Administration of Government Subsidies Using Contactless Bank Cards

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Abstract: Subsidization of major and minor government branches is common strategy with the aim to optimize government funds, increase residents' welfare and overall infrastructures' efficiency, including public transportation system. Within the different countries subsidization is being approached using specific models of calculation and payment. However, most of them use the same subsidy administration approaches – cash transfers or social services. The aim of this paper is to describe proposed improvements of transport subsidy administration approach by implementation of e-cards for payments. It is proposed to improve subsidy payment procedure by promoting that subsidy should be paid directly to subsidy receiver. This will allow managing only real transactions and only subsidy receiver is interested in subsidy utilization. Proposed approach to process the subsidy administration and payments can be realized by using existing banking infrastructure and novel product as electronic cards.

1 INTRODUCTION

In many countries subsidy administration is an actual problem and open question on government level. This problem is important because in most cases (Drevs, Tscheulin, 2014) residents' taxes are used for subsidy payments. Several residents groups with ability to apply for different subsidies can be mentioned, for example pupils, seniors, unemployed people etc.

In Latvia subsidy administration and its payment strategy is also widely discussed issue. In 16.02.2012 the goal (Latvian Ministry Cabinet, 2012) for Welfare Ministry to realize reform of Latvian social assistance system was defined by the Latvian Ministry cabinet, which states implementation of reform by gradually transforming assistance system from passive (subsidy social assistance system) to active (client motivating system). It is required to improve situation with existing social system by providing possible biggest added value for clients and for society overall (Latvian Ministry Cabinet, 2012).

To start improvement of social safety system and to grant reasonable decision making offering optimization events for mentioned branch, in year 2013 World Bank research is carried out in Latvia with title "*Expenditure and performance benchmarking country level, Expenditure and performance of welfare benefits and employment programs in Latvia*" (The World Bank, 2013).

Results of this research were very significant and together with evaluation of whole system, several disadvantages and problems of social assistance system, including labour market policy, State social benefits and taxation were identified. As well main residents risk groups were defined. As most significant problem area in whole social safety system, which is clarified during mentioned World Bank research is "lack of state and government support purposefulness and the necessity to improve system relating to poorest residents". Social assistance and welfare programs are non-contributory benefits (or services) targeted at the poorest residents, as well at families with children, disabled and other categories of the population who may need income support or other help (The World Bank, 2013).

Social assistance programs and approaches differ across EU countries (Palme, 2013) and share spent on cash benefits versus benefits in-kind (social services) also differs. It can be mentioned that Nordic countries deliver significant share of social

assistance through social services compared to the new EU member countries, like Estonia and Poland where the majority of social assistance is provided in form of cash transfers. During the last decade in Latvia more than half (approximately 60 %) of social assistance benefits were delivered as cash transfers, and not by social services. This should be changed in future, minimising the amount of cash transfers. In Latvia only about one fifth of total social protection spending is allocated to non-contributory social assistance programs (The World Bank, 2013).

Latvian social assistance (welfare) programs include social assistance benefits such as benefits for meals and food, health care benefits and transport benefits. These benefits are meant for people qualifying the means-tested eligibility threshold or other eligibility criteria set by municipalities, and being administered by municipalities.

The aim of this paper is to describe proposed transport's subsidy administration approach by implementation of e-cards for payments. To improve subsidy granting and administration procedure, existing situation is analysed and new subsidy administration and payment approach is proposed. This approach improves subsidy payment procedure by promoting that subsidy should be paid directly to subsidy receiver. This will allow managing only real transactions and only subsidy receiver is interested in subsidy utilization. This approach excludes conflicts of interests and makes more efficient spending of subsidy funds. For new subsidy administration approach implementation use of existing banking infrastructure and electronic cards is proposed.

2 ANALYSE OF GOVERNMENT SUBSIDY ADMINISTRATION APPROACHES

Basically the transport subsidy related literature sources distinguishes between research neglecting spatial location decisions and the labour-leisure choice (Mohring, 1972; Parry, Small, 2009) approaches disregarding spatial location decisions but considering labour supply decisions (Wrede, 2000; Calthrop, Leuven, 2001; Richter, 2006; Dender, 2003; Borger, Wuyts, 2009) and research where location choice is explicitly taken into account but labour supply is exogenously given (Zenou, 2000; Martin, 2001; Wrede, 2001; Brueckner, 2005; Borck, Wrede, 2009; Borck,

Wrede, 2008; Borck, Wrede, 2005; Su, DeSalvo, 2008; Wrede, 2009).

Subsidies and benefits can be administered in different ways and using different models, thus, creating overall problem of choosing the correct model for administrating purpose. The existence of different models for administrating of the same subsidy is prevalent (Yang et al., 2010). As example, decentralization of prescription drugs within the Pharmaceutical Benefits Scheme has two models (Bergström, Karlberg, 2007): a population based and a prescribed based.

Additionally, exists so called 'Transfer of fare revenue', which is one of the fare compensation measures for 'fare-discount schemes', which are set by local authorities. In Japan, this scheme was introduced from the 1970s for public bus operators (Sakai, Shoji, 2010). Sakai and Shuji stated that most local governments that own municipal bus companies have implemented this scheme, but this policy measure was aimed at improving the welfare of senior citizens and the disabled and therefore, it is not precisely identical to the actual subsidies. "Since the fare discount for senior citizens and the disabled is not stipulated by law, there are considerable variations among local authorities regarding concessionary fare schemes" (Sakai, Shoji, 2010).

It is known that government grants public transport subsidies to reduce operating cost of public transport enterprises and the individual travel cost of public transport, therefore making decision of choosing public transport over private more expectable. It was stated (Yang et al., 2010) that reducing trip expenses by public transport using public transport subsidies will lead to private car reduction, therefore, increasing overall volume of public transport passengers and decreasing amount of private cars on the roads. This scenario can be preceded until balance between excessive trips and public transport cost is achieved.

Nowadays in Latvia there are two main methods or approaches for government subsidy (grant) administration.

First subsidy administration method (see Fig.1): residents' subsidies are administered by service providers (merchandisers) and subsidies (subsidy payments) are transferred directly to service provider's account.

Several issues can be mentioned about such subsidy administration method. There can be expected mistakes in distribution of grants, because service providers are in conflict of interests and delays in payments for service providers. As well service providers are interested to apply for subsidy
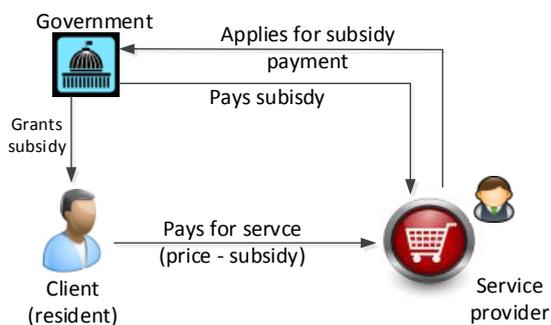
Figure 1: Subsidy administration by service providers.

payments as more as possible, and can do this unfairly.

Second subsidy administration method (see Fig.2): residents pay for service a full price and after that provide receipts for the government institution to receive subsidy payment.
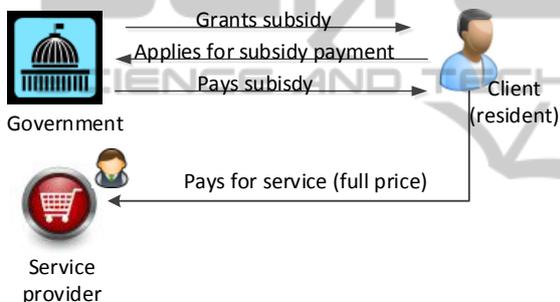

Figure 2: Subsidy administration by government.

Issues of this method are that government cannot precisely verify the subsidised deal; therefore, service provider can unfairly create check for the deal and client can apply for subsidy without taking a service.

Common issue of mentioned approaches is non-effective spending of subsidy funding.

So it is clear that it is needed to change subsidy administration approach to grant, that subsidy will be received directly by person whom subsidy is granted. This approach excludes conflict situations and makes administration of subsidy funding more efficient. This approach guarantees that only real service providers deals (transactions) are fixed. To implement new subsidy administration approach is it proposed to use cheap and fast electronic way for payment for subsidised services or products by using existing banking infrastructure.

3 DESCRIPTION OF PROPOSED APPROACH FOR GOVERNMENT SUBSIDY ADMINISTRATION USING CONTACTLESS BANK CARDS

It is proposed to use existing banking infrastructure for administration of subsidies by implementation of specific electronic cards (E-cards) for payment for subsidised services or products. E-card is multifunctional and personalised payment card with additional non-contact function (including VISA/MaterCard payment cards), where is combined Bank payment cards functionality with person verification and recognition functions. This card should be issued by Bank for subsidy administration.

Cities (governments) delegates banks to issue contactless payment cards with established design and with rights for residents to receive grants, but still governments defines a list of subsidy receivers, provides subsidy calculation scenarios and defines list of service/product providers which can accept E-cards for service/product payment.

Banks identify residents, open bank account for pupils and socially unprotected residents, and issue contactless cards in schools, in social centres and in bank's branches.

Pupils and socially unprotected residents pay for subsidized products/services using banking infrastructure.

Grants are calculated by the fact of successful transaction, based on city defined scenario (fixed rate, % of payment, etc.) and taking into account defined subsidy limits (transaction count, daily payment, monthly payment, etc.).

Bank processes payments between card's owners and service providers simultaneously with grant's payments from cities to grant's receivers bank account (see Fig.3).
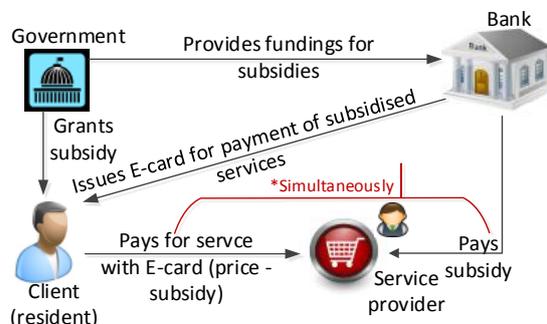

Figure 3: Concept of novel approach for government subsidy administration.

Costs for implementation of such approach for residents are very minimal, because issuance/cancellation of payment cards for residents should be free of charge, calculation and management of grants for city – free of charge, transaction of grant's from city's to grant's receiver's bank account is also free of charge. Costs for the above mentioned services are included in banking commission rate for acceptance of payment card's by service providers.

3.1 Possible Data Structure of Subsidy Formulation

Subsidy provider transmits Subsidy formulation to all Issuer banks, where Subsidy provider's (sub_send_name) subsidy's receivers (sub_rec_name) are clients (pers) of E-card's Issuer (issuer). Subsidy can be assigned to one or group of persons, where Subsidy is calculated based on specific calculation scenario (sub_scenario). Calculation scenario is valid for specific time interval (from_date to till_date). There is specific limit (sub_total) of sum of assigned Subsidies for one client. The limit is valid for specific time interval. Subsidy's receiver (sub_rec_name) receive Subsidy making deals with merchant (merchant) using E-card as payment instrument, which requires personal ID code or card's ID (there is possibility to have both). IssuerID is unique for all Issuer banks, and is listed in unified registry, maintained by Issuer banks. Possible data structure of Subsidy formulation is demonstrated in Figure 4:
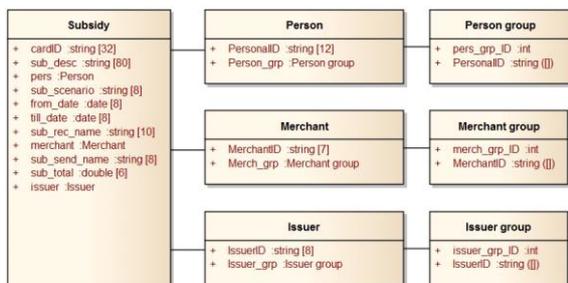

Figure 4: Structure of Subsidy formulation.

3.2 Example of Described Novel Subsidy Administration Approach

Described subsidy administration approach is implemented in Latvia, in Jelgava city for administration of subsidies for pupils. Subsidy is granted for usage of public transportation and for taking a meal in the school. Pupils are using specific e-card for payment of subsidised services (see Fig.5).

Figure 5: Example of e-card for payment of subsidised service.

There are many benefits of implemented subsidy administration approach:
• Additional parental control, which allows monitoring children spending by controlling the amount of funding on E-card.
• Maintaining of confidentiality of social status of children and residents – everyone pays the same amount and receive grants on their bank account.
• Service/product providers receives full price for products/services on their bank account on the next working day.
• Subsidies are calculated only according to actual transaction and are transferred directly to grant's receiver's bank account.
• Grants' receivers receive information about full price of products/services and amount of provided grant.
• This solution is economically effective because of direct transactions within the bank and use of existing banking infrastructure.
• Time saving – fast service because of integration with cash register.

4 CONCLUSIONS

Subsidization as problem on government level was being analysed and subsidy calculation models were introduced in many economic researches. However, it was not stated that subsidies paid by cash transfers can be used unfairly by private organizations. Latvia's transportation system was taken as example, and solution for optimization of subsidy administration is introduced.

In Latvia the main problem of existing subsidy administration approach is non-effective spending of subsidy funding. To improve the administration of subsidies novel approach is proposed. This approach is implemented and is practically verified in Jelgava city in Latvia for subsidy administration of public transportation and meals for pupils in schools.

This approach improves subsidy payment

procedure, by promoting that subsidy should be paid directly to subsidy receiver. This will allow managing only real transactions and only subsidy receiver is interested in subsidy utilization. This approach excludes conflicts of interests and makes more efficient spending of subsidy funds.

Additionally to subsidy administration, proposed approach allows better organization of pupil's daily life.

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