, ΔSWB (0, 1, 2) – corresponding to 'worse-off', 'just the same' or 'better-off' in economic aspects – was estimated by a set of explanatory variables using ordinary least squares (OLS).¹¹ Because ΔSWB is the perceived change in economic wellbeing during the past seven years, based on the perception of the head of the household in 2012, all the explanatory variables were based on the survey questions in 2005, in order to partially address the issue of reverse causation from ΔSWB to, for instance, income/expenditure.

A multiple regression model is expressed as:

$$y_i = \beta_0 + \beta_1 T_i + X_i \beta_2 + \varepsilon_i \quad (1)$$

where y_i is ΔSWB , the change in SWB between 2005 and 2012 and i stands for an individual where the household head was a respondent in 2012 (where i takes 1, ...,

¹¹See Angrist and Pischke (2008) for a detailed argument in favour of the Linear Probability Model (LPM) over the probit model, where OLS is used for a binary choice model, against the standard textbook recommendation of the use of probit or logit models for the binary variable. The use of OLS for the discrete variable (0, 1, 2) can be justified on the same grounds. OLS with robust clustered standard errors is used to address possible correlations between individuals within a household as well as to address heteroscedasticity.

27,958). β_0 is a constant term. ε_i is the error term assumed to be independent and identically distributed.

Our main explanatory variable was denoted as T_i , whether a household head has trust in the police. Our main question was whether trust in the police was associated with improvements in perceived wellbeing, tested by examining the sign and the statistical significance of β_1 .

X_i denotes a vector containing a number of other explanatory variables and β_2 is a vector of coefficients to be estimated. X_i includes the age of the household head and its squared term, log per capita expenditure, caste, religion, marital status, gender, location – rural, urban or slums – level of education and (the logarithm of) NSDP per capita, all in 2005.

Given that the variable on trust, T_i , may be endogenous in Equation (1), we instrumented it by using a two-stage least squares (2SLS) estimation.. In the first stage, we estimated T_i by a single instrument Z_i and a vector of exogenous variables, X_i (Equation (2)) and in the second we estimated Equation (1) based on the estimate of Equation (2) in the first stage.¹²

$$y_i = \beta_0 + \beta_1 T_i + X_i \beta_2 + \varepsilon_{1i} \quad (1)'$$

$$T_i = \alpha_0 + \alpha_1 Z_i + X_i \alpha_3 + \varepsilon_{2i} \quad (2)$$

As noted earlier, when the police open fire this is likely to lower trust in the force as it spreads fear and vast sections of the local population dread reprisals. However, since the system of equations has only just been identified, we can only test for whether the instrument is strong but not its exogeneity.

In addition, we applied the Lewbel IV estimator, which has been proposed as an alternative method of estimating Equations (1)' and (2) (Lewbel, 2012; Baum & Lewbel, 2019). The Lewbel IV draws upon a two-step procedure: in the first step, the endogenous variable, T_i , is estimated by X_i by using a simple OLS and saving the residuals as $\hat{\varepsilon}_{2i}$; in the second step, T_i and y_i (Δ SWB) in Equations (1)' and (2) are jointly estimated by the standard 2SLS based on the external instrument, Z_i , as well as the internally generated instruments, $(X_i - \bar{X}_i)\hat{\varepsilon}_{2i}$, where \bar{X}_i is the sample mean of X_i (Baum & Lewbel, 2019, p 758). This procedure ensures that internally created instruments are uncorrelated with the product of heteroscedastic errors to help the identification of Equation (2) (Lewbel, 2012). We used the Lewbel IV model as an attempt to strengthen the instruments and as a robustness check of 2SLS.

¹² Note that y_i , Δ SWB, is the respondent's perceived change in SWB in economic aspects between 2005 and 2012 based on the survey data in 2012. y_i strongly reflects the respondent's perception in 2012, as well as the changes which occurred recently, rather than the actual changes in SWB between 2005 and 2012. Trust in the police, T_i could be instrumented by log number of occasions of police opening fire either in 2005 or 2012, but as the instrument in 2012 was highly correlated with that in 2005, we decided to use the instrument in 2005 only.

6 Results

The results are given first for 2SLS, followed by those obtained from Lewbel, and some selective comparisons.

5.1 2SLS

The first-stage result (Table 2, column 1)

The dependent variable, trust in the police or T_i was regressed on the instrument, log number of occasions of police shooting, and other covariates. The coefficient on the instrument was highly significant at the 1% level. If the number of occasions of the police opening fire increased by 1%, the proportion of people trusting the police decreased by 2.37%, other factors being equal. The instrument passed the Stock–Yogo weak instrument test as the F-statistic of excluded instruments far exceeds the threshold at 10% bias of 2SLS (relative to OLS) (Stock & Yogo, 2005).¹³ All explanatory variables relate to 2005, except the instrument – the proportion of people who trust the police as measured in 2012 – while the dependent variable relates to 2012, in order to circumvent reverse causality or association.

We will discuss the results for the demographic explanatory variables first. Trust in the police was significantly negatively associated with the age of household head but positively with the square of age. These together imply that trust rises with age but at a diminishing rate. Since the coefficient on the square of age is negligible, it follows that the diminution is negligible.

¹³ As the equation has just been identified, we are unable to test the exclusion restriction statistically.

Table 2: Covariates of trust in the police (the first stage equation (Equation (2)))

State proportion – trust in police – 2012				
Variables	Ivreg		Lewbel IV	
	Coeff	SE	Coeff	SE
Log – no of occasions police fire	-0.024***	(0.000)	-0.0291***	(0.000)
Age	-0.001**	(0.000)	-0.001**	(0.000)
Age square	7.56e-06*	(4.10e-06)	0.00000454	(0.000002)
Log per capita expenditure	0.012***	(0.001)	0.011***	(0.001)
Gender				
Female	0.026***	(0.004)	0.014***	(0.004)
Marital status				
Unmarried	-0.019***	(0.007)	-0.023***	(0.008)
Widowed/divorced	-0.016***	(0.004)	-0.009***	(0.004)
Sector				
Urban	-0.008***	(0.002)	-0.004**	(0.002)
Urban slum	-0.041***	(0.006)	-0.040***	(0.004)
Schooling grade				
1–4 years	0.005*	(0.002)	0.008***	(0.002)
5–8 years	-0.007***	(0.002)	-0.008***	(0.002)
9–10 years	-0.006**	(0.002)	-0.005**	(0.002)
>10	-0.010***	(0.003)	-0.010***	(0.003)
Religion				
Muslim	0.055***	(0.006)	0.070***	(0.008)
Christian	0.103***	(0.006)	0.113***	(0.007)
Other	-0.093***	(0.005)	-0.078***	(0.005)
Caste				
Brahmin	-0.041***	(0.003)	-0.023***	(0.004)
High Caste	-0.020***	(0.003)	-0.008***	(0.002)
Dalit	0.010***	(0.002)	0.009***	(0.002)
Adivasi	-0.030***	(0.003)	-0.025***	(0.003)
Others	-0.048***	(0.006)	-0.0657***	(0.008)
Log - net state domestic product	0.057***	(0.002)	0.086***	(0.002)
Constant	-0.265***	(0.019)	-0.541***	(0.021)
Observations	29,543		29,543	
	F test of excluded instruments:		F test of excluded instruments:	
	F (2, 29,519) = 10351.26		F (23, 29,498) = 1218.60	
	Prob > F = 0.0000		Prob > F = 0.0000	
	10% maximal IV size 19.93		10% maximal IV size 11.41	

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Relative to males, females exhibited a significant positive association with trust in the police. Women's trust in the police was on average 2.62% higher than men's. This is somewhat intriguing, as women are more likely to experience harassment, intimidation and even sexual assault when interrogated by the police. As police (un)fairness is conditional on access to the force, women's limited access (constrained by family norms and social taboos) could partly explain this. In addition, if their awareness of corruption in the police is lower than that of male household members, it is conceivable that this more than offsets the unfairness meted out to them.

Relative to the married, unmarried and divorced or separated groups both showed lower trust in the police – by 1.86% and 1.59%, respectively. A likely explanation is that women in these two categories are more likely to receive poor treatment from the police.

Location was associated with significant differences in trust in the police. Relative to rural households, those living in urban areas and those in urban slums had less trust in the police – by 0.79% and 4.1%, respectively. While urban and slum residents are more likely to have frequent access to the police, our results presumably reflect their experience of corruption and uncivilised behaviour among police officers, which lowers their trust in law enforcement. It should be noted that urban slum-dwellers had the lowest level of confidence in the police.

Schooling is a form of human capital with positive externalities (such as a better informed citizenry). Our results reveal a striking pattern. Relative to those without any schooling, those with 1–4 years of schooling had higher levels of trust in the police (0.49% higher than those with no schooling). However, among those with higher schooling grades, the coefficients show an overall decline. Compared with the reference group of those without any schooling, the percentage of those with five to ten years of schooling trusting the police was lower by 0.58%–0.67%, while the corresponding percentage for those with higher education (10 years) was lower by 1% on average, other factors being equal. These figures point to a strong negative relationship between trust in the police and higher schooling grades. On the face of it, this is an intriguing relationship. What may, however, explain it is better awareness of rampant corruption in the police (in the form of fake charge sheets, bribes, extortion, interference in land and property transactions), which has been found to lower trust in them (Nalla & Madan, 2013).

Religious affiliations showed a somewhat surprising pattern. Relative to Hindus, both Muslims and Christians showed higher levels of trust in the police (by 5.54% and 10.3%, respectively), while ‘Others’ (comprising Jains, Sikhs and Buddhists) showed significantly lower levels (by 9.29%). As minorities such as Muslims and Christians are viewed with suspicion, and the police share this perception, they are more likely to be roughed up in any communal dispute, while ‘Others’ are simply left to their woes. Nevertheless, if state governments offer protection through secular policies, and provide remedial action to certain minorities, their belief in the fairness of justice may more than offset unfair police treatment. As this is a conjecture, empirical evidence may help resolve this conundrum.

Caste hierarchy persists, despite affirmative action (quotas for SCs, STs and OBCs in public employment and education) and the upward economic mobility of the lower castes. Yet the variation in trust in the police is not in concordance with the hierarchy. Both Brahmins and High Castes displayed lower trust, relative to OBCs, while Others had similar levels to the High Castes. However, while OBCs reported higher trust, STs reported lower trust. An explanation may lie in the interactions of expectations of different castes and police behaviour. If the upper castes expect to be treated more favourably and decently than the lower castes, but are treated the same way as others – especially the lowest castes – the former are more likely to take umbrage than the latter, and show lower trust. The difference in levels of trust in the police between Dalits and Adivasis may be explained by the fact that the former probably have easier access to the police, since the latter are confined to remote, isolated regions.

Economic affluence at both household and state levels has a significant effect on trust in the police. A 1% increase in per capita expenditure is associated with a 1.15% decrease in trust in the police. If bribes are more easily affordable at higher levels of affluence, police investigations may be delayed, crucial evidence manipulated or destroyed, the victims intimidated and, eventually, a favourable verdict obtained. However, the fact that bribes and other forms of corruption are so rampant could also cause resentment and lower trust in the police.

In sharp contrast, affluence at the state level was associated positively with trust in the police. In fact, a 1% increase in state affluence was associated with a 5.72% increase in the trust in the police. This would be likely if there is: (1) greater public expenditure on the infrastructure for law enforcement in the form of police vehicles, an extensive network of CCTVs for surveillance, procurement of advanced equipment for effective law and order management, upgrading of communication systems such as the cyber highway and digital trunking radio system and, above all, better training of the police at the lower level; and (2) transparency and accountability of the police in tracking crimes and solving them legitimately. It would be naïve to presume that more affluent states perform better on both counts but even doing so on one could transform the unflattering image of the police. Hence this explanation is largely conjectural.

The second-stage result (Table 3, column 1)

Let us now examine the covariates of changes in SWB. The first column of Table 3 contains the coefficient estimates. Given that the instrument of trust in the police, log of the number of occasions of police firing on civilians, turned out to be a strong predictor, (predicted) trust in the police was positively associated with a change in wellbeing. In other words, the higher the trust, the greater the wellbeing. The estimated coefficient of the predicted trust (0.390) implies that a unit increase in trust (ie from 0 to 100%, given its definition in Table 1) is associated with a 39% increase in moving up to the upper category in the perceived change in SWB (given that a unit increase corresponds to a 100% increase). That is, a 1% increase in those who trusted the police was associated with a 0.39% increase in the perceived change in economic wellbeing on average, other factors being equal.

Among the demographic variables, both age and square of age were significantly associated with Δ SWB. While there was a positive relationship between wellbeing and age, there was a negative relationship with the square of age. However, since the marginal effect of the latter was negligible, it was inferred that wellbeing rises with age but at a negligible, diminishing rate. If the head of a household gets one year older, the perceived wellbeing change tends to be higher by 0.007%, while the magnitude tends to be marginally smaller as he or she gets older. While the magnitude is small, the result is plausible, as work stress diminishes after retirement and, if there is a lifecycle effect in savings, higher wellbeing in old age is plausible. However, as Deaton (2018) noted, perhaps a greater likelihood of spousal loss and pain could offset to some extent the gain in wellbeing.

Relative to rural households, urban households displayed greater wellbeing, with the probability of moving to the upper category of Δ SWB being 0.07% higher. This is not surprising, as employment opportunities, schooling for children and health care are a lot better in cities. There are, of course, 'costs' in terms of greater congestion, pollution and lower participation in community affairs. But the net advantage in terms of greater wellbeing is significant.

Levels of schooling appeared to make a significant difference. Relative to those without any schooling, higher levels of schooling were monotonically associated with greater improvements in wellbeing. For instance, those with 1–4 years of education were 0.056% more likely to perceive a change for the better in SWB than those without any education. The difference in the marginal association increased to 0.09%, 0.17% and 0.19% as a household head was educated for longer durations at school. Those with higher levels of schooling not only benefit more from higher wages or salaries but perhaps also from their more productive participation in community affairs.

Religion and caste are salient among socioeconomic characteristics. Relative to Hindus, Christians and a mixed group of religious sects (comprising Jains, Sikhs and Buddhists) in the 'Others' category, enjoyed significantly higher levels of wellbeing. Other things being equal, Christians ('Others') were 8.55% (14.6%) more likely to feel a rise in their perceived wellbeing. As the UPA's secular credentials are strong, it follows that minorities would be better protected. But while laws against discrimination on the basis of religion are one thing, actual protection against discriminatory practices is another. Despite legislative protection, discrimination in employment, housing and education is pervasive and Muslims are perhaps the most victimised.

Changes in SWB varied across castes. Somewhat surprisingly, Brahmins and High Castes did not yield significant coefficients, relative to OBCs. However, among the lower castes, SCs showed significantly lower wellbeing (by 7.78%) while STs showed significantly higher wellbeing (by 4.68%) relative to the reference category, OBCs. This is not surprising, as SCs are still not integrated into the mainstream, despite affirmative action and their upward income mobility, while STs remain isolated and follow their traditional lifestyle, with infrequent encounters with the rest of the society.

Table 3: Covariates of Δ SWB

Δ SWB or change in subjective wellbeing				
Variables	2SLS		Lewbel IV	
	Coeff	SE	Coeff	SE
State proportion – trust in police – 2012	0.390**	(0.159)	0.214**	(0.0925)
Age	0.007***	(0.002)	0.007***	(0.002)
Age square	-7.91e-05***	(2.50e-05)	-7.90e-05***	(2.50e-05)
Log per capita expenditure	0.066***	(0.009)	0.067***	(0.009)
Gender				
Female	-0.020	(0.029)	-0.014	(0.029)
Marital status				
Unmarried	-0.054	(0.049)	-0.060	(0.049)
Widowed/divorced	-0.016	(0.027)	-0.020	(0.027)
Sector				
Urban	0.072***	(0.011)	0.071***	(0.011)
Urban slum	0.000	(0.032)	-0.009	(0.030)
Education				
1–4	0.056***	(0.018)	0.058***	(0.018)
5–8	0.099***	(0.014)	0.099***	(0.014)
9–10	0.170***	(0.017)	0.170***	(0.017)
>10	0.189***	(0.019)	0.188***	(0.019)
Religion				
Muslim	0.056	(0.039)	0.062	(0.038)
Christian	0.086**	(0.037)	0.103***	(0.035)
Others	0.146***	(0.031)	0.134***	(0.030)
Caste				
Brahmin	0.014	(0.023)	0.006	(0.022)
High Caste	0.005	(0.016)	0.000	(0.015)
Dalit	-0.078***	(0.015)	-0.077***	(0.015)
Adivasi	0.047**	(0.021)	0.043**	(0.021)
Others	-0.080**	(0.037)	-0.085**	(0.037)
Log – net state domestic product	0.042**	(0.019)	0.057***	(0.014)
Constant	0.107	(0.178)	0.003	(0.146)
Observations	29,543		29,543	
Hansen J statistic	NA		65.62***	
	equation exactly identified		Chi-sq (21) P-val = 0.0000	

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Dalits were more likely to resent being on the fringe of the social and economic mainstream, in sharp contrast to Adivasis, who are outside the mainstream and do not resent being so. Besides, their fewer encounters with the police have left them more confident about the latter's procedural fairness.

Both affluence measures were positively related to changes in wellbeing. Their marginal effects were large. A 1% increase in per capita expenditure was associated with a 6.6% increase in wellbeing. This is hardly surprising, as the wellbeing measure is based on the perception of economic wellbeing. So also is the case with NSDP per capita. A 1% increase in it was associated with a 4.25% increase in wellbeing. As more affluent states

offer more remunerative employment opportunities and are likely to be better equipped to provide public goods such as schooling and health care, this finding is highly plausible.

5.2 Lewbel IV

As Lewbel IV with an internally generated instrument results did not yield a significant relationship, these results are omitted. We therefore confine our comments to Lewbel with external instruments results, as shown in Tables 2 and 3.

As the F test statistic of excluded instruments (1218.6) exceeds the Stock–Yogo value of 11.41 (at 10% bias relative to OLS), it follows that the instrument is strong (the bottom of Table 2). The Hansen J-statistic is statistically significant and thus the condition on the exclusion restriction does not hold (the bottom of Table 3). This suggests that any causal inferences must be avoided. However, the fact that the two specifications based on 2SLS and Lewbel IV produce similar and, in a few cases identical, coefficient estimates suggests that the results are robust.

The first-stage result (Table 2, column 2)

A significant and negative coefficient estimate was found on the log of the occasions of police opening fire, the external instrument in the first stage equation in which trust in the police was the dependent variable. A 1% increase in the number of occasions police open fire was associated with a 2.91% decrease in the proportion of people trusting them. This is close to the estimate we obtained with 2SLS.

Because the results are similar overall to those of 2SLS, we selectively discuss them in this subsection. Both age and age squared yield significant coefficient estimates, positive for the former and negative for the latter. However, the coefficient estimate on age is small and that of the square of age is negligible. Thus, it is safe to infer that trust in the police rises slowly with age but with a negligible diminution in old age. The coefficient estimates are similar in both specifications.

As for gender, females show significantly higher trust than males in the police. This seems counter-intuitive, as women filing a First Information Report (FIR) are often mistreated and in many cases subjected to sexual harassment. However, this is less likely when they are accompanied by their male relatives or spouses. Further, since there are restrictions on their free movement, they tend to lodge a complaint only when a serious offence has been committed (eg a child is kidnapped, burglary, brutal violence) and in such situations, the police are obliged to record a FIR. The 2SLS and Lewbel IV coefficient estimates are close.

Marital status shows variations in trust in the police. Relative to the married, both unmarried and widowed or divorced people showed lower trust in the police – especially women – presumably because they are more vulnerable to humiliation and sexual harassment. Both 2SLS and Lewbel IV coefficient estimates are similar. In the case of the Lewbel IV, if the respondent was unmarried (widowed/divorced), trust in the police tended to be lower by 2.35% (0.93%) compared with the married respondent.

Location is associated with variations in trust in the police. Relative to rural households, both urban and slum households exhibited significantly lower trust in the police, especially the latter. Both coefficient estimates are lower in (absolute) values than the corresponding 2SLS estimates. More frequent brushes with the police among urban households are highly likely, as are unpleasant experiences that may stem from bribery and corruption. That urban slum households show much lower trust is also plausible, as their bargaining power *vis-à-vis* police harassment is much lower. The proportion of trust in the police was 3.98% lower for residents in urban slums than for rural residents.

Schooling grades, relative to those without any schooling, show a mixed pattern. While those with minimum schooling (1–4 years) showed a positive association with trust in the police, those with higher years of schooling showed negative associations. Although the signs of coefficient estimates are consistent, the magnitudes differ between 2SLS and Lewbel IV. While in (absolute) value the latter estimates for the lowest grade of 1–4 years and the next grade of 5–8 years of schooling are larger than the 2SLS estimates, those for the still higher grades of 9–10 years and >10 years are relatively close. As conjectured earlier, higher levels of schooling make individuals better aware of the procedural unfairness of the police and of rampant corruption and thus lower people's trust in the police.

In the socioeconomic sphere, religion and caste are salient. Relative to Hindus, somewhat surprisingly, Muslims and Christians showed greater trust in the police, while the mixed group of 'Others' showed less trust. As noted earlier, during the secular UPA regime, minorities enjoyed greater legislative protection, which could partly explain their greater trust. This is not meant to condone discriminatory practices against them in housing, employment and education, however. If the police are accountable to the judiciary and are punishable for unnecessary harassment, this is likely to impart greater trust among minorities, and possibly to more than offset unpleasant experiences in their daily lives. Whether simply neglecting 'Others' and leaving them to fend for themselves lowers their trust seems plausible but should be subject to further scrutiny. The fact that the 2SLS and Lewbel IV coefficients are mostly similar corroborates their robustness and thus we avoid mentioning the marginal associations here.

The caste results are similar in both 2SLS and Lewbel IV estimations. Both Brahmins and High Castes shared lower trust in the police, relative to OBCs. Among the lower castes, there was a contrast, as Dalits showed lower trust while Adivasis showed higher trust. The mixed group of 'Others' is also associated with lower trust. As noted earlier, expectations and interactions with the police may account for variations in trust across castes. If Brahmins and High Castes are treated the same way – nobody is above the law – and are subject to bribes and other forms of corruption, their resentment translates into lower trust. On the other hand, the failure of Dalits to join the mainstream, despite affirmative action, and their inability to afford bribes are sufficient grounds for their lower trust. As Adivasis are confined to remote locations with a traditional community culture, their encounters with the police are few and far between. It is thus not surprising that their image of the police as an effective law enforcement agency is largely intact.

Turning to affluence, both 2SLS and Lewbel IV produced similar positive coefficient estimates of per capita expenditure. A 1% increase in per capita expenditure yields a 1.06 % increase in trust (1.15% in 2SLS). Whether affluence implies easier affordability of bribes and the buying of pleasant treatment (avoidance of public humiliation, delayed arrests) by the police seems plausible. The coefficient estimates of state affluence were significant and positive in both specifications, with a slightly larger estimate of trust in the police in the Lewbel IV specification. A 1% increase in NSDP per capita was associated with an increase of 8.57% (in 2SLS, 5.72%). This is a large marginal effect/association, presumably thanks to the better infrastructure for the police.

The second-stage result (Table 3, Column 2)

In the second stage, there was a strong positive association between change in SWB and (predicted) trust in the police (Table 3). A 1% increase in trust in the police yields a 0.21 % increase in the probability of moving up one category in Δ SWB. This is lower than the coefficient estimate in 2SLS (0.39%). In either case, the marginal effect/association is large.

Age and the square of age yield coefficient estimates that are identical to those from 2SLS. The coefficient of age is positive and that of the square of age is negative but negligible. Hence it follows that change in wellbeing rises slowly with age but its increase becomes slighter as old age increases.

Neither gender nor marital status yielded significant results in either specification.

Location is associated with significant variation in change in wellbeing. Relative to rural households, urban households yielded a significant positive coefficient (almost identical to that obtained using 2SLS). The explanation offered earlier in terms of greater provision of remunerative employment opportunities, as well as public goods (sanitation, access to safe drinking water and electricity), is applicable here. Thus higher wellbeing in urban locations is highly plausible, despite costs in terms of pollution and congestion.

As in the 2SLS case, schooling grades were positively associated with an increase in wellbeing, relative to no schooling. In addition, the coefficient estimates rise with schooling levels. To illustrate, relative to those without any schooling, a unit increase in the level of years of schooling in the lowest category (1–4 years) was associated with a 0.057 increase in wellbeing, while in the highest category the corresponding increase was almost 0.19. The Lewbel IV coefficient estimates replicate the 2SLS estimates. As noted earlier, higher levels of schooling not only enhance the prospects of highly rewarding employment opportunities but also generate positive externalities for the community as a whole.

Among Christians and Others, relative to Hindus, increases in subjective wellbeing were higher. If these minorities enjoy greater security, as they seem to, these are plausible findings. The case of Muslims, however, is different, as they were legally protected under the UPA but, in fact, suffered considerable humiliation and discrimination in their daily lives. As a result, the change in their wellbeing is not significantly different from that of

the reference group of Hindus. Moreover, the coefficient estimates in the two specifications are close and we avoid mentioning the marginal associations.

The caste results were almost identical to those obtained using 2SLS, thus there is no point in repeating our earlier comments.

Associations of the two measures of affluence with change in subjective wellbeing were also similar. Hence we avoid repetition.

In brief, the close correspondence between the 2SLS and Lewbel IV results corroborates the robustness of our econometric analyses. However, given the methodology and just two waves of the IHDS, we are unable to incorporate fixed/random effects. As measures of both trust and wellbeing rely on individual perceptions, fixed/random effects could potentially influence the results.

7 Discussion

Without summarising the results, we here comment on the significance of selected results from a broad policy perspective. This sets the stage for a discussion of policies to reform the police in the current NDA regime. This is necessary as the defining characteristic of the present political regime is a relentless pursuit of *Hindutva*, with brutal suppression of minorities such as Muslims and lower-caste Hindus. Although our analysis of the relationship between Δ SWB and trust in the police overlaps largely with the UPA regime, several of its insights have considerable relevance in the present context of social and religious disharmony, in which the police have played a largely instrumental role.

That trust in the police has a key role in changes in SWB highlights the importance of the rule of law and, more specifically, of the police as a law enforcement agency. This is perhaps the only all-India study based on a rigorous methodology.

The IHDS does not allow us to illuminate the mechanisms through which trust in the police is associated with an improvement in SWB. However, if the police demonstrate to citizens of diverse communities that they are effective, fair and aligned with local interests, this not only makes them more directly accountable but also strengthens the moral connection between people and their police force, and thus contributes to SWB. However, research findings cited earlier point not just to technical incompetence (eg the 'highly defective' manner in which complaints are recorded, and the false implication of innocent persons in criminal cases) but also to corruption, lack of procedural fairness and, more recently, to large-scale brutality against Muslims and low caste Hindus and to extrajudicial killings. We therefore argue that the moral connection between the people and the police is largely broken and, as a consequence of this erosion of trust, SWB has suffered irreversibly.

While age has a significant association with trust in the police, said trust rises only slowly with advancing age. However, with the rapid break-up of the joint family system, the old are often on their own and vulnerable to thefts, violence and murder. So their protection

is likely to be far more important in the near future. Whether the police have the capability to ensure their safety and protection seems unlikely.

That females enjoy greater trust in the police is somewhat surprising, as there are frequent accounts of how they are humiliated and sexually harassed by the police. As explained already, our finding is plausible if and only if women are accompanied by a male relative when dealing with the police. But as women are increasingly emerging as independent professionals with a greater sense of autonomy, they will have to learn how to deal with an ill-trained and corrupt police force while the latter become more accountable for their misbehaviour. This is a daunting policy imperative.

Both unmarried and widowed or divorced people show lower trust in the police than the married. Restricting our focus to women among these categories, they are seen as easy prey by the police. If they are victims of rape, they are disowned by their families and are afraid to file a complaint because they fear retaliation by the guilty and harassment from the police. Worse, they are often blamed for inviting sexual assaults. As the guilty often get away without any punishment, not just male attitudes but also those of the police, as well as accountability for their actions, with appropriate punishment for any malfeasance, are imperative but seem unlikely.

Those living in both urban and slum settings bear the brunt of police corruption and high handedness for any real or fake offences. Their awareness of corrupt police practices – bribes for petty offences – are familiar and any resistance provokes the wrath of the police. As observed earlier, the police are more feared than liked. Lodging complaints against police intimidation and corruption is likely to fail and may even provoke further harassment of the petitioner.

Expanding schooling and upgrading its quality in both urban and rural areas, especially the latter, are of paramount importance. Higher levels of schooling add to the awareness of police corruption and incompetence. Whether greater awareness translates into lobbying for police reforms is uncertain.

As minorities are often victims of police callousness and of strong negative biases frequently backed by police tyranny – especially under the present NDA regime with its unrelenting *Hindutva* ideology – the trust gained under the UPA, with its strong secular credentials, has plausibly and perhaps irretrievably declined in recent years. With a muzzled media and stringent curbs on freedom of speech, plus partisan police, communal riots have risen in frequency, intensity and deadliness. So the results reported in Section 5 are likely to be reversed.

That affluence is associated with greater trust in the police is explainable in terms of affordability of bribes at the household level and better police infrastructure at the state level. While greater affluence has many economic benefits, the inclination to bribe can only be curtailed through greater transparency and accountability of the police and, if the latter are found guilty of corruption, through swift and severe punishment. What our results also indicate is the dire need for stronger police equipment and infrastructure (jeeps, vans, full-body armour complete with helmets, portable radios, pepper spray,

collapsible batons, video microphone transmitters, bullet-proof vests, efficient and prompt coordination between patrol and headquarters, and good quality housing for junior police staff) and of course better salaries and incentives to lower the crime rate.

That trust in the police is associated significantly with improvements in SWB is a key finding, affirming the important role of maintenance of the rule of law. However, trust in the police rose between 2005 and 2012 but remained low and has doubtless lowered further during the NDA regime for the reasons stated earlier. This raises a deep policy concern. As emphasised by Nalla and Nam (2020), the police lack both technical competence and procedural justice. Police reforms are being resisted by politicians with a criminal background (Kulkarni et al, 2022). Indeed, the evidence points to an unholy nexus between politicians, the judiciary and the police.

Age and age square coefficient estimates point to a slow improvement in wellbeing, with a negligible diminution in old age. The proportion of old is expected to rise rapidly in the near future. One feasible policy option is to expand employment opportunities for old people who are physically fit and mentally strong. Thus their rich experience and skills could be utilised to enhance their wellbeing. But misconceptions about their fitness for stable employment abound. They are less likely to be suitable for work that is physically demanding and strenuous than for desk jobs. Loans could be given to those with an entrepreneurial aptitude for small businesses. One initiative of the NDA is The Maintenance & Welfare of Parents & Senior Citizens (Amendment) Bill, 2019. The proposed bill has expanded the definition of 'maintenance' and 'welfare'. It states that 'maintenance' includes provision for food, clothing, housing, safety and security, medical attendance, healthcare and treatment necessary to lead a life of dignity. However, it omits the expansion of employment opportunities. Whether this will make a significant difference to the wellbeing of the old will depend on when and how it is implemented.

Urban households enjoy higher changes in wellbeing but rapid and uncontrolled urbanisation poses threats as a result of spikes in pollution, congestion, unhygienic conditions and rapid deterioration of the quality of public provisioning of healthcare and schooling. One policy option is to raise productivity in agriculture through more funding for R&D and extension services together with easier access to credit for non-farm businesses. These policies have the potential to curb rural–urban migration. Nevertheless, urban development is an equally important concern, and more attention needs to be given to crumbling urban infrastructure. Expansion of power and water supplies, good housing, transportation, healthcare and schooling on a large scale may exceed the fiscal capacity of the government; therefore international funding (from multilateral development agencies as well as private capital) has a potentially important role. Further, pressure on metropolitan cities could be eased through the development of small towns that act as a conduit between villages and cities. In fact, their contribution to employment and growth through small enterprises is large. Yet they remain invisible in the policy discourse as they are administratively classified as rural (Himanshu, 2017).

As schooling levels are positively associated with improvements in wellbeing, there is a monotonic rise in wellbeing at successively higher levels of schooling. This is another

area of policy concern, as female enrolments are not just lower than male enrolments but, equally importantly, the quality of school infrastructure and instruction ranges from unsatisfactory to abysmal. Teacher absenteeism in public schools, to which Dreze and Sen (2002) drew pointed attention, is as relevant today as in 2002. Not only is effective monitoring of teachers' performance by public agencies a priority but parents' close involvement is perhaps just as important.

During the UPA regime, minorities enjoyed legal protection and were entitled to live as equal citizens. However, while Muslims were included in this legal protection, their everyday experience differed as they faced humiliation, aggression and discrimination from large segments of hard-core Hindus. So it is not surprising that their wellbeing was not significantly different from that of Hindus. The fact that it was not significantly lower may have to do with their entitlement to justice. Under the present NDA regime, however, they have experienced police brutality for carrying on their traditional occupations (eg cattle trading), 'fake' encounters in which many are seriously injured, maimed for life, or just killed for offences not committed, and public humiliation. The frequency of communal riots in which they are invariably cast as *agents provocateurs*, even when the evidence points to others, is much too high and far from random. The CAA is a blatant denial of their citizenship, as religion is the determining criterion. So, as of now, Muslims' trust in the police is likely to be at rock bottom.

A key issue in the context of the caste hierarchy is whether inter-caste rivalry – especially among lower castes struggling to catch up with upper castes – can be mitigated through attitudinal and behavioural changes, something that is easier said than done. Affirmative action has benefited lower castes but has failed to mainstream them. Unfortunately, the dominant *Hindutva* ideology, which disdains lower castes such as the Dalits, seems an insurmountable barrier. If only politics did not matter as much as it does, the mainstreaming of lower castes would be much easier.

Affluence at both the household and state levels is deeply associated with rapid improvements in wellbeing. If growth is inclusive, so that no group is left behind, the pay-off in terms of higher wellbeing would be substantial. Often economic growth is associated with greater income inequality, but the strategy outlined earlier, in which agricultural productivity and non-farm activities in small towns are promoted, may help reduce inequality. In addition, as argued earlier, trust in the police is likely to be enhanced if widespread corruption among them is checked through better monitoring of their performance and they are held to account, with severe punishment for malfeasance. Along with better infrastructure, incentives for superior performance and freedom of the press would make a significant difference to both trust in the police and improvements in wellbeing.

8 Concluding observations

Although much has already been said about police reforms and trust in the police and its role in the improvement of SWB, a few reforms that are specific to enhancing trust in the police are sketched below. The context matters. Although our analysis and the policy

implications of our findings reflect the state of affairs during a phase of the UPA regime, it is important to highlight them in the present context, which has seen dramatic changes in governance and the erosion of autonomy of state governments principally in states ruled by the BJP and its regional allies. Since law and order is a state subject, unfinished police reforms during the previous UPA regime and those highlighted by our analysis are addressed below. To avoid overlap with the previous section, our focus here is on specific police reforms. To limit the discussion to the period analysed would thus deprive us of the opportunity to examine their feasibility in the present regime.

Opinions are divided on whether it is necessary to register an FIR without a prior investigation. Although it is not mandatory, three-fifths of the civil police personnel believe that, no matter how serious a crime, there should be a preliminary investigation before registering an FIR, as opposed to direct registration. Given the corruption in the police, it should be mandatory to allow direct registration of an FIR.

Preventing, refusing and delaying the process of FIR and complaint registration impede access to justice at the very beginning. In many cases, victims do not report a crime to the police because of a fear of secondary victimisation, lengthy and embarrassing trial proceedings and uncertainty about whether the perpetrator will be punished. These challenges result in mistrust of the police. Findings from the *Status of Policing in India Report* (Common Cause & Lokniti, 2018) suggest that, among those who had any kind of contact with the police in the past four to five years, three-fifths of the respondents were able to successfully register their FIR/complaint and about 24% were unable to do so. Furthermore, registration of an FIR corresponded with higher satisfaction levels with the police.

Opinions on police investigations of crimes such as murder, assault and robbery were very mixed. On the one hand, citizens felt that such investigations were satisfactory and proper (37%). On the other, about 29% stated that such investigations were not up to the mark and often faulty in nature; nearly 7% reported that police harassed people during investigation and 8% believed the police did not carry out needed inspections. Experience of harassment by the police during investigations was most likely to be reported by Hindu Scheduled Tribes, Scheduled Castes and Muslims, and by those residing in small cities (Common Cause & Lokniti, 2018).

Instead of promptly investigating the illegal killing of cows and prosecuting the perpetrators, in at least a third of the reported cases, the police have filed complaints against victims' family members and associates under laws banning cow slaughter. Counter-complaints against witnesses and family members have often scared them away from pursuing justice. In some cases, witnesses turned hostile because of intimidation both by the authorities and the accused (Human Rights Watch, 2019).

Three recent episodes offer a striking contrast.

Police wreaked havoc in Aligarh Muslim University (AMU) on 15 December 2020, the same evening when Delhi Police stormed the campus of Jamia Milia Islamia University, causing serious injuries to several students. Ironically, the area commandant of the

Rapid Action Force deployed during the operation filed an FIR against 1,000 unnamed AMU students on 23 December (Gul, 2020). But in Jawaharlal Nehru University, a few days later, the same Delhi Police ignored several Police ControlRoom (PCR) calls from the faculty and administration and waited for hours for written permission while masked assailants rampaged through the campus.

The contrast is stark. In the first instance, the use of force was excessive, while in the second the loss of precious time was egregious (Mudgal, 2020).

A recent comment in *The Economist* is illuminating.¹⁴

While an average case takes 5 years to settle in the lower courts, in recent weeks justice has been delivered within a few days or a little longer. A case in point is ‘bulldozer’ justice in Jahangirpuri, a working-class part of Delhi, where a riot broke out in mid-April after Hindu youths carrying swords, guns and clubs on a so-called religious procession stopped outside a mosque to insult the fasting worshippers inside. No one was badly hurt in the ensuing stone-throwing, but three days later authorities, citing building violations, sent in bulldozers to smash property belonging to suspected troublemakers (mostly Muslims). Such ‘bulldozer justice’ is becoming increasingly common. In recent months religious processions strikingly similar to the one in Jahangirpuri have sparked mini-riots in towns and villages across eight north Indian states.

The National Police Commission recommended the creation of a PCA at the state level, headed by a retired judge of the Supreme Court or high court chosen out of a panel of names proposed by the chief justice of the state in 2006. A similar structure was envisaged for the PCA at the district level. The state PCA would look into murder, rape and other serious misconduct committed by the police, while the district PCA would look into extortion and incidents involving serious abuse of authority. The most important part of this decision was that the PCA’s recommendations would be binding on the state. Regrettably, affidavits filed in the Supreme Court showed that not a single state or union territory has implemented the PCA’s provisions (Gonsalves, 2021). A short answer is the unholy nexus between corrupt politicians, bureaucrats and the police. While this precedes the NDA, it has taken a more virulent form in the present context. Yet the inaction of the police and excessive brutality against minorities have taken a heavy toll of lives while state governments either look the other way or resort to evasive tactics such as cumbersome, inconclusive investigations.

The suppression of dissent and of independent media reports, and the forcing through of anti-minority legislation (such as the Citizen Amendment Act, 2019), which has been brutally implemented by the police with only murmurs of protest from the judiciary, are all as pervasive as they are pernicious.

¹⁴ ‘Policing fast and slow: justice in India is growing ever more partisan’. *The Economist*. 30 April 2022.

To conclude, even at the risk of being banal, it is unclear whether and how this unholy nexus will be broken.

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