

Verme, Paolo

Article

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Relative deprivation in the labor market

The choice of reference group crucially determines subjective deprivation and thus affects labor market behavior

Keywords: objective deprivation, subjective deprivation, unemployment, social discontent

ELEVATOR PITCH

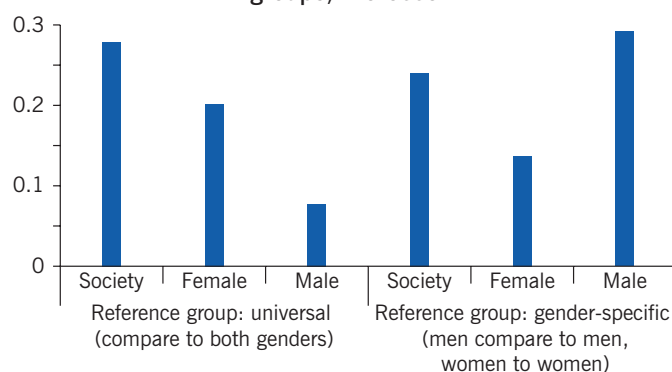
Why do different population groups (e.g. rural vs. urban, youth vs. elderly and men vs. women) experience the same objective labor status differently? One hypothesis is that people are more concerned with relative deprivation than objective deprivation and they value their own status relative to the status of their peers—the reference group. One way to test this hypothesis in the labor market is to measure individual differences in labor status while controlling for characteristics that define population groups. This measure is called “relative labor deprivation” and can help policymakers to better understand how labor claims are generated.

KEY FINDINGS

Pros

- + Relative labor deprivation offers one viable approach to quantify feelings of deprivation across population groups.
- + The measure is simple and grounded in a long tradition of studies on relative deprivation across the social sciences.
- + Relative labor deprivation recognizes that individuals derive their own labor related frustrations by comparing their own labor conditions with those of their peers.
- + Policymakers can use relative labor deprivation to distinguish between objective and subjective feelings of deprivation in the labor market.

Relative labor deprivation (RLD) with different reference groups, Morocco



Note: RLD score between 0 (min) and 1 (max).

Source: [1].

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Cons

- Interpretation of the relative labor deprivation measure is not always straightforward, requiring knowledge of the relative deprivation concept and basic econometric skills.
- During early stages of research, relative labor deprivation should normally be accompanied by surveys that measure subjective deprivations in the labor market to validate results.
- Relative labor deprivation is based on assumptions that do not necessarily hold in all cases (e.g. when differential treatment involves non-peer groups).
- Relative labor deprivation is highly sensitive to model specification and is reliant on the researcher’s capacity to identify the variables people use to define their peer groups.

AUTHOR’S MAIN MESSAGE

It is argued that an “equitable social planner” should focus on objective deprivations as opposed to subjective deprivations. Yet, policymakers are naturally inclined to satisfy demands of those groups who feel more deprived and may complain more irrespective of whether these claims correspond to objective needs. For policymakers, it is therefore important to understand how the gap between objective and subjective deprivations is formed. Relative labor deprivation provides a simple measure to account for this gap by building on the concepts of relative deprivation and reference groups.

MOTIVATION

Participating in the labor market, being employed, and enjoying fair pay and non-discrimination are important elements of well-being. They provide a sense of purpose and social inclusion that contribute to mental stability, self-confidence, and productivity. Conversely, labor market exclusion, unemployment, low pay, and discrimination lead to a sense of emptiness, loss of self-confidence, psychological distress, and social marginalization.

The degree to which these outcomes affect individuals seems to vary across population groups. Urban dwellers tend to complain more than rural dwellers when they lose their job. Young people have generally lower expectations of finding a job compared to middle-aged people. Immigrants tend to complain less than local residents about unemployment or low pay. This phenomenon is most evident across gender groups, where women suffer from lower participation rates and lower pay than men but tend to complain less about these conditions (see, for example, [1] for Morocco and [2] for the UK).

What can explain these asymmetric behaviors across population groups? One hypothesis is that relative deprivation plays a role in shaping feelings about labor status. Relative deprivation states that individuals derive their sense of deprivation from a comparison of their own condition with that of a restricted reference group. Performing better than the reference group leads to satisfaction and, vice-versa, performing worse leads to deprivation. The use of different reference groups could then explain differences in subjective deprivation across groups. Indeed, a review of almost 100 studies on social discontent provided strong evidence that relative deprivation plays an important role in generating feelings of subjective deprivation and explaining social discontent [3]. This should be of interest to the social planner concerned about maximizing social welfare and to policymakers engaged in labor market reforms.

DISCUSSION OF PROS AND CONS

The concept and measure of relative labor deprivation (RLD) is derived from the extended literature on relative deprivation. Relative deprivation states that feelings of deprivation emerge when one compares one's own situation with the situation of others, an idea put forward in different ways by Adam Smith in *The Wealth of Nations* [4] and by Karl Marx in *Wage-Labor and Capital* [5]. Two further studies contributed to the formalization of the concept of relative deprivation by introducing the notion of reference groups and by discussing the importance of the reference group in generating feelings of deprivation [6], [7]. More recently, the literature on relative deprivation focused on finding a quantitative measure of relative deprivation and a mechanism for the selection of the reference group.

Understanding relative deprivation

A pioneering study from the late 1970s was the first to offer a simple interpretation and quantification of relative deprivation by devising a relative deprivation index based on income data [8]. According to this study, relative deprivation can be measured as the sum of the distances between one's own income and the incomes of all richer individuals. For example: If three individuals have incomes of 2, 6, and 7 respectively, the relative

deprivation of the first individual would be $(6 - 2) + (7 - 2) = 9$, or $9 \div 3 = 3$ if this measure is normalized by the population. Conversely, one can measure relative satisfaction of the third individual as $(7 - 6) + (7 - 2) = 6$ (normalized to $6 \div 3 = 2$). The assumption is that individuals compare themselves with richer (or poorer) individuals and derive a sense of deprivation (satisfaction) from these comparisons. Lower values indicate less deprivation within the population, with the minimum being zero, essentially indicating equality among the measured individuals. This idea has been further extended in economics over the past few decades and today represents an established tradition that is rich in theoretical and empirical contributions.

By design, the relative deprivation measure used in [8] considers the reference group to be all richer individuals. By taking this approach, i.e. using a whole population group, the measure ignores the issue of selection based on personal characteristics, which offers little insight into how the reference group is selected. More recently, this issue has been explored via several attempts to include into quantitative measures of relative deprivation a selection mechanism for the reference group [9]. The underlying idea is that individuals or groups of individuals select their peers and reference group based on their own socio-economic characteristics. In essence, one should expect urban dwellers to compare themselves with urban rather than rural dwellers, and young people would be expected to compare themselves with other young rather than old people.

Relative deprivation has also found numerous applications in labor market contexts beyond incomes. One study developed the very concept of relative deprivation by examining work promotions across US army corps during the Second World War [6]. They found that individuals in the military police were more satisfied with their promotions than their colleagues in the air force, despite the fact that promotions were awarded much faster in the air force. They explained this paradox by the fact that military police compared their success in the work place with other members of their own corps, not with members of other corps. Another study on British workers looked at job satisfaction and relative income and found satisfaction to be inversely proportional to the income of the reference group [2]. The larger the income gap between workers' income and the reference group's income, the unhappier workers were found to be, irrespective of their absolute income. A study on intergenerational occupational mobility among male manual workers in the US showed that workers' satisfaction with their own occupational status largely depended on their status relative to the status of other males in their family, rather than on the workers' absolute status [10]. And yet another study on job satisfaction and wages among Chilean workers showed that job satisfaction is mainly driven by relative wages (relative to the reference group) as opposed to absolute wages [11].

Measuring relative deprivation in the labor market

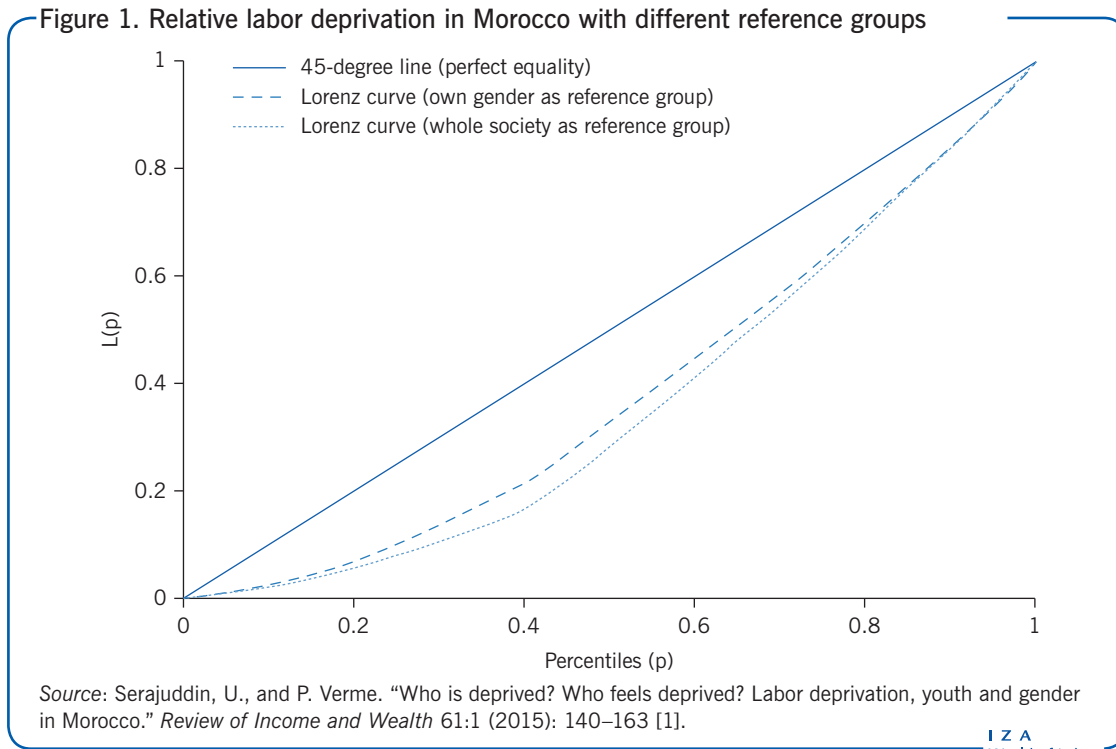
Two recent studies provided a more general framework to measure relative deprivation in a labor market context, addressing some of the empirical limitations related to the use of categorical variables and to the measurement of the reference group [1], [12]. Measuring relative deprivation implies quantifying feelings of deprivation for each individual on a continuous scale, whereas joblessness or unemployment statuses are binary (i.e. 0-1) variables that cannot serve this purpose. It is also problematic to have a measure of relative deprivation that confines inter-personal comparisons to the reference group.

These two issues can be overcome following a two-step procedure. *Expected* joblessness or unemployment is first estimated econometrically based on a number of personal characteristics, such as age or gender, believed to be used by people for inter-personal comparisons. The labor outcome predicted in this way (a continuous probability value included between 0 and 1) is then considered a measure of the labor outcome that individuals would expect to have if all people with the same characteristics were treated equally. Subsequently, by taking the difference between *actual* labor outcome and the *expected* labor outcome (the residual) and normalizing it between 0 and 1, a simple measure of deprivation is achieved, which varies between 0 and 1. To obtain the RLD individual measure, it is further assumed that individuals compare their own deprivation with the deprivation of those who are better off (those who have less deprivation, or a smaller residual). This is done by taking the sum of all the differences between an individual's normalized residual and the normalized residuals of all other better-ranked individuals (those with smaller deprivation scores). Finally, and for comparability across population groups, the resulting score is divided by the mean of the normalized residuals and by the population. The interpretation of RLD is that individuals take into account their own subjective deprivation in addition to the subjective deprivation of others who are better off, which generates more deprivation.

Some examples of applying the relative labor deprivation measure

To illustrate the use of the RLD measure two different examples are provided. Figure 1 presents the Lorenz curves of the RLD score estimated across genders in Morocco (see the illustration on page 1 for the actual scores). The Lorenz curves measure the degree of inequality across individuals in a society. The further the curves are from the 45-degree line, the more unequal a society is. These curves are constructed using the RLD individual score under two scenarios. In the first scenario, women and men compare their own situation of labor deprivation with that of everyone else in society (dotted curve). In the second scenario, women and men compare their labor situation with the situation of other people of their own gender only (dashed curve). The figure shows that when it is assumed that inter-personal comparisons are only within genders (women with women and men with men), the degree of inequality and deprivation for the society is lower in comparison to a situation in which men and women compare themselves with everyone (i.e. all genders). This is because, in the former case, inter-gender inequalities are not taken into account.

This could explain why, for example, women feel less deprived than men in Morocco when encountering the same labor deprivations such as unemployment or lower pay [1]. If women tend to compare themselves with other women rather than men, their own sense of labor deprivation is smaller because most inequalities in the labor market exist across genders and not within genders. Therefore, women would feel less deprived, not because they are less objectively deprived, but because their subjective deprivation is driven by comparisons they make with other women, rather than with both women and men (or only men). Indeed, subjective surveys in Morocco have confirmed that women attribute more importance to males' unemployment than females' and are less distressed about joblessness than men [1].



As a second example, consider Figure 2. In this case, the author estimated the standardized residuals of being jobless (i.e. people in working age either inactive or unemployed) across three groups of people in Mersin, a city in southern Turkey [12]. The groups are divided according to their place of origin: internal migrants originating from the east of Turkey, internal migrants originating from the west of Turkey, and non-migrants. The values displayed in Figure 2 are the shares (totaling 100) of the difference between *actual* and *predicted* deprivation/satisfaction scores (the residuals) divided into three classes. The first class includes those individuals for whom *actual* labor status is higher than the *predicted* labor status, as estimated based on their personal characteristics. This group is called “privileged” because they occupy a position that is better than what they should expect given their personal characteristics (this group could also be labelled “relatively satisfied”). The second group includes those for whom *actual* and *predicted* statuses are the same. These are labelled as “normal”. The third group includes those whose *actual* labor status is lower than the *predicted* one. These are labelled as “deprived” because they occupy a position that is worse than what is predicted when comparing their personal characteristics with the characteristics of their peers.

As shown in Figure 2, eastern and western migrants have lower shares of privileged and higher shares of deprived compared to non-migrants. This shows that, individual characteristics being equal, migrants are disadvantaged compared to non-migrants. However, whether migrants feel more or less deprived than non-migrants will depend on the reference group. If eastern migrants use only other eastern migrants as their reference group, they will see that differences between themselves and the reference group are small and they would not feel very deprived. On the other hand, if migrants compare themselves with the whole society, their feelings of deprivation would be much higher.

Figure 2. Deprivation and privileges between migrants and non-migrants

	<i>Privileged</i> (%)	<i>Normal</i> (%)	<i>Deprived</i> (%)	<i>Total</i> (%)
Eastern migrants	14.9	64.8	20.3	100
Western migrants	16.1	62.5	21.4	100
Non-migrants	20.9	64.2	14.9	100

Note: “Privileged” are individuals whose labor status is better than their expected labor status estimated econometrically based on personal characteristics. “Normal” are those whose labor status corresponds to the expected labor status. “Deprived” are those whose labor status is lower than the expected one.

Source: Author’s own calculations based on Verme, P. “Relative labour deprivation and internal migration in Turkey.” *Journal of Economic Inequality* 8:4 (2010): 391–408 [10].

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LIMITATIONS AND GAPS

The concept of relative deprivation is now well established in economics from both a theoretical and empirical perspective. It has also been applied extensively to labor contexts as diverse as career advancement, wages and job satisfaction [13]. More recently, the concept of RLD has been advanced to formalize the use of the relative deprivation concept in a labor context [1], [12]. The first paper resolved the questions of categorical variables and reference groups [1]. The second paper validated the RLD measure with qualitative surveys [12].

However, there are still two important limitations to the RLD approach. The first relates to the specification of the prediction equation. This equation requires identifying variables that accurately capture the socio-economic characteristics that the population of interest uses to compare itself with others. Evidently, this is a normative choice that relies on the ability of the researcher and can lead to misspecification of the prediction equation. The second relates to the assumption that individuals compare themselves with their peers and derive their sense of deprivation exclusively from this comparison. In some cases, this assumption may be too restrictive. For example, in countries that experience mass immigration and where immigrants compete for jobs with natives, the sense of deprivation may arise from the comparison with non-peers (natives and immigrants in this case). Hence, the RLD measure cannot be used without knowledge of the specific population studied and is not applicable in all possible contexts. The variables of the prediction equation have to be justified on normative grounds and the comparison group may be sought among non-peers.

The interpretation of the RLD measure also requires some words of caution. The measure represents a person’s degree of inequality from peers that is not explained by personal characteristics. If a person uses age, gender, and education to compare with others and has the same age, gender, and education of others but a lower labor status (such as a lower wage), this is expected to generate feelings of deprivation that are measured by RLD. However, in real life and when looking at others, people use sets of indicators that may vary across time and groups. For example, young people may focus more on education whereas older people may focus more on age. It is also entirely possible that the same individuals use different criteria when comparing themselves with co-workers as opposed to friends and neighbors.

The potential for application of the RLD measure is vast, but users should be very cautious when applying it and when deriving policy implications from it. A good approach is to try to validate results on RLD with surveys that explicitly ask respondents about their attitudes towards deprivations. For example, the RLD measure for Morocco indicated that women were not likely to complain about labor market participation despite the exceptional deprivation they face in this dimension. An opinion survey on Morocco confirmed that women did not suffer particularly from this deprivation because they accepted the condition of non-participation in the labor market as a normal condition for their gender, thus revealing that their sense of deprivation derived from labor market exclusion was moderate because of within gender rather than cross-gender comparisons.

Similarly to indicators of multi-dimensional deprivation such as multidimensional poverty, the RLD measure could be extended to include multiple dimensions, for example, by combining wages and occupation status. This is a vast topic that could not be covered in this article, and has not yet been addressed by researchers in general, but offers a good start for future research.

SUMMARY AND POLICY ADVICE

People derive their own sense of deprivation from a comparison with others. This has been a research hypothesis since the times of Adam Smith and Karl Marx and is now a well-established thesis across the social sciences. This fact cannot be ignored in economics research because it helps to explain why different groups of people experience objective deprivations differently. Relative deprivation is therefore an important concept that can help the advancement of behavioral economics.

The concept of relative deprivation has been applied extensively in the context of labor market studies and the RLD measure provides a generalized framework for these contributions. It can help to explain why different individuals or groups of individuals who face identical labor market conditions may feel differently about these conditions. For example, a recent paper has shown that men and women in Morocco have a different perception of the same labor market status [1]. Women tend to perceive joblessness as a standard condition for their gender. They do not see being jobless as a particularly painful condition, whereas they believe that joblessness among males is harder. In other words, women in Morocco have a gender-specific view of their jobless status and derive their sense of labor deprivation from the comparison with other women, not men. The RLD measure can help to capture this idea.

The RLD measure can help policymakers to develop labor market policies that are cognizant of people's behavioral and cultural aspects. For example, an emerging economy that is growing quickly would require their labor force to grow swiftly as well. This can be done by either importing labor from abroad or by increasing labor force participation, particularly among women in cases where this is low. In countries where women are not expected to work for cultural or historical reasons, an increase in labor demand may not be sufficient to encourage women to join the labor force in greater numbers. As a result, policies specifically aimed at addressing cultural stereotypes about the role of women may be necessary. This was the case, for example, during the Second World War. When governments faced severe labor shortages due to the draft of young male soldiers, they responded by promoting patriotism as a means to attract women into the labor force,

even in traditionally male-dominated sectors like heavy industry. In this case, the call to patriotism was able to overcome cultural constraints.

Knowledge of how labor deprivation feelings are generated can help policymakers to understand why certain individuals or groups complain more than others. This, in turn, can enable policymakers to design policies that are less biased towards groups that complain more, and instead create more equitable policy. For example, urban taxi drivers can be very vocal in protecting their jobs, and also very disruptive in their collective actions. Rural farmers, on the other hand, have more difficulty voicing their concerns and organizing large protests that can be heard by the government and felt by consumers. Yet, the risks and deprivations faced by rural farmers may be greater than those faced by urban taxi drivers. This is a case where the objectives of a politician and an equitable social planner may diverge. Irrespective of the policy action that is eventually taken, it is important for policymakers to be aware of the mismatch between objective and subjective deprivations.

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Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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Further reading

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