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ABSTRACT

Targeting Social Assistance in a Transition Economy: The Mahallas in Uzbekistan*

Falling output and living standards have pushed countries in transition from the socialist system to reconsider how best to target public resources on those in need. The paper investigates the workings of a new social assistance benefit in Uzbekistan, the largest of the former Soviet Central Asian republics, administered by community organizations, the Mahallas. Data are used from a 1995 household survey to assess the scheme's success in targeting the most vulnerable households, using a variety of indicators including income, durable goods ownership, agricultural assets, employment status and the anthropometric status of children. The separate probabilities of knowledge of the scheme, application for benefit and award are modelled.

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NON-TECHNICAL SUMMARY

Countries in transition from the planned system have had to reconsider how best to target public resources on those in need. New risks to the population have appeared, such as open unemployment. The state's tax revenue and hence ability to provide comprehensive safety nets is often reduced. Systems of state transfers inherited from the communist period have frequently proven inappropriate or have been difficult to adapt. A common hole in the pre-reform safety net was a social assistance scheme providing support of 'last resort', in part due to an official denial that poverty could exist under communism.

The paper illustrates several issues involved in designing new social assistance schemes in transition economies, including: (i) the definition of household resources and hence 'need'; (ii) the choice of agent to administer the scheme; and (iii) the reaction of the populace, the potential clients, to targeted social assistance.

The example used is a scheme introduced in 1994 in the Central Asian republic of Uzbekistan. This country is the third largest former Soviet republic, with well over 20 million inhabitants and it was one of the poorest republics during the Soviet era. The new social assistance scheme, administered by traditional local community groups, the 'Mahallas', is intended to be of particular benefit to families with children. At least one in ten households received support from the scheme in 1997. The Mahalla assistance scheme provides an interesting example of a highly decentralized and flexible system of benefit targeting, with lessons for both other transition economies and elsewhere. While the scheme contains clear guidelines to the Mahallas, there is no formal set of necessary or sufficient conditions for benefit.

The scheme is investigated using a household survey of living conditions in Uzbekistan carried out in 1995. The survey contains a variety of indicators of resources and need, including income, durable goods ownership, agricultural assets, employment status and the nutritional status of children. It also collected information on households' knowledge of the Mahalla assistance scheme, on their applications for benefit and on awards made, thus allowing the process of receiving benefit to be broken down into its various stages.

Analysis of the survey data shows that the Mahalla scheme does deliver benefit much more frequently to less well off households than to better off households. (This is the case both when household welfare is measured by income alone and when it is summarized by a range of household characteristics.) In this sense, the results are a positive demonstration of the potential for 'informally' run and flexible schemes of social assistance.

Some less satisfactory results also emerge, however. First, the amounts of benefit paid to those households to whom an award is made appear unrelated to observed measures of household wellbeing. Second, when a full set of controls for other factors is used, the probability of receipt of benefit appears unrelated to cash income or to children's nutritional status, both obvious candidates as partial indicators of household welfare. Third, while the scheme does favour children, female-headed households and the unemployed, which is to be welcomed, it also appears to favour rural areas and ethnic Central Asian households (even when controlling for other factors), the justification for which is less obvious.

The analysis of claim behaviour by households suggests that self-targeting in Uzbekistan is important. Self-targeting reduces substantially the probability of claims from high welfare households. And, conditional on a claim being made, the Mahallas are very likely to award benefit to low welfare households. But the results also suggest that more claims need to be encouraged from low welfare households, and that in deciding on awards the Mahallas are relatively generous towards high welfare households.

The paper concludes by emphasizing that a key design issue in any genuinely decentralized system of social assistance is the provision of the necessary funds to the institution responsible for administering the scheme. The Uzbek scheme is not a model example of adequate and transparent funding, and horizontal equity – equal treatment to households in equal circumstances – is threatened as a result. It may be that more attention to the appropriate provision of funds to different Mahallas would have as much or more effect on targeting as would further monitoring by the central authorities of the Mahallas' decisions on the allocation of those funds that they do receive.

1. Introduction

Falling output and living standards have pushed countries in transition from the planned system to re-consider how best to target public resources on those in need. Not only have new risks to the population appeared, such as open unemployment, but systems of state support inherited from the pre-reform period have often proven inappropriate or difficult to adapt. In particular, social assistance schemes providing support of “last resort” were under-developed under communism, something associated in part with an official denial for many years that poverty could exist (Atkinson and Micklewright, 1992).

The development of targeted social assistance schemes in transition economies involves several issues that have been addressed in consideration of targeting in other parts of the world (e.g. Atkinson, 1995, Besley and Kanbur, 1993, Grosh, 1994). But the particular nature of transition gives them heightened importance in the former planned economies.

First, suitable indicators of household resources, and hence need, must be defined. Cash income from employment and state transfers, which was used, for example, as the basis for assessing eligibility for an allowance paid to large families in the former USSR, is too restrictive a definition of household welfare. Assessment and verification of income in transition economies are made harder by growing self-employment and the loosening of formal controls and monitoring of economic activity. A focus on cash income also excludes income in kind, which may have a big impact on household welfare. A notable source of in-kind income in a number of Eastern European countries and former Soviet republics is agricultural production on a household’s land.¹

Second, agents to administer targeted assistance need to be chosen. For obvious reasons, administration of state benefits cannot continue to be a function of state-owned enterprises, as was often the case in the past. The goal of reducing public sector employment conflicts with any increase in the state administrative

¹ This is widely documented in World Bank sponsored surveys in the region. Cash income from state-owned organizations and state transfers represented less than two-thirds of household income in Russia in Autumn 1995 (Popkin and Mroz, 1996). Income in kind from agricultural production was estimated to account on average for over a fifth of household income in Kyrgyzstan in Autumn 1993 (Falkingham and Ackland, 1994, Table 17a) and about a quarter in Azerbaijan in 1995 (World Bank, 1997, Table 1.9).

apparatus for benefit assessment and payment. And the desire to decentralize government activity, apparent in an extreme form in some transition economies, risks the creation of benefit systems that do not satisfy a criterion of horizontal equity, on account of both variation in administrative capacity and in local financial resources.

Third, the reaction of the populace, the potential clients, unused to targeted social assistance, is unknown *a priori*. Will knowledge of a new scheme spread quickly? Will the benefit agency be swamped with frivolous applications, resulting in high administration costs, or will households recognize the rules of the scheme in deciding whether to apply, implying an important element of self-targeting? Conversely, and just as important, will eligible households take up their entitlement?

Finally, the design of the scheme needs to avoid providing disincentives to work effort and hence to moving off benefit, so as both to preserve public resources that are especially scarce at a time of falling output and to avoid development of welfare dependency that would be detrimental to the resumption of growth.

This paper illustrates these issues, found in varying degrees in all transition economies, through an investigation of a system of targeted social assistance in the Central Asian republic of Uzbekistan. This predominantly rural country is the third largest former Soviet republic, with 23 million inhabitants in 1996, and was one of the poorest in the USSR at the end of the 1980s.² Uzbekistan is notable for its innovative approach to social assistance. In late 1994 a new scheme was introduced, to be administered by traditional pre-Soviet local community groups, the “Mahallas”. These local groups elect a chairman and a committee of “elders”, who can decide on the basis of their local knowledge which are the most needy families in the community, and, within certain limits, how much support they deserve. Guidelines instruct the Mahallas on what indicators of living standards to take into account, which are varied, but no rigid formula is laid down. The system purports to tailor assistance more accurately to need than would alternatives and to avoid the

² Official budget survey data for 1989 show over 40 percent of the Uzbek population with per capita income below the semi-official all-Union poverty line compared to 14 percent for the USSR as a whole; the Uzbek poor, on this basis, accounted for over a quarter of the all-Union total, more than in any other republic (Atkinson and Micklewright, 1992, Table 8.4 and Figure 8.10). The characteristics of Uzbekistan and the other Central Asian republics are described in Falkingham et al. (1997) and UNICEF (1998, chapter 1) and include an inheritance of almost universal literacy from the Soviet period but many of the demographic characteristics of other Asian countries, including a young and rapidly expanding population.

development of additional state administration.

The Mahalla scheme has attracted attention as a possible model for replication in other former Soviet republics that minimizes some of the problems with targeted assistance described above. The Uzbek government certainly appears to be pleased with its operation and has decided to allocate at least one other benefit through the Mahallas. However, there seems to have been no systematic evaluation of the scheme's operation, and the details of its design suggest that errors of inclusion and exclusion in coverage may be important. We try to provide such an evaluation and in doing so contribute to the development of a framework for approaching the issues elsewhere.

The rest of the paper is organized as follows. Section 2 describes briefly the role played by the Mahallas in Uzbek society before looking at the rules governing the social assistance scheme introduced in 1994, outlining the potential advantages and disadvantages inherent in its design in the light of the literature on targeting. Section 3 describes the data we use to assess the scheme's ability to deliver benefit to the most vulnerable households – a household survey of living conditions in Uzbekistan carried out in June 1995 – and provides an initial picture of receipt. The survey contains a variety of indicators of resources and need, including income, durable goods ownership, agricultural assets, employment status, and nutritional status of children. It also contains information on households' knowledge of the scheme, on their applications for benefit, and on awards made, allowing the process of receiving benefit to be broken down into its various stages.

Section 4 focuses on the overall incidence of benefit, estimating a binary model for receipt among all households in the survey. This allows predicted probabilities of benefit to be calculated for households with vectors of high and low welfare characteristics. Section 5 exploits the information collected on the process of receiving benefit – rare in a survey of this type – by modelling the separate probabilities of knowledge of the scheme, of application for benefit, and of award. This allows the degree of targeting at each stage in the process of benefit delivery to be revealed, including the important issue of self-targeting through the decision to claim. Section 6 concludes, pointing to some generalizable results in the light of the potential problems of targeting social assistance in transition economies outlined above.

2. The Uzbek Mahallas and the New Social Assistance Scheme

The social assistance scheme administered by the Mahallas was started in the Autumn of 1994. This coincided with the removal of food subsidies, and the scheme represented the first attempt in Uzbekistan in the post-Soviet period to provide the targeted assistance of last resort that the Introduction noted was largely missing from the inherited social safety net of the transition economies. Administrative data record 9 percent of households receiving support in the last quarter of 1994, 21 percent in 1995, 15 percent in 1996, and 17 percent in 1997. There appears to be some double counting in these figures due to repeat awards to the same households. Allowing for this, figures for 1997 imply that only 11 percent of all households received an award at some time during the year. The level of support is modest. Among those households in the 1995 survey used later in the paper, benefit averaged a third of total cash income received or due from the previous month.

(i) The Mahallas in Uzbek society

Before describing the social assistance scheme in more detail, some appreciation is needed of the place of the Mahallas in Uzbek society. The Mahallas are officially “neighbourhood committees”, or “organs of self-administration of citizens”. They have existed for centuries in the Uzbek and Tajik cultures and are based around a group of elders who try to solve social problems and conflicts within the community. Although the Mahalla is not itself a religious organization, it seems to promote traditional Islamic ideas on social roles and behaviour.

The Mahallas are supposed to look after the poor in the community, not only through their new role in administering social assistance on behalf of the State but by ensuring that children are cared for, that the elderly have help, etc. Their function in promoting social control and cohesion is exercised in, for example, the way in which they may try to dissuade married couples from divorce. Mahallas help organize weddings and funerals, and some have committees responsible for women, youth, the self-employed, and so on.

The Mahallas managed to survive during the Soviet period, although they

were always looked upon with some suspicion. The relationship with the State has changed notably since the break-up of the USSR, and an effort has been made to partially incorporate the Mahallas into the state system. They are now being used as an instrument of social control and cohesion that can in many ways compensate for the loss of the communist party network, which used to perform this function. The use of the Mahallas to channel social benefits can be seen as part of this trend. The chairman and secretary of each Mahalla are now paid a salary by the local authorities. Candidates for Mahalla chairman have to be approved by local government offices.

There are about 12,000 Mahallas, with the number of households in each ranging from about 150 to 1,500, and averaging about 400. Although the Mahalla as an institution has existed for a long time, many Mahallas are in fact recent creations, particularly in large urban areas where they have taken over from the *domkom* or “housing committee” of big apartment blocks.³ These Mahallas therefore lack any inheritance of a role based on traditional Uzbek culture. The chairman and the members of the committee at the head of each Mahalla are in principle elected by the local population. There are claims, however, that in the majority of instances, the members are simply appointed by the elders of the Mahalla, and that women very rarely participate in the committee (Poliakov, 1992, p77).⁴

(ii) Financing and targeting

A key issue in any decentralized system of social assistance is the origin of the funds used by the local bodies charged with allocating benefit.

The Mahallas in Uzbekistan receive funds for social assistance almost entirely from the main republican (central) budget. The oblasts (regions) can in principle supplement these funds, but in practice do not have the financial means to do so to any significant degree.⁵ The central funds are distributed at the beginning of the year by the Ministry of Finance through its oblast (region) and raion (sub-region)

³ Mahallas are also a new feature in the autonomous republic of Karakalpakstan, one of the three regions covered in our data.

⁴ One observer described to us that the traditional centre of the Mahalla was the *chaihona*, or tea-house, which is not noted for the presence of women.

⁵ Voluntary contributions can also in principle be made by enterprises and individuals to the Mahallas and are tax deductible up to a ceiling.

offices to the special accounts in savings banks held by each Mahalla. Once the funds are allocated, no further funds are available from central government even if a Mahalla claims to have insufficient money to cover applications for assistance. During the year, each Mahalla allocates assistance to households in the form of a cash transfer granted for three months (renewable) which should be between 1.5 and 3 times the minimum wage.

Unfortunately, the method of allocation of central funding is rather unclear. Funds are said to have initially been distributed to each Mahalla solely on the basis of the number of resident households, reflecting an intention to target the poorest families within each separate Mahalla, and not the poorest in the country as a whole. On this basis, the Mahallas in the richest areas should receive the same funding per resident family as those in the poorest. (We were told that on an informal basis the oblast or raion offices of the Ministry of Finance can re-distribute funds between Mahallas and that this has happened, although details of the frequency or amounts are not available.) Since 1994, however, central funds are said to have been allocated on the basis of the number of families receiving assistance in the previous year, although our investigation of aggregated data available at the regional level could not confirm this. (In principle, this mechanism could just perpetuate the uniform distribution of the first year if all Mahallas had disbursed their full initial allocation.)

(iii) Claim and award

To obtain assistance, households have either to apply themselves to their Mahalla (by making a written application) or to be recommended by the chairman of the Mahalla on his own initiative. A committee, comprising “the most respected citizens”, advisors to the Mahalla chairman, and representatives of certain state bodies (local offices of the Ministry of Labour, the Tax Inspectorate, and the Ministry of Finance), then decides whether a household should qualify for assistance, and, if so, what amount should be allocated. This process includes a visit to the applicant’s home, and a report is compiled on the composition of the household, the labour status of its members, its income and assets, and its access to and use of private agricultural plots. Following the committee’s recommendation, a decision is taken at the next

plenary session of the Mahalla, and the grounds for eligibility or refusal are recorded in a special register.

The Ministry of Labour is the government body responsible for the implementation of the scheme and issues instructions to the Mahalla committees on how to identify those households eligible for assistance. These instructions state that assistance should be given to:

“households which do not have the possibility to significantly increase their income by increasing the economic activity of household members.... Material assistance is given mainly to large households with many children, households of the unemployed, households in which the main bread winner is an invalid, who has fully or partly lost the ability to work, households who have lost their breadwinner, and pensioners living alone.”

However, the instructions go on to state that benefit can be given to a household of any type which “has sound reasons for receiving it”. The instructions provide guidelines for assessment of need, noting that the following information should be contained in the committee’s report:

“the composition of the household; the income received in the preceding month; an estimate of the household’s assets; the size of the agricultural plot and an evaluation of the possibility of receiving income from it.”

The instructions go further and specify that:

“In determining the assets of the family, the commission should look at expensive items, which are not vital for normal everyday survival of the family.... A note should be made of such property as a car, dacha plot, or other luxury items, i.e. those objects that are inaccessible to a large number of households claiming assistance, and which are not items of mass consumption.”

“Evaluation of the income which the households can make from the use of plots should be based on the type of use usually made of private land in the given locality... as a rule households with a plot, and which use it effectively, receive a significant share of income from it. Estimates show that the income from the use of 100 square meters should not be less than one minimum wage per month, and in many regions it is significantly more.”

As these details indicate, on the one hand the scheme contains firm guidelines and a considerable degree of formality – extensive information must be considered and recorded by the investigating committee during its inquiries. On the other hand, there is discretionary allocation – there are no circumstances stipulated in which committees must recommend award of benefit and indeed the instructions from the Ministry of Labour note that committees have the right to “independently determine principles and criteria” for awards.

(iv) Appraising the scheme's design

In comparison with standard income-tested or proxy means-tested programmes, the Mahalla scheme appears to present various advantages, which we relate to the four issues surrounding the design of targeted social assistance in transition economies that were outlined in the Introduction. We then turn to the apparent drawbacks of the scheme.

- The scheme takes into account a variety of aspects of living standards – household welfare is assumed to depend on a vector of characteristics rather than being measured by a single scalar in the form of cash income. (We comment further on this issue in Section 4.)
- The highly decentralized and flexible nature of the scheme exploits local knowledge of household circumstances that would be difficult to cover in a centrally codified scheme based on a means-test with a rigid formula. And the problem of asymmetric information between benefit administrators and households is therefore reduced, weakening the incentive of the latter to conceal their true circumstances. The discretion given to the Mahallas in principle allows community preferences to be reflected in the scheme's administration within each locality. And by using what is formally a non-governmental organization, the scheme may require less

bureaucracy, or at least imply lower administrative costs for the state budget, than would a scheme run directly by central or local government.

- Administration through community organizations should increase the diffusion of information about the scheme and an acceptance of its principles, both increasing the level of take-up from those genuinely in need and discouraging frivolous applications. Moreover, an application for benefit, or even knowledge of the scheme, is not in principle a pre-requisite for receipt – the Mahalla chairman can initiate an appraisal of eligibility for benefit without a household submitting a claim.
- There is an emphasis on the dynamics of poverty alleviation – help is to given to those households which “cannot significantly increase their income” rather than to just poor households *per se*, with awards being made only for a three month period before the process of claim and assessment must be repeated.

To set against these positive features, several obvious disadvantages in the scheme’s design can be noted. One way to think of these is that they result in “Type I” and “Type II” targeting errors – errors of exclusion and of inclusion – leading to a reduction in the scheme’s horizontal and vertical efficiency in targeting (Weisbrod, 1970). However, as Atkinson (1995) point outs, assessment of targeting efficiency along these lines depends on whether the objectives of policy are clear – and on how much agreement there is about those objectives. To talk of undercoverage, on the one hand, and leakage, on the other, is difficult when there are no clear, necessary and sufficient conditions for benefit that reflect official policy. Nor is there any official subsistence minimum in Uzbekistan (unlike, for example, in Russia) that would provide a yardstick that could be used in any assessment of the extent of poverty alleviation achieved by social assistance.⁶ However, notwithstanding these problems, some general observations are certainly possible.

- The downside of the discretion given to Mahallas within the decentralized organization of the scheme is that subjectivity and arbitrariness of a negative kind can creep in. Administrative skills in applying the rules may vary widely, especially

given the small average size of each Mahalla, thus reducing horizontal equity. The subjectivity of the procedure could result in discrimination against, for example, ethnic or religious minorities – either reflecting genuine majority preferences within the community that the central authority would like to suppress, or resulting from abuse of power by Mahalla officials. The lack of any appeal mechanism against the Mahalla's decision can be expected to aggravate all these problems.

- The system of allocating central funds to each Mahalla apparently takes little account of their average living standards and hence the variation in the demand for benefit. If households' need for support were to be judged on a basis of a common absolute living standard applied across the country, the allocation system as described would result in errors both of inclusion and exclusion.⁷ This is an obvious concern, unless one accepts the scheme's implicit focus on the reduction of intra-Mahalla variation in living standards. This focus may have something to recommend it in terms of fostering local solidarity, but it seems inappropriate as a principal aim for a national social assistance scheme.
- The administration of the scheme by a non-governmental organization does not imply that administration costs to the state are negligible. State employees participate in the committees investigating claims and the chairman and secretary of each of the 12,000 Mahalla have their salaries paid by the state, although it should be noted that their functions run beyond the administration of the social assistance scheme. Since 1997, officials from local Ministry of Labour offices have the task of monitoring the Mahallas' administration of the scheme, further adding to the state's costs.
- The public nature of the application and award process within a small community can have undesirable negative effects on the propensity to claim. Financial and psychic take-up costs, increasing the disutility of a claim, may lead some needy households not to apply, as well as those that are better-off whom one may be

⁶ Lanjouw (1997) considers whether a poverty line is important or not in the Central Asian context. One view expressed to us in Uzbekistan is that the absence of firm criteria for eligibility in the social assistance scheme permits the lack of an official subsistence minimum.

⁷ The apparent criterion for allocation of the number of *households* in each Mahalla, rather than the number of *individuals*, seems a further unfortunate feature. Any equivalence scale embodying a positive elasticity of needs with respect to household size will result in average needs being higher in Mahallas with higher average household size.

happy to see deterred.⁸ This general feature is true of any means-tested benefit, but the administration of the social assistance scheme in Uzbekistan by an organization with its roots in traditional culture can be expected to worsen the problem for some households just as it may ameliorate it for others. Slavic and other households not of Central Asian ethnicity, which form an important minority in large urban areas, may have a less positive attitude to the Mahallas than Uzbek households. Even among ethnic Uzbeks, attitudes to the Mahalla may vary.⁹

The apparent merits and de-merits of the scheme suggest that benefit could be well targeted or poorly targeted, depending on the balance between the two. In the rest of the paper we investigate what happens in practice.

3. The Receipt of Benefit from the Mahallas

Our empirical investigation of targeting focuses on use of household survey microdata, but we begin by examining the incidence of receipt and average income at the level of the region. Given the apparent system of distribution of funds for social assistance to the Mahallas, it is unclear whether we should expect to see any relationship between incidence and income (or any other indicator of living standards) at the regional level, assuming that the Mahallas spend all money allocated.

Figure 1 shows the proportion of households recorded in official data as receiving benefit in 1995 in each of the 14 regions of Uzbekistan, plotted against average per capita household cash income in June 1994 (as a proportion of the national average). The latter comes from a one-off survey of 20,000 households conducted by the state statistical office, a source of somewhat doubtful quality, but probably no worse than the much smaller regular budget survey (Coudouel et al., 1997).

The data show big regional variation in the proportion of households receiving assistance, ranging from 14 percent in Andijan to 37 percent in Navoi. The latter is

⁸ Atkinson (1995) questions whether take-up costs will be less for the poor as is often assumed in discussion of self-targeting.

⁹ Poliakov presents a view of the Mahallas that one can easily imagine discouraging take-up among less traditionally inclined households: "each Mahalla committee regulates the entire social and personal life of its territory. It shapes public opinion, policing observation of norms of behaviour derived from Sharia, Abat and local practices" (1992, pp77-78).

most likely a special case, and the next highest figure is in Karakalpakstan, a region bordering the Aral Sea and suffering from major environmental problems associated with the sea's retreat.¹⁰ Most indicators, including income, show Karakalpakstan to have the lowest living standards of any region in the country (Coudouel et al., 1997). The data point for Karakalpakstan contributes to the overall relationship between benefit incidence and average income, which is negative, but not very strong. The correlation coefficient is -0.38 if Navoi is excluded and rises to -0.53 if data for benefit receipt in 1996 are used. This relationship survives if we replace the proportion of households in receipt by the average benefit per resident household, the amounts in payment not only displaying little regional variation, but if anything being positively correlated with incidence.¹¹

That the pattern in Figure 1 is found, despite the apparent rules for distribution of funds, may be considered encouraging and evidence (albeit rather weak) against a null hypothesis of a poorly targeted system. It may also be an indication that the true allocation mechanism for funds to the Mahallas is more complicated than that said to be the case at the outset of the scheme, with some account being taken of regional living standards.

The source we use to investigate receipt of social assistance in detail is the joint European University Institute and University of Essex Survey in Uzbekistan (EESU), a survey of nearly 1,600 households carried out in three regions (oblasts) of Uzbekistan in June 1995. The three regions – Tashkent city, Fergana and Karakalpakstan – were chosen to represent different levels of living standards in the country. Most indicators suggest that household welfare in Tashkent city (which contains over two million people) is higher than in other regions (Coudouel et al., 1997); it is, for example, the region with the highest per capita income in Figure 1. The same indicators in general classify Fergana (an agricultural region with some large urban areas) in the middle of the spectrum, although this region is shown in Figure 1 with the second highest average income. Finally, as we have already noted, Karakalpakstan is considered the poorest region in the country.

The sample consists of about 500 households in each region, designed to be

¹⁰ Navoi is the only oblast where centrally allocated funds have apparently been supplemented locally. Rich mining enterprises are situated in this region. (The incidence of payments in 1996 in Navoi was in fact little more than the average, but the size of payments made was notably higher in this year.)

¹¹ In 8 of the 14 regions the average benefit awarded in 1995 was within 5 percent of the national average of 308 *sum* (almost exactly twice the minimum wage in that year of 150 *sum*).

representative at the regional level.¹² The survey instrument contained a block of questions on the Mahalla social assistance scheme, addressed to the head of the household. The rest of the household questionnaire contained sections on household composition, housing amenities and ownership of durable goods, access to and use of private agricultural plots, and private transfers. A questionnaire to all adults aged over 16 collected information on education, employment and incomes. Finally, basic anthropometric data (height and weight) were collected from all pre-school children; these represent an important additional measure of living standards and are especially valuable in the context of a Central Asian country in transition (Ismail and Micklewright, 1997). The survey therefore provides a range of welfare indicators that may be used to assess targeting of public policy. Unfortunately, however, we were unable to supplement the survey data with any information on the Mahallas in which the respondent households reside. For example, we do not observe the funds allocated to these Mahallas for social assistance.

Figure 2 classifies the 1,581 surveyed households in terms of their knowledge, claim history, receipt, and attitude towards the social assistance scheme. In doing so it illustrates a number of the scheme's features at work. The scheme had been in existence for nine months at the time of the EESU. Four-fifths of surveyed households knew of the scheme, and among these just under a third had applied for assistance. Two-thirds of applicants were granted help, indicating that award was far from automatic, and a small number of those not applying were granted benefit on the Mahalla committee's own initiative – confirming that this possibility is a real one. Overall, nearly one in five households were receiving benefit at the time of the survey or had previously done so. The latter group is not negligible; just under a fifth of those awarded benefit following a claim were no longer doing so at the time of the survey, implying an annual outflow rate from benefit of about 25 percent. This demonstrates a reasonable degree of turnover in the pool of beneficiaries.

Among those who had not applied, over half said they would do so if they were in “material difficulties”. On the one hand, the attitude of all persons aware of the scheme seems rather positive – those who applied, who say they would apply,

¹² Our national level results employ weights designed to produce a sample representative of the total population of the three surveyed regions. We thus weight by region and also correct for some under-sampling in rural areas. (See Coudouel, 1998 for details.)

or who had accepted help represent over 70 percent of all households with knowledge of the benefit. On the other hand, the data show that 40 percent of the sample either had not heard of the scheme, or say they would *not* apply to it if in difficulty. The size of this group suggests that a significant take-up problem may exist.

The tree diagram presents information for the three regions together, but we have already seen from administrative data that there is substantial variation across regions in the incidence of receipt. This is reflected in the EESU data, Table 1 showing knowledge of the scheme and incidence of receipt in each of the three regions included, distinguishing also between urban and rural areas. Both knowledge and receipt are more common in Fergana and Karakalpakstan and, within those two regions, in rural areas.¹³ The higher incidence of receipt in the rural areas is particularly notable, where the figure is twice that found in the urban areas. This may reflect the greater importance of the Mahalla as an institution in rural areas or it may reflect a greater need in such areas for support.

Table 2 shows how current receipt at the time of the EESU interview varies with a number of household characteristics, some of which are explicitly mentioned in the instructions given to the Mahallas. The picture of targeting that is obtained is mixed, with some household characteristics correlated with receipt in a way that one would expect, while others are not.

On the one hand, the frequency of receipt rises notably with the number of children, as one would expect from the instructions. A fifth of households with three children receive benefit, and a quarter of those with four or more, and these two types of households account for over half of all households with benefit. This compares with only 1 in 8 and 1 in 10 households where there are two children and one child respectively, and only 1 in 13 where there are none.

On the other hand, the variation of receipt with the number of working adults is puzzling. Although households with two persons working have a lower probability of receiving benefit than the average, the highest probability of all is where there are three or more persons working. Where there are no workers the incidence is the same as that for all households together. (This does not appear to be the result of

¹³ The figures for the percentage of EESU households in receipt in Fergana and Karakalpakstan as a whole are exactly as in the administrative data in Figure 1, while the figure for Tashkent city is lower (administrative data show 17.9 percent of households in the capital receiving in that year).

regional differences in household composition.) Households with an unemployed member (someone without work and declaring that they are searching) are about one-third more likely to be in receipt than the average household. Nearly one in five households contain someone unemployed, although almost none of them will be registered officially as such, judging by administrative data on unemployment.¹⁴ Female headed households in which no men are present and pensioner households both appear only slightly more likely to receive benefit than the average household.

Table 3 focuses on variation of incidence of social assistance with (equivalized) cash income received in the last month (net of any support from the Mahallas). Knowledge of the scheme is related inversely to income – twice as many households in the top two quintiles do not know about the scheme as in the bottom two. This indicates an element of self-targeting, although it is of concern that one in seven households in the bottom quintile are also ignorant. Similarly, claims for benefit fall with income, which is also encouraging; 40 percent in the bottom two quintiles had applied for support compared to 17 percent in the top two. The third column shows the proportion granted benefit (whether or not as the result of an application), which falls from over a quarter in the bottom two quintiles to 10 percent in the highest. This pattern of receipt with income is partly explained by the regional differences in both the incidence of benefit and average income levels. But receipt does fall with income within each oblast – the proportion of households in receipt in the bottom two and top two quintiles of each oblast income distribution are 12 percent and 8 percent, respectively, in Tashkent, 32 percent and 15 percent in Fergana, and 35 percent and 20 percent in Karakalpakstan.

Column 4, by contrast, shows that the average amount of benefit paid to recipients hardly varies across income groups. Benefit awards certainly do vary (the coefficient of variation is 0.58) but not, apparently, with income. (This pattern echoes the lack of variation of average benefit amounts by region, referred to in the discussion of Figure 1.) This means that the shares of total benefit going to each income quintile, shown in the last column of Table 3, are driven by the variation in the frequency of receipt in column 3. Further analysis revealed little association of benefit amounts with *any* observed household characteristics, a finding of some concern. In what follows we focus on explaining the probability of receiving any

¹⁴ The official registered unemployment rate in Uzbekistan in 1995 was only 0.3 percent. As in a

benefit, where household characteristics do appear to matter.

Cash income over one month may not be a strong indicator of household welfare, as argued in the Introduction. This may explain why the association of income with receipt is not very strong – nearly a fifth of households receive benefit but only a third of these are in the bottom quintile. A richer investigation of targeting is to investigate whether the partial correlations of a number of different indicators have the right sign and to resolve this we turn to multivariate analysis.

4. Modelling the Probability of Receipt

What household characteristics beyond monthly cash income would one want to use to investigate benefit targeting? On one argument, household consumption or, alternatively, income of all types (the distinction between the two is not of course trivial) is the appropriate measure of welfare to consider. On this argument, welfare should not in fact be considered a multidimensional vector, and the problem is merely that we do not observe the ideal scalar. Characteristics of the household other than monthly income are of interest only because they proxy this unobserved ideal.

The alternative argument is that welfare is indeed multidimensional – that living standards do depend on more than consumption alone. For example, the economic insecurity of unemployment may generate disutility other than through reduced current consumption. Low nutritional status (of which food intake is only one determining factor) increases the risk of ill-health or even death and reduces physical and mental capabilities. (In the case of children, nutritional deficits may have an adverse impact on development and hence health and productivity in later life.) It is, admittedly, another issue as to whether providing a cash transfer is the appropriate policy response to low welfare in dimensions such as these, as opposed to direct intervention in the labour market or in systems of public health.

The variables we use to explain the probability of receipt of benefit include those proxying unobserved income (or that determine consumption) and others justified as direct welfare measures. We also include control variables that are not intended as welfare measures but which are of interest in their own right, such as

number of other former Soviet republics, the incentive to register as unemployed is very weak.

ethnicity.

The characteristics observable to us are also observable to the Mahalla committees investigating claims to benefit, with the exception of children's nutritional status. However, much information on the household is probably available to the Mahallas, but is not recorded in our survey. Such "idiosyncratic" information may be one reason why we are unable to explain almost any of the variation in the amounts of benefit among those households in receipt.¹⁵

We estimate equations that explain the probability of receipt at the time of interview, irrespective of knowledge, and whether received as a result of an application by the household or following the initiative of the Mahallas themselves. Equations are estimated by logistic regression, in which the probability, p , is given by the function $1/(1+\exp(\beta X))$.

The first three columns in Table 4 relate to all 1,581 households in the sample, while the last two are restricted to the 765 households where we have anthropometric measurements of children aged 6-83 months. The first column, containing just the log of income and some area dummies, serves as a baseline specification. (The excluded categories are urban areas of over 100,000 people and the regions of Tashkent city and Fergana; the addition of the area dummies halves the income coefficient, confirming the mediating effect of region referred to earlier.) The second column includes a number of other plausible welfare indicators (or proxies for consumption), some of which are directly referred to in the instructions given to the Mahallas. These are an index of ownership of durable goods (explained in the notes to the table) that ranges from 0 to 1 and dummy variables for ownership of any form of motorized transport, possession of an agricultural plot, and ownership of cattle, sheep and goats. Their inclusion reduces the coefficient on income by some 50 percent, leaving the elasticity of receipt at less than 0.2 (evaluating at the average probability) and barely significant at the 5 percent level.

The durable asset index and the transport dummy have powerful negative and significant effects. Evaluating at the average probability of receipt, the marginal effect of an additional durable good is to reduce that probability by some 5 percent

¹⁵ Alderman (1997) investigates targeting of social assistance at the local level in Albania and partitions consumption (recorded in considerable detail in his data) into the part explained by observed household characteristics of the type available in our EESU data and the part which is unexplained. The latter has a powerful impact in his model of social assistance expenditure, and this is interpreted as evidence of the importance of idiosyncratic information available to the benefit authorities.

points. Ownership of transport reduces the probability by up to 10 points. The plot and animal dummies are intended to proxy agricultural assets. Surprisingly, ownership of a plot (almost universal in rural areas but also common in towns and cities) has a *positive* effect on receipt, similar in absolute magnitude to that of transport ownership. Ownership of cattle and goats, but interestingly not sheep, reduces the benefit probability by some 5-10 percent points, although the effects are not well determined.

We experimented with a large variety of alternative specifications of agricultural asset variables but could not improve on the simple specification shown in the table.¹⁶ There appeared to be no simple picture of greater agricultural assets being associated with a lower probability of receipt, and we were left with the mixed results reported in Table 4. Nor does the inclusion of these and the other variables remove the effect of the rural dummy. The specification in column 2 shows rural households as some 10 percent points more likely to receive benefit, other things equal, with the same being true of all households in Karakalpakstan.

Column 3 sees the inclusion of several household characteristics explored in Table 2, together with a dummy indicating Central Asian ethnicity of the head of household. The former are in the instructions given to the Mahalla committees and could be interpreted as welfare indicators, although it should be noted that the number of children is already taken into account in the equalizing of household income. The results show that the presence of children has a well determined direct effect and that the higher probability of benefit for households containing unemployed persons is not explained by other factors. But, unexpectedly, given Table 2, the benefit probability is very much higher in female headed households. The Central Asian dummy is just significant at the 5 percent level and has quite a large effect (Central Asian ethnicity is almost universal in Karakalpakstan, but nearly 1 in 10 households in Fergana and a half in Tashkent are of another ethnic background, typically Slav); these households have a *ceteris paribus* probability of receipt that is some 10 percent points higher.

The final point to note from this specification is that the income coefficient is driven to zero. Conditional on the other variables in the model, monthly income has

¹⁶ Amongst the variables tried that proved insignificant or inconclusive were the amount of land, imputed income from land (applying available estimates at the level of the raion of the potential output per hectare), and fruit tree and vine ownership.

no discernible effect. (However, the apparent Karakalpakstan and rural “effects” survive – benefit does seem more likely in these areas.)

Are households with young children of lower nutritional status more likely to receive benefit than other households with young children, other things equal? Results in columns 4 and 5 do not provide strong evidence that this is the case. The variable we enter is the minimum value in the household of height-for-age, an anthropometric measure that picks up longer-term changes in the determinants of nutritional status, including factors affecting food intake and health status.¹⁷ This just fails to be significant at the 10 percent level in column 4, and the estimated coefficient is small (the standard deviation of the variable, which is measured as Z-scores from the reference population median, is 1.1). And when the household characteristic variables are added in column 5, it turns completely insignificant.

Overall, the results in Table 4 provide mixed evidence on the degree of targeting of social assistance. Most characteristics that can be interpreted as proxies for consumption, or as welfare indicators in their own right, have the expected sign. But several are weak in effect, rather poorly determined, and with coefficients that are not robust to changes in the specification. Table 5 summarizes the picture of targeting that the results provide by comparing predicted probabilities of receipt for two hypothetical households, one with “low welfare” characteristics and one with “high welfare” characteristics. (The two represent households at the 10th and 90th percentiles for each characteristic.) The low welfare household has low income and no durable assets or transport, and if young children are present at least one is classified as “stunted”. The high welfare household is towards the opposite end of the distribution on each characteristic. The predictions are based on the specifications in columns 2 and 4, thus taking a rather narrow view of the appropriate welfare indicators or consumption proxies.

The low welfare household has a probability of receipt between seven and eight times that of the high welfare household (and some two and a half times the mean observed probability). This seems a reasonably encouraging picture of

¹⁷ Some 15 percent of measured children in the sample are classified as moderately or severely “stunted”, which is defined as height-for-age more than two standard deviations below the median of the reference population. This prevalence is similar to that found in richer South American countries. Stunting in the sample is substantially more common in rural than in urban areas (Ismail and Micklewright, 1997). (We do not use weight-for-height, a measure of short-term nutritional status, on account of its possible endogeneity to the receipt of benefit.)

targeting and amongst other things illustrates the importance of focusing on the whole vector of indicators rather than on particular elements in it.

5. Knowledge, Claim and Award

How does the targeting in the Uzbek social assistance scheme come about? Is it through low welfare households having better knowledge of the scheme? Do low welfare households have a higher propensity to apply? Or is it due to the decisions made by the Mahalla committees when assessing applications? One's view of this sort of benefit scheme will vary with the answers to these questions.

Despite the fact that the process of targeting depends greatly on the information available to the different agents involved and on their behaviour in the light of this information, much empirical research on targeting does not have access to the data that are necessary to begin to put more structure on the problem (e.g. Duclos, 1995). In short, different categories of non-receipt cannot be distinguished. In this section we dig beneath the results in Table 4, using the data on knowledge, claim and award introduced earlier in the paper.

The overall probability of receipt of assistance may be written as:

$$p(\text{receipt}) = p(\text{award} \mid \text{claim}) \cdot p(\text{claim} \mid \text{knowledge}) \cdot p(\text{knowledge}) \quad (1)$$

Table 6 presents results of logits of each of the three probabilities on the right hand side of equation (1), the specification being the same as in column 3 of Table 4. These results can be viewed simply as a multivariate description of the partial correlations in the data. However, in the case of claims, it is straightforward to give a behavioural interpretation underlying the estimated equation: the binary choice of a risk-neutral household between two alternatives. These alternatives are (a) the certain income in the event of no claim being made and (b) the weighted average of two uncertain incomes – those with and without benefit (net of claiming costs) – that are possible following an application. (The weights in this alternative are the household's *perceived* probability of an award and one minus this probability.)

In the case of the claim and award equations, the results are obtained conditional on membership of the population represented by the sub-sample

concerned at each stage. There is insufficient information in the data to try to identify selection effects, allowing for correlations between the unobservable factors in each equation. (It also should be noted that equation (1) approximates the true situation since it takes no account of receipt due to a direct grant of benefit from a Mahalla that does not follow an application.)

The disaggregation of the various steps towards receipt leads to considerably more insight into the process of targeting. Results concerning income, durable assets and transport ownership suggest that there is a considerable degree of self-targeting at the stage of submitting a claim. (None of these characteristics have much association with knowledge.) Claims are made by only a third of households with knowledge of the scheme, and it is clear that they are far from being a random sub-sample. The sharp negative effects on the claim probability of the ownership of durables and of transport appear to continue to a greater (transport) or lesser (durables) extent for the awards probability. The results for numbers of children, a female head, and the unemployed are similar to those for durables and transport: all three have an impact through both awards and claims.

The results for income are striking. Income has a significant negative impact on claims, holding other characteristics constant, despite the lack of any independent effect on overall receipt found earlier in the analogous specification in Table 4. The results for awards shed light on this apparent paradox since they suggest that the award probability, conditional on a claim, *rises* with income – although the coefficient is only just significant at the 5 percent level. It is hard to take this result at face value, not least since it is inconsistent with the impact of several other welfare indicators in the award equation. The conclusion that the Mahalla committees are consciously directing money towards richer applicants therefore seems premature, but it is notable that the partial correlation with income in the award equation always has the “wrong” sign whatever specification we adopt.

Table 2 already showed that knowledge of the scheme is notably higher in Karakalpakstan and rural areas, but Table 6 shows that other observed factors are not mediating much in the relationship. It seems that applications are also more common in these parts of the country, but award conditional on application is not. As many as a half of all households in Karakalpakstan had applied for benefit, compared to a third in Fergana and a fifth in Tashkent.

Finally, the findings concerning differences between Central Asian households and other households are of some interest. Households of Central Asian ethnicity are clearly more knowledgeable of the scheme – this is one of the few variables to have a significant impact on knowledge – and this must reflect the nature of the Mahalla as a Central Asian institution. Central Asian households are no more likely to make an application conditional on that knowledge, but there is some suggestion that they are more likely to get benefit if they do make a claim, controlling for other observed characteristics. Different interpretations can be put on the last of these findings. On the one hand, it could be evidence of discrimination on the basis of ethnic background. Alternatively, these households may differ systematically in characteristics that are unmeasured in our survey but that can be observed by the Mahalla committees, although it is difficult to see which of these could operate in their favour.

Table 7 reports the coefficients on height-for-age for the equations estimated on households with young children. The earlier results for receipt showed no greater probability of benefit with lower long-term nutritional status once the final set of controls was added to the specification (Table 4, column 5). However, Table 7 reveals a discernible impact once the different determinants of receipt are identified. In particular, the probability of an award does appear to fall with improved nutritional status. A difference of two standard deviations on the Z-score (the difference more or less between the top and bottom deciles) reduces the probability of award by up to 20 percent points. This finding could be thought of counter-balancing that for income – in this instance a clear welfare indicator has the “right” correlation with the award probability.

Table 8 summarizes the results with predicted probabilities of knowledge, claim and award for low and high welfare households. The characteristics assumed for these two household types are as in Table 5, with the additional assumption that the low welfare household has three children and an unemployed member, while the high welfare household has two children and no member unemployed. (These characteristics are not included in the specification underlying Table 5.)

Not surprisingly in view of the results in Table 6, the predicted knowledge probability essentially does not vary with the level of welfare, although the bivariate results for income alone in Table 3 (where, for example, location is not held

constant) are worth recalling. The predicted claim probabilities, however, differ enormously between high and low welfare households – by a factor of 12. The high welfare household is predicated to be very unlikely to apply for benefit, which implies an encouraging degree of self-targeting. But it should also be noted that the low welfare household is predicted to not apply with a probability as high as 0.36 (which is conditional on knowledge of the scheme), implying that self-targeting leads to a significant degree of exclusion among those households which one would expect to have a high probability of receiving benefit. The award probabilities, conditional on a claim, differ less in absolute (as well as proportionate terms) between the two types of household. The low welfare household is predicted to be very likely to get benefit – a welcome result. The concern at this stage is more that the high welfare household has an evens chance of receiving an award.

6. Conclusions

The social assistance scheme administered by the Mahallas in Uzbekistan provides an interesting example of a highly decentralized and flexible system of benefit targeting, with lessons for both other transition economies and elsewhere.

The scheme's rules embody no formal set of necessary or sufficient conditions for benefit. Despite this, it does deliver benefit much more frequently to the less well-off than to the better-off, as summarized by our simulations for high and low welfare households that take into account a range of household characteristics. In this sense, the results are a positive demonstration of the potential for “informally” run and flexible schemes of social assistance.

However, a number of less satisfactory results also emerge that are a reminder of the drawbacks of informality and flexibility in system design. First, the amounts of benefit paid to recipients appear unrelated to observed measures of household well-being. Second, once a full set of controls is introduced in the equations, the probability of receipt appears unrelated to cash income or children's nutritional status, both obvious candidates as partial indicators of welfare. Third, while the scheme favours children, female headed households, and the unemployed, which is to be welcomed, it also appears to favour rural areas and ethnic Central Asian households. The justification for this is less obvious, although

these associations may well proxy other factors.

Disaggregating the process of receipt into knowledge, claim and award provides much more insight into targeting. Our results suggest that self-targeting in Uzbekistan very effectively cuts down the probability of claims from high welfare households and that – conditional on a claim – the Mahallas are very likely to award benefit to low welfare households. But the results also suggest that more claims need to be encouraged from low welfare households, and that in deciding on awards the Mahallas are relatively generous towards high welfare households. Collecting information on claim behaviour and on awards from among the pool of claims should be a priority for future research on social assistance schemes in other countries.

A part of both the scheme's success and its failure in targeting probably stems from the nature of the Mahalla as an institution in Uzbek society. For example, this may have helped the social assistance scheme to be accepted locally as a poverty alleviation programme, promoting self-targeting. Some other transition countries, such as Tajikistan, Azerbaijan and Armenia, have similar institutions (and the same is true in some other parts of the world), but in general this is not the case, implying that it would have to be local government or a branch office of a central government department that undertakes the administration.

With genuinely decentralized systems of social assistance, a key issue in design is the provision of the necessary funds to the responsible institution. Many transition economies face the problem of decentralizing responsibility for functions of the state, but at the same time providing adequate and transparent funding so as to ensure horizontal equity. The Uzbek scheme does not seem a model in this respect. Although data constraints mean that we have been unable to shed any light on the subject, it may well be that more attention to the appropriate provision of funds to different Mahallas would have as much or more effect on targeting as would further monitoring by the central authorities of the Mahallas' decisions on the allocation of funds.

One aspect of this issue is the criteria on which targeting efficiency is assessed. We have emphasized the slippery nature of the concept of errors of inclusion or exclusion when the purpose of policy is vague. On one view, this problem is worsened by the lack of an official subsistence minimum in Uzbekistan, meaning that a natural choice of an external yardstick is not available. But whatever

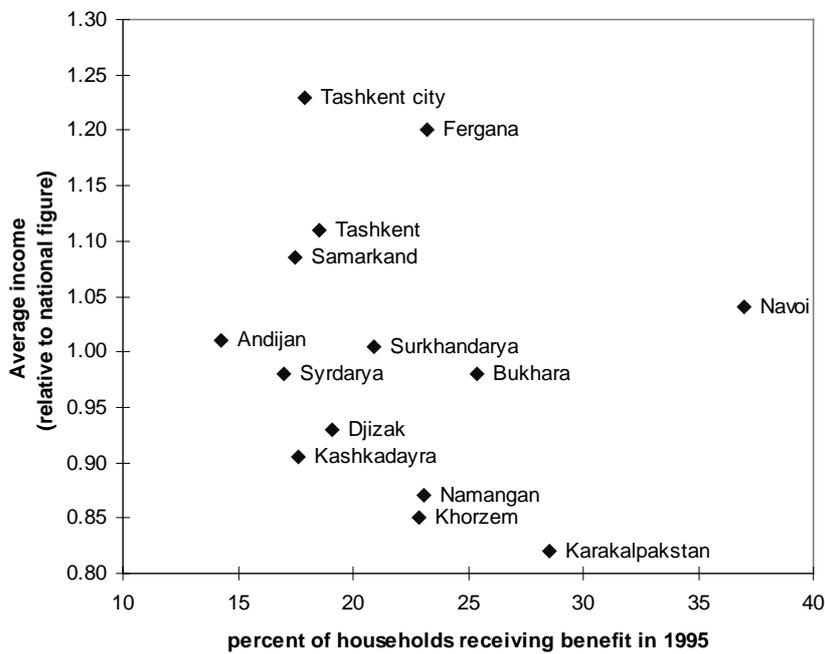
the demerits in such a design, the Uzbek scheme's lack of necessary or sufficient conditions for benefit can be seen as a healthy reflection of the difficulties in selecting a single scalar as an appropriate measure of household welfare.

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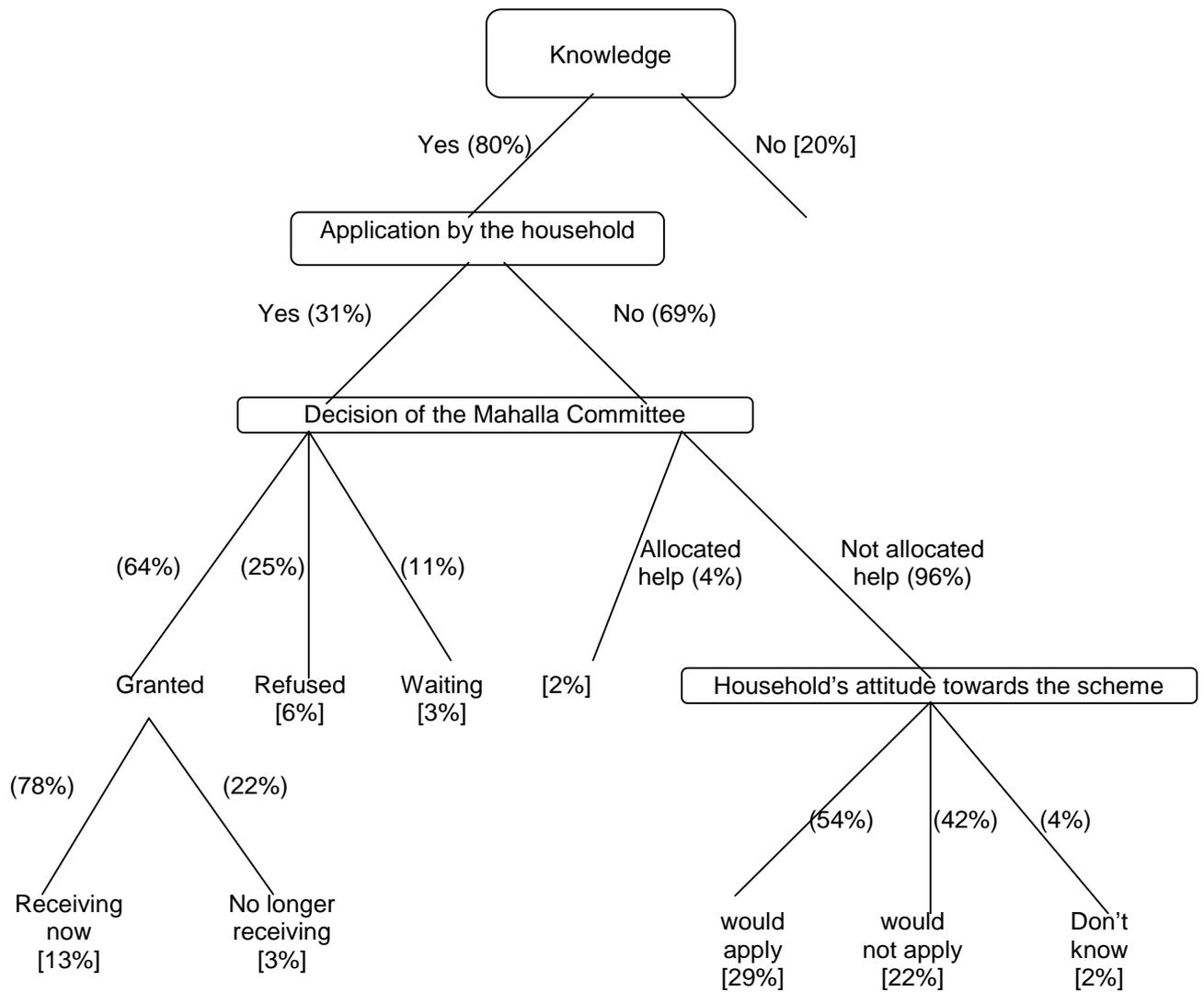
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Figure 1. Incidence of social assistance receipt and average income by region



Source: Figures for incidence of social assistance are from administrative data. The average income figures (which refer to household cash income per capita in one month) are from tabulations from an official June 1994 household survey.

Figure 2: Knowledge, claims, awards, and attitudes to social assistance



Note: The figures in square brackets give the percentage of the total sample in each group. The figures in round brackets show the percentage at each stage.

Table 1: Knowledge and incidence of the Mahalla scheme

	Tashkent	Fergana		Karakalpakstan	
	city	Urban	rural	urban	rural
Knowledge (% knowing the scheme)	69.9	80.6	89.5	86.1	94.2
Incidence (% receiving benefit)	10.5	13.1	27.6	18.9	36.4
Sample size	552	191	280	333	225

Note: Households no longer receiving benefit are included among recipients in this table.

Table 2: Benefit receipt by household characteristics

		Percentage with benefit
All Households		14.5
Number of children:	0	7.5
	1	10.0
	2	12.5
	3	20.1
	4+	26.3
Unemployed member(s)		19.7
Female head (and no male adults)		16.0
Pensioner households		15.8
Number of working adults:	0	14.7
	1	15.3
	2	11.5
	3+	18.6

Note: Pensioner households are those containing only pensioners

Table 3: Knowledge, claim and receipt by income quintiles

	1.	2.	3.	4.	5.
pre-Mahalla equivalized income quintile	Don't know of the scheme	Applied for benefit	Benefit awarded or allocated	Average amount of benefit among recipients (<i>sum</i>)	Share of total benefit expenditure
1	14.6	42.4	27.1	331	30.1
2	13.1	37.8	27.4	377	31.4
3	22.4	17.0	11.7	320	13.1
4	24.5	18.9	14.4	317	14.0
5	27.4	15.5	10.4	359	11.2

Note: Households no longer receiving benefit are included among recipients in column 3. Income is that received in cash in the previous month (excluding income due but not received) and is equivalised using the Uzbek Ministry of Labour equivalence scale, which embodies approximately an elasticity of needs with respect to family size of 0.7.

Table 4: Logit estimates of probabilities of receipt of social assistance

	All Households			Households with children aged 0-6	
	1	2	3	4	5
Constant	-1.86 (8.7)	-1.44 (5.0)	-2.88 (6.8)	-1.43 (3.5)	-4.16 (3.7)
Karakalpakstan	0.58 (3.5)	0.72 (4.1)	0.60 (3.3)	0.54 (2.4)	0.37 (1.6)
Town	-0.03 (0.1)	-0.30 (1.1)	-0.41 (1.5)	-0.29 (0.8)	0.31 (0.8)
Rural area	1.0 (5.8)	0.71 (2.9)	0.72 (2.9)	0.70 (2.1)	0.84 (2.5)
Income (log)	-0.33 (3.3)	-0.21 (2.0)	-0.04 (0.4)	-0.29 (2.0)	-0.16 (1.1)
Durable good index		-1.42 (4.5)	-1.46 (4.5)	-0.62 (1.5)	-0.78 (1.8)
Owens transport		-0.59 (3.0)	-0.65 (3.2)	-0.58 (2.4)	-0.62 (2.5)
Owens plot of land		0.52 (2.3)	0.50 (2.1)	0.31 (1.0)	0.21 (0.6)
Owens cattle		-0.42 (2.2)	-0.49 (2.5)	-0.41 (1.7)	-0.47 (1.9)
Owens goats		-0.65 (2.0)	-0.61 (1.8)	-0.50 (1.2)	-0.51 (1.2)
Owens sheep		0.14 (0.7)	0.07 (0.4)	-0.07 (0.3)	-0.21 (0.8)
Children (number)			0.22 (4.9)		0.23 (3.8)
Female head present			1.16 (4.2)		1.57 (2.7)
Unemployed members present			0.42 (2.4)		0.40 (1.7)
Central Asian ethnicity			0.66 (2.1)		2.04 (2.0)
Child Height-for-age				-0.15 (1.7)	-0.04 (0.5)
Log likelihood	-642.0	-613.7	-590.8		
Sample Size	1581	1581	1581	765	765

Notes:

1. Income is that in cash, received or due from all sources in last month (excluding any income from the Mahalla) and is equivalised using the Uzbek Ministry of Labour scale, which approximates an elasticity of needs with respect to size of 0.7
2. Towns are urban areas of less than 100,000 persons.
3. The durable good index is defined as follows: for each of 5 durable goods (refrigerator, colour television, washing machine, tape recorder and sewing machine) a household scored "1" if the good is present; the total is then summed and divided by 5. (The index, therefore, ranges from 0 to 1.)
4. The five ownership variables are all 0/1 dummies.
5. height-for-age is measured in z-scores from the median in the appropriate age-group in the reference population (healthy US children). The value entered in the minimum in the household among children aged 0-6 if there are more than one measured child.
6. T-statistics in brackets.

Table 5: Predicted probabilities of receipt for low and high welfare households

	Low welfare household	High welfare household
All households (mean p= 0.16)	0.414	0.053
Households with young children (mean p = 0.19)	0.428	0.064

Note: Predictions are based on columns 2 and 4 of Table 4. The low welfare household has equivalised income at the bottom decile cut-off, no durable goods, no transport, no animals, and, if young children are present, has minimum height-for-age at the bottom decile (a Z-score of -2.53). The high welfare household has income and Z-score at the top decile values, has 4 durable goods, owns a means of transport, and owns a cow. Other characteristics assumed common to both households are residence in a rural area of Fergana and ownership of a plot.

Table 6: Logit estimates of probabilities of knowledge, claim and award

	Knowledge	Claim	Award
Constant	0.39 (1.3)	-0.54 (1.5)	-0.37 (0.6)
Karakalpakstan	0.41 (1.9)	0.64 (3.9)	-0.33 (1.1)
Town	0.13 (0.5)	0.28 (1.2)	-1.41 (3.2)
Rural area	0.59 (2.3)	0.25 (1.2)	0.27 (0.6)
Income (log)	0.07 (0.6)	-0.32 (3.1)	0.38 (2.0)
Durable goodindex	-0.35 (1.3)	-1.77 (6.4)	-0.95 (1.8)
Own transport	0.26 (1.4)	-0.51 (3.1)	-1.00 (3.2)
Own plot of land	0.01 (0.1)	0.09 (0.5)	0.54 (1.6)
Own cattle	0.10 (0.4)	-0.25 (1.5)	-0.57 (1.7)
Own goats	0.19 (0.4)	0.03 (0.1)	-1.04 (2.3)
Own sheep	0.54 (2.1)	-0.04 (0.2)	0.20 (0.6)
Children (number)	0.06 (1.2)	0.21 (5.0)	0.26 (3.1)
Female head present	0.38 (1.7)	0.94 (3.8)	0.68 (1.4)
Unemployed members present	-0.16 (0.9)	0.46 (2.9)	0.61 (2.1)
Central Asian ethnicity	0.82 (4.5)	-0.17 (0.8)	0.68 (1.5)
Log likelihood	-683.5	-708.1	-212.4
Sample size	1581	1291	405
Mean of dependant variable	0.82	0.34	0.69

Note: The claim equation is estimated for the sub-sample with knowledge of the Mahalla scheme and the award equation for the sub-sample which have made a claim. The dependent variable in the claim equation takes the value 1 if a claim has ever been made. The award equation is estimated for the sub-sample of households which have made a claim, excluding those waiting for a decision on the claim; the dependent variable takes the value 1 if benefit was awarded irrespective of whether it is still in receipt. T-statistics in brackets.

Table 7 - Logit Coefficients on Height-for-Age Variable for Households with Young Children

	1 Knowledge	2 Claim	3 Award
	0.125 (1.2)	-0.021 (0.2)	-0.383 (2.2)
Sample size	765	657	231
Mean prob.	0.86	0.39	0.71

Note: Specification is as in Column 5 of Table 4. T-statistics in brackets.

Table 8: Predicted probabilities for low and high welfare households

Probability:	Low welfare household	High welfare household
Knowledge	0.867	0.898
Claim Knowledge	0.625	0.052
Award Claim	0.940	0.560

Notes: Predictions are based on Table 6. Characteristics of low and high welfare households are as in Table 5 with the additional assumptions that the low welfare household has three children and an unemployed member, while the high welfare household has two children and no member unemployed. (Both household types are assumed to be of Central Asian ethnicity.)