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On the Economics of Volunteering

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Contents

List of Tables:

List of Figures:

List of Classifications:

Acknowledgements

Abstract

The past decade has witnessed a surge in private, volunteer activity across the globe, generating an optimistic belief in the potential of "civil society" in "filling" the niches where both the state and markets have failed. While this has stirred a burgeoning academic interest in the third sector, with a proliferation of studies from the perspective of political science, sociology, and social politics, economic interest has been rather lackluster. Economic theories that may enrich our understanding of volunteering behavior have either not received adequate attention or have not been explicitly identified. Furthermore, the significant contribution made by volunteer labor goes unnoticed in economic terms, as national income and labor force statistics are designed to gather information primarily on "remunerated" economic activity.

Recognizing this lacuna, this paper attempts to develop a conceptual framework to measure the economic contribution made by volunteer labor, thereby hoping to raise its societal appreciation. To do so, we make forays in the following directions: (1) capture the theoretical underpinnings on the economics of volunteering; (2) incorporate that in developing a suitable methodological framework to accord an "economic value" to volunteer labor; (3) use relevant data sources to generate, some initial, but understandably rough estimates to comprehend its contribution to national output and employment. Our results indicate that volunteering is a substantial activity in most developed countries, and is growing in importance in many developing countries. Sound economic analyses applied to good descriptive cross-country data on volunteering could shed light on many fundamental issues: Why has voluntarism flourished in some societies, yet languished in others? Does it play inherently different roles in the "North" vis-a-vis the "South"? And, most importantly, how does the level of development affect voluntarism, i.e. is it rising or declining with development?

Kurzfassung

Im letzten Jahrzehnt konnte weltweit ein Wachstum sozialen bürgerschaftlichen Bewußtseins und Engagements verzeichnet werden. Die Zivilgesellschaft als Bestandteil des Dritten Sektors gewinnt an Bedeutung und das öffentliche Interesse an dieser Entwicklung hat insbesondere in den letzten Jahren rapide zugenommen. Das Potential, das dem Dritten Sektor zugesprochen wird, ist sehr groß. Mehr und mehr setzt sich die Auffassung durch, daß dieser Sektor Nischen zu schließen vermag, die weder Staat noch Markt füllen konnten.

Eine treibende Kraft des Dritten Sektors ist die Freiwilligentätigkeit, die auch Fokus der vorliegenden Arbeit ist. Während sich aus politischer, soziologischer und sozialwissenschaftlicher Perspektive zahlreiche Ansätze zur Entwicklung des Dritten Sektors finden lassen, hat sich der ökonomische Wissenschaftszweig eher zurückgehalten. Ökonomische Theorien, die zu einem besseren Verständnis des Freiwilligensektors beitragen, sind rar oder wurden zumindest noch nicht explizit polarisiert. Diese stiefmütterliche Behandlung der Freiwilligenarbeit schlägt sich auch in der Tatsache nieder, daß Freiwilligenarbeit als nicht-bezahlte Arbeit ökonomisch nicht in der volkswirtschaftlichen Gesamtrechnung erfaßt wird.

Vor dem Hintergrund dieses Defizits und der damit gekoppelten Unterbewertung von Freiwilligenarbeit, beschäftigt sich diese Arbeit mit den folgenden Themen: (1) Polarisierung der theoretischen Grundlagen der Ökonomie der Freiwilligenarbeit, (2) Entwicklung eines methodischen Konzepts, das Freiwilligenarbeit einen ökonomischen Wert zuordnet, (3) erste grobe Einschätzungen des Beitrags der Freiwilligenarbeit zum Bruttosozialprodukt und zur Beschäftigung eines Landes unter Verwendung relevanter Datenquellen. Unsere Ergebnisse unterstreichen die Relevanz der Freiwilligenarbeit in den meisten entwickelten Ländern und ihre zunehmende Wichtigkeit in vielen Entwicklungsländern. In Zukunft sind weiterführende detaillierte ökonomische Analysen, gestützt durch umfassende komparative Daten, notwendig, um offene Fragen zu beantworten und unser Verständnis von Freiwilligenarbeit zu verbessern. Insbesondere ist auch die Frage des Zusammenhangs zwischen dem Ausmaß und den Ausprägungen der Freiwilligenarbeit und der Entwicklungsstufe eines Landes zu klären.

1 Introduction

"Go, Volunteers!" was the title of a recent article in 'Die Zeit'[1] in which we were reminded that despite the conceived immorality of our society reflected in actions of the economy and politics, or even as a response to this, a rise in civic sense and action can be observed. Civil society, well embedded in the third sector, alternatively referred to as the voluntary or nonprofit sector and defined as the social space outside of the market and the state, is gaining in significance all over the world. What are the underlying reasons behind this development?

From a political perspective, hopes are high that the third sector can help in solving a large variety of urgent problems, including compensating the budget deficit, reducing state expenses, as well as counteracting problems of bureaucracy and centralization. In addition, in a socio-political context, characteristics attributed to this sector are seen as beneficial in promoting more self-initiative, autonomy, participation and power deconcentration which are considered as major components of stable democracies (Badelt, 1985). Especially in view of the imperfect public welfare system in European countries, the voluntary sector gains importance in the delivery of direct welfare services as part of a more pluralistic system. Demographic and socio-economic trends of the last years, such as the aging population and high unemployment rates, have also made policy makers increasingly turn to volunteering as a possible solution. For example, unemployed workers can take on voluntary work as a temporary solution, thereby gaining in confidence and qualification (Gaskin et al., 1996). The perception of a mixed economy of welfare has lead several governments in the last decade to change laws and regulations in order to incorporate the voluntary sector as a provider of welfare services.[2]

The interest in the voluntary sector is not limited to the Western world. A significant rise of organized private, nonprofit activity could also be observed in developing countries over the last years (Anheier and Salamon, 1998). The potential of the third sector in contributing to the economic growth of these countries is very high. In addition to its important role in filling niches, i.e. needs and desires of society which were not met by either the public or private sector, third sector involvement aids in the process of social capital formation thereby helping to build strong and cohesive communities and promoting economic growth (Robinson and White, 1997; Putnam, 1993).

A major force behind the third sector is voluntary action. It is commonly argued that the three sectors can be differentiated by the incentives used to secure cooperation or compliance: While the market depends on commercial pressure and the state needs the rule of law, third sector

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[1]   "Freiwillige vor!" (Heuser and von Randow, Die Zeit, March 2000).
[2]   In Denmark e.g. non-governmental organizations are seen as supplements to the public welfare system (Gaskin et al., 1996, p. 31).

organizations are bound together by an appeal to volunteerism (Van Til, 1987; Schuppert, 1991). Even though policy makers apparently begin to turn to the voluntary sector in finding solutions to urgent problems and despite the broad consensus on the importance of voluntary activity, it is surprising how little clarity exists on this issue:

- How extensive are the goods and services provided by this sector and what impact do they have on the net product of a country?
- Who are the volunteers and which factors influence their decision to volunteer on a micro- and macro basis?
- How do the characteristics and scope of volunteering differ across countries and what are possible explanations? Specifically, is voluntarism rising or declining in the level of development?

The lack of consistent data on volunteering leads to an undervaluation of this kind of (productive) activity. Voluntary labor uses limited resources to produce goods and services to satisfy human needs, thereby having the characteristics of an economic activity. Still, voluntary work mainly goes unnoticed in economic terms. It is assumed that economic services are either produced by private, profit-oriented organizations or provided by the public sector. The possibilities of a productive third sector are often not investigated (Badelt, 1985). This deficit is reflected in the fact that non-remunerated activity is not included in national accounts.

With a view to filling this lacuna in the long haul, this concept piece attempts to initiate a modest beginning, a springboard, from which a more serious and comprehensive effort in measuring the economic contribution of volunteering may be launched. As this area of research has many facets, a narrowing of the subject will be imperative to allow for a more in-depth analysis. Specifically, this study will focus on volunteer labor, i.e. donations of time and will not cover donations of money and in-kind. While innovative surveys across a rich cross-section of countries will be undertaken at the later stages of this endeavor, the primary intent of this paper is to provide a sound conceptual framework for that exercise.

Our aim will be to develop a deep and thorough understanding of the economic intuition and dynamics underlying the decision to volunteer and to incorporate that in developing a sound conceptual and methodological framework to measure the societal contribution of volunteer labor. To do so, we try to make some forays in the following areas:

1. Capture the essence of the theoretical underpinnings on the economics of volunteering;
2. Present a synopsis of the relevant methods in measuring "unpaid work" that may provide a suitable methodological framework to value volunteer labor;
3. Use relevant data sources to measure the economic value of volunteer labor, to generate at best some rough estimates to comprehend its contribution to national income and employment.

The ultimate effort to measure and document volunteer work could serve manifold purposes. The primary purpose would be to accord volunteering its due societal appreciation. This would, however, necessitate establishing indicators to measure its contribution to social well being, and could provide a basis for revising GNP and labor force statistics. At both the micro and macro levels, this can provide important information on time allocation between paid work, voluntary work, and leisure. Such time-use indicators can also be used to analyze the trends and tendencies on the share of paid versus voluntary work over time. All of these may eventually be of great help to governments and other institutions in effective policy design.

The documentation of volunteer labor across a vast array of countries would also allow for an exploration of the connection between voluntarism and the prevalence of development. Depending on whether voluntarism can be viewed as a normal good, i.e. rising with economic development, or an inferior good, i.e. declining with economic development, policy implications will differ substantially.

The outline of our paper is organized as follows. Section 2 presents a survey of the literature on volunteering. Section 3 explains the methodological approaches that may be adopted in "measuring" the economic value of volunteer labor. Section 4 uses the best available data to demonstrate how such methodologies can be used to accord an economic value to volunteering and thereby throws some light on the contribution of volunteering to employment and output for a wide cross-section of countries with varying income levels. Section 5 summarizes our conclusions and presents the research implications

2 A Survey of Related Literature

The literature on volunteering is vast and rich, but disparately scattered across the social sciences. An underlying objective of the survey would be to tie together the endless discourse, thus providing a much-needed unifying structure. This would necessitate identifying the common threads, to link the literature on the economics of volunteering, well grounded in labor economics and public choice theory, with the reverberating themes in similar studies conducted across the other social science disciplines. While section 2.1 and 2.2 give insights into the heterogeneity existing around volunteering by focusing on the wide range of definitions and the typology for volunteering, section 2.3 provides an overview of existing studies on volunteering, and section 2.4 delves in-depth into the economics of volunteering.

2.1 Definition

Finding a workable definition for volunteering is not an easy task as activities are very diverse and complex. Part of the research problem therefore is to define the contours of the subject of research by localizing distinctions to related areas. The problem here is that depending on the question researchers wish to address, their subject of research is defined accordingly. This means that with a large number of scholars working on this issue, the variety of used definitions is equally immense.

A list of criteria along which lines individual definitions of volunteering may differ has been compiled by Davis Smith (1999):

- **Notion of reward**: issue whether volunteer should be undertaking the activity for purely altruistic reasons or whether incentives such as exchange and reciprocity should also be included and material and non-material reimbursements less than the value of the work provided should be allowed.
- **Notion of free will**: volunteering should be un-coerced but question whether volunteering based on peer pressure and social obligation should be included.
- **Nature of the benefit**: there should be a beneficiary other than (or in addition to) the volunteer but there are differing opinions as to whether friends, neighbors, extended relations are allowed as beneficiaries or whether the beneficiary has to be a complete stranger to the volunteer.
- **Organizational setting**: some definitions only include volunteering in formal (organized) settings, others also include informal (one-to-one) volunteering.
- **Level of commitment**: some definitions demand a certain level of commitment and regularity in volunteering, others allow for one-off voluntary activities to be included.

Even though definitions differ according to the individual characteristics selected within the above categories, these categories can be seen as a first conceptual framework in broadly defining volunteering.

While individual voluntary action (on a one-to-one basis) is of high significance, most operable definitions focus on the institutionalized, i.e. formal form of volunteering. According to the Johns Hopkins University Nonprofit Sector Project (JHUNSP), rather than focusing on the activities of volunteering "it is the structure and operation of an organization that provide the most rational basis for definition" (Smillie, 1995, p. 34). In the structural-operational definition Anheier and Salamon (1998) identify five characteristics which non-profit organizations must share:

- **Organized**, i.e. they possess some institutional reality.
- **Private**, i.e. institutionally separate from government.
- **Nonprofit-distributing**, i.e. not returning any profits generated to their owners or directors.
- **Self-governing**, i.e. equipped to control their own activities.
- **Voluntary**, i.e. involving some meaningful degree of voluntary participation.

The third sector is thus defined as encompassing organizations which possess a "reasonable showing" of the above identified criteria. It becomes evident that when focusing on volunteering this definition might not be very useful as the defined organizations only possess some (reasonable) degree of volunteering. The term 'voluntary organization' is therefore misleading in the sense that voluntary labor might not be a significant input to the organization. In fact, it has to be kept in mind that many voluntary organizations are professionalized and are not necessarily significantly volunteer-based. Rather it is found that a major part of volunteering occurs outside of traditional voluntary organizations.[3] As a consequence we find that while a huge bulk of research has been conducted on voluntary or third sector organizations, only a small proportion of these have focused directly on volunteering in a broader sense. Depending on the degree of institutionalization of volunteering chosen for the definition, results may vary substantially.

2.2 Typology of Volunteering

In view of a restructuring of the welfare state and the concept of a 'mixed economy of welfare' in many European countries, volunteering or the voluntary sector in general has gained political weight in the provision of welfare services. It is this potential as a possible welfare provider that has influenced a lot of the literature and research on volunteering, especially in the

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[3] In this context, an empirical study by Badelt (1985) which was carried out in Austria in 1984 and explicitly looked at volunteered time spent in informal and formal volunteering, revealed that a dominant part of voluntary labor occurs outside of formal organizations. A relation of 2.5:1 was estimated for informal volunteering versus formal volunteering. Badelt specifically points at the low significance of voluntary labor within traditional, large and well-known NPOs (Badelt, 1985).

Western world. It has to be emphasized, however, that other than in welfare-oriented services volunteering can be found in a wide variety of activities. These include self-help groups, engagements in recreation, environment, philanthropy, religion and politics. The nature of volunteering is influenced by a country's economic, social and political characteristics and its stage of development (Davis Smith, 1999; Gaskin et al., 1996). Depending on the country in which volunteering is analyzed, research interests will therefore differ.

In fact, differing academic interests in the third sector have created two "parallel" universes in the literature: (1) one branch focusing on such organizations in the 'North' (often termed 'non-profit' or voluntary organization); and, (2) the other branch examining these organizations and their activities in the 'South' (termed generally as 'non-governmental organizations'). The literature emanating from the 'South' has focused on the growth and evolving role of NGOs in the developmental processes, suggesting its transformational potential, and viewing it as a key actor alongside the state, local government, foreign and private donors. In contrast, research from the 'North' has focused on the organizations themselves, viewing the concept as a distinctive subject of research (Salamon and Anheier, 1992 and 1997), and concentrating on its role in service delivery and welfare provision, rather than on advocacy or social change (Billis, 1993; Salamon, 1994).

While the growth of such disparate strands in the literature may be in response to the vast disparity in the scale and order of problems of rich and poor countries, they may both be struggling, in different ways, to deal with a similar set of issues. However, despite their increasing importance, NGOs in the South remain dimly understood, as much of the available theory underlying such 'third sector' organizations have still been developed in the 'North', and then applied to quantify and understand similar organizations in the 'South'.[4] Thus, there exists a need to fill in the gaps in our comprehension of the role and contribution of the third sector in developing countries.

Davis Smith (1999) points out that volunteering will probably be more formal and organized in economically advanced countries compared to the case in less developed countries. The economic stage will also influence the types of volunteering. While emphasis in the industrialized world lies on philanthropic activities, volunteering in developing countries often takes the form of informal support systems and networks of mutual aid and self-help (Davis Smith, 1999). In a study of the voluntary sector in Sri Lanka, James (1989) finds that the majority of NGOs is involved in social-service activities (day-care center, aid to the needy) and human capital formation (education, health care) whereas the emphasis on art, culture and environment was comparably low. This can be explained by the fact that the latter activities are income-elastic, i.e. high levels of income and standards of living are needed to make organizations focusing on

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[4]   Much of the available theory has emerged in the context of the advanced Western societies, which often takes as given the existence of developed markets and democratic political systems (Weisbrod, 1977; Rose-Ackerman, 1996). The problems with the application of such Western models to the developing world has been well documented, and could have potentially dangerous implications given the objectivity required for third sector research.

these activities viable. James' data further revealed that a considerable number of organisations is engaged in the provision of social overhead capital (building roads, water tanks, wells, sanitation facilities) and "activities specifically designed to raise the incomes of their beneficiaries – including the provision of working capital and market outlets" (James, 1989, pp. 195-196). Voluntary organizations thereby take on activities expected to be provided by the public sector. It becomes evident that the types of volunteering differ across countries; this seems to be especially true when comparing low-income with high-income countries.

Other than this categorization, Robinson and White (1997)[5] find that within this large variety of different types of volunteering voluntary organizations can be divided into two large sub-groups depending on whether they serve a public service function.

- **'Expressive'** groups do not serve a public service function, as they merely act to express or satisfy the interests of their immediate members. This group includes recreational and sports associations, social clubs, and scientific societies.
- **'Social influence'** groups on the other hand "seek to achieve a condition or change in a limited segment of society." They include pressure groups and groups established to perform a public service.

It has to be kept in mind, however, that 'expressive' groups, while directly merely serving the interests of their immediate members, also (intentionally or unintentionally) serve a social function by helping to establish a social infrastructure and improving social integration.

2.3   Overview of Existing Studies

While a substantial amount of research on volunteering has sprung up in the industrialized world in the last decades, the voluntary sector in developing countries has not received the same attention. This may have led to the paucity of basic descriptive data on volunteering for developing countries, clouding the conceptual understanding of this sector, as well as, the theories on the emergence of volunteerism in the developing world (Anheier and Salamon, 1998). Yet even in the industrialized countries the existence of plentiful singular studies based on differing definitions and approaches does not allow for a coherent analysis of volunteering. As Rauschenbach (1999, p. 72) puts it, there is "a dilemma of a relative large number of unrelated individual research projects in this area of investigation."

Furthermore, as stated earlier, a large part of the literature on the third sector focuses on voluntary or third sector organizations. A consequence of this is that research on volunteering is often limited to accounting for voluntary activities within these organizations. However, since voluntary organizations are not necessarily build on volunteer labor to a great extent, this type of research is very limited. In particular, voluntary activities taking place in informal settings are

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5   Also compare Schuppert (1991) on this issue.

often ignored. Despite limitations, however, these studies do give first insights into the scale, scope and characteristics of volunteerism. In the following, three of the more comprehensive studies are briefly outlined.

Eurovol 1994

This two-year study (1993-1995) aimed at improving the information basis of volunteering in Europe. The researchers involved especially saw the need for reliable comparative data on volunteering within Europe. Countries included in *Eurovol* were the French-speaking part of Belgium, Bulgaria, Denmark, Germany, Great Britain, France, Netherlands, Republic of Ireland, Slovakia and Sweden. The chosen definition of volunteering concentrated on volunteering within organizations but was at the same time broad enough to include, e.g. self-help groups (Gaskin et al., 1996).

It was found that averaged across eight countries (Denmark and France excluded) 27 percent of the population engaged in volunteering in 1994. The diversity within these countries is reflected in the percentages of volunteers ranging between 12 percent in Slovakia and 38 percent in the Netherlands (Gaskin et al., 1996; Paulwitz, 1999).

The Johns Hopkins Comparative Nonprofit Sector Project

The project was launched in 1990 to improve the overall understanding of the non-profit sector across various nations. In 1994 the first phase of the project was completed for eight countries. The analysis has then been extended to include a further 20 countries. In 1998, data for 22 of the 28 countries were available. The countries included were the Netherlands, Ireland, Belgium, France, UK, Germany, Spain, Austria, Finland, Czech Republic, Hungary, Slovakia, Romania, Australia, US, Israel, Japan, Argentina, Peru, Brazil, Colombia and Mexico. Across these 22 countries an average of 28 percent of the population volunteered time in nonprofit organizations. As pointed out, this project only included volunteering within nonprofit organizations (which fitted the structural-operational definition of NPOs) (Salamon, Anheier and Associates, 1998; Salamon and Anheier, 1997 and 1994).

Time Use Studies

Other than comparative analyses, time use studies have been carried out in several countries. While not focusing on volunteering *per se*, these studies provide reliable approximations of the average time spent in voluntary activity and the percentage of the population involved in such activities. A time use study in Germany indicated that 17 percent of the population in 1991/1992 engaged in some voluntary activity (Ehling and Schmidt, 1999). The definition for volunteering used in this study included only the 'institutional' form of volunteering

carried out within formal organizations and excluded volunteering in private networks, e.g. between households.

2.4   The Economics of Volunteering

Economists tend to attribute the production of economic services either to the private, profit-oriented sector or to the public sector, ignoring largely the potential of the third sector. This 'ignorance' is reflected in the fact that research on the voluntary sector from the viewpoint of political science, sociology and social politics is rather abundant, while the relevant theories from an economic perspective cannot be explicitly identified or have not been sufficiently explored. The lack in economic interest also has the effect that the potential attributed to this sector (such as its supportive role of public services, its innovating power and its capacity to improve the quality of services) have not been or cannot be economically tested and supported (Badelt, 1985).

This deficit on the economics of the third sector also adversely affects the economic knowledge of volunteering. This section will probe deeper into the economic literature to identify relevant theories that may be applied to enrich our understanding of the economics of volunteering. Specifically, section 2.4.1 provides a macroeconomic perspective on the major theories to explain the rapid emergence of the voluntary sector; section 2.4.2 probes into the microeconomics of volunteering to provide the theoretical underpinnings underlying all such broad issues and debates; and section 2.4.3 presents a synthesized theoretical framework to yield an econometric specification which could provide empirical insights into the individual decision to supply voluntary labor.

2.4.1 A Macro Perspective

The past two decades have seen a dramatic change in the division of responsibility between the state and the private sector in the delivery of goods and services. A glaring example of this is the case of public good provision. While the real world has seen a huge change in emphasis in the delivery of public goods, with increased involvement of an emerging "third sector", academic understanding lags way behind the practical initiative in this area.

Traditional economic analysis centered on the role of private (profit-oriented) business while having incorporated the ever-increasing role of the government in economic events still pays insufficient attention to the private, nonprofit sector -- an omission, which would leave the analysis starkly incomplete! The public sector literature assumes profit-seeking private providers are unsatisfactory vehicles for public good provision, hence leaving it as the sole domain of the government. In reality, the rapidly emerging private, non-profit sector, often motivated[6] by a

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[6]   Section 2.4.2 provides an in-depth insight on the various motivations guiding the decision to supply volunteer labor.

sincere desire to help the beneficiaries of the public good (often the very poor), is increasingly supplementing, and have, in some cases, displaced the traditional role of the state.

The civil society argument for the distinctive role of voluntary organizations in public good provision is central to current development thinking, and stresses on the relative developmental contribution of all three societal agencies – states, markets, and social organizations. The major theories that explain the rapid emergence (both in scale and importance) of voluntary action and third sector organizations, as classified by Anheier and Salamon (1998), are the following:

Demand-side Theories

Associated with the work of Burton Weisbrod (1977), this dominant theory in the literature links the existence of voluntary organizations to the persistent demand for public goods that fails to be met by either the market or the State. Thus, the emphases on an expanded role for voluntary organizations in service provision evolve due to state and market failures. Market failure in profit-driven commercial organizations may result in case of any service provision to the vulnerable population groups, who lack the resources to pay for services, or in case of provision to remote areas where the cost of provision is high, and thus, poorly served by the market. Further, due to lack of competitive pressure, state organizations have also proven to be inefficient, offering poor quality service, and being unresponsive to customer needs. When state and markets fail to provide adequate coverage, voluntary organizations may emerge to do much-needed gap filling. Drawing on this theory, Weisbrod predicts that more diverse a society greater the diverse demand for public goods, and hence larger the size of the nonprofit sector. The strongest example in support of this theory represents the case of India, where a profusion of NGOs have sprouted to probably satisfy the unmet "demands" of the world's most heterogeneous society.

Supply-side Theories

An alternative explanation behind the emergence of voluntary action accords a principal role to entrepreneurs committed to *supply* the unsatisfied demand for public goods. However, the motivation for the growth of such agencies may not be wholly altruistic as it may hope, implicitly or explicitly, to serve a by-product instrumental function! For example, religious organizations that try to entice the disadvantaged by providing the desperate needs for education, health care, and basic human necessities, may be one way of winning adherents to their faith. Another important supplier are external relief and developmental organizations that often have to create counterpart agencies in developing countries, primarily due to their frustration with the central governments ability to pursue such developmental objectives.

Partnership Theory

The partnership or voluntary failure theory (Salamon, 1987) argues against the competitive and conflictual relationship between the State and the voluntary sector as posited by the market-government failure theory. The voluntary sector is not viewed as an alternative to State provision of public goods, but propounds strong theoretical justification for the State and the 'third sector' to grow in parallel, and in close cooperation with one another. Not only do both sectors represent responses to the same social pressures, but may complement each other in provision by providing an unique attribute that the other lacks. For example, the two sectors may grow hand in hand by utilizing the State's ability to generate resources in conjunction with the voluntary organizations' ability to respond to local needs. This theory, popularized as the PPP (public-private-partnership) theory, has gained much credence in recent times, as governments are increasingly recognizing the contribution made by the third sector organizations, and are joining hands to become partners in promoting the social and developmental objectives.

The Social Origins Approach

This approach stems from a belief that growth of voluntary organizations is deeply embedded in the social, economic, and political dynamics of a society, and hence its rapid expansion cannot be attributed to any single factor (unmet demand, or supply of committed entrepreneurs). The emergence of such organizations may be rooted in the broader structure of class and social groups in a society. For example, vibrant voluntary organizations are more likely to emerge when the hold of traditional elites can be effectively challenged by the strength of the middle class. Thus, State under-provision of social services may not lead to the emergence of successful voluntary organizations, if traditional elites have the power to thwart the growth of both sectors.

What is evident from these four alternative viewpoints, is that volunteers, who form the core of such non-profit and non-governmental organizations, undeniably make an important contribution to society. However, since voluntary work is often performed without any monetary recompense (even though volunteers often have high skills and opportunity costs of time), the standard labor supply theory accounts for only a minor part of such volunteering behavior. On the brighter side, the recent openness among economists to question the premises of their discipline has contributed to the willingness and effort in accepting some "non-economic" activities (like selfless human behavior or mass political action) and institutions (like charities, churches, clubs, political parties) within the realm of economics.[7] In the next section we present an overview of this interesting literature.

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[7] However, to explain altruism and non-profit enterprises within the framework of economic theory would require a richer conception of individual utility functions – a base in cognitive psychology that incorporates the power of ideas and emotions in motivating human behavior (Rose-Ackerman, 1996).

2.4.2 A Micro Perspective

Theoretical explanations on the determinants of volunteer time include several types of models, some of which are presented below. While these models primarily explain the microeconomics governing the individual decision to volunteer, the insights generated could be interpreted to predict important macroeconomic consequences of how the changes in the economy[8] or public policy[9] may influence the supply of volunteer labor.

Classification 1: The Microeconomics of Volunteering: A Typology of Models

Section #	The Models	Motivation
2.4.2.1	a. Public Good Model	To increase the supply of the public good
2.4.2.1	b. Private Consumption Model	"Altruism" or "warm glow" utility from giving
2.4.2.1	c. Impure Altruist Model	Synthesis of model a. and model b.
2.4.2.1	Investment Model	Gain labor market experience, skills, and attributes
2.4.2.2	The Opportunity-cost-of-time Model	Does the volunteers' contribution in charity work EQUAL the opportunity cost of the volunteers' labor time?
2.4.2.3	The Crowding Out Hypothesis	Does government provision crowd out voluntary contributions, and vice versa?
2.4.2.4	Who Volunteers?	Are volunteers' primarily individuals with a low opportunity cost of time (as posits model 4)?
2.4.2.5	Altruism and Voluntary Giving	(i) Individuals differ in their attitude towards volunteering history affects; (ii) Altruistic history affects current giving.

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[8] For example, what will be the impact of an increase in potential wage rate of women on volunteer labor supply?

[9] For example, if the opportunity cost of volunteer time is measured by the after-tax wage rate, it may be interesting to explore how changes in the average and marginal tax rates may affect the supply of volunteer labor.

2.4.2.1 The Decision to Supply Volunteer Labor: Core Theories

From a microeconomic standpoint, an important question to probe would be to inquire into what induces people to volunteer? While some individuals are motivated because they feel truly altruistic, there are several other motivations, both economic and non-economic, that may play an equally dominant role.[10] These motivations were well summarized by Mueller (1975) in noting the four personal benefits from volunteer work. Two are associated with "psychic income": volunteers get to enjoy the joy of altruism, and they get to enjoy the consumption of social prestige associated with their position. Two other benefits maybe directly observable: volunteers may influence the composition and allocation of charitable output for personal or familial benefit, and they may get an opportunity to develop labor market skills (or at least signal their skills to potential employers). Some of the seminal approaches adopted to model such motivations guiding the decision to volunteer are presented below.

The Benchmark Models: The Public Good and Private Consumption Model

When economists theorize on what motivates volunteers to make charitable contributions of time or money, the underlying modeling framework significantly affects the empirical interpretation. The two benchmark models most often used are the **public goods model** and the **private consumption model**. The *difference* between the two lies in the underlying assumption regarding *what motivates volunteers to give*.

In the public goods model a desire to increase the public good motivates contributors to give, and thus a charitable gift is meaningful only if it increases the supply of the public good. In the private consumption model, the act of giving itself motivates contributors to give, and thus a charitable gift is always meaningful. Researchers often mix the two motivations to create probably a more realistic view of the world, in which contributors are motivated by both what their gifts produce as well as how giving makes them feel. Andreoni (1990) modeled such mixed motivations in his **impure altruist model**.

The above rigorously modeled microeconomics theories on individual behavior can be linked to provide the broader macroeconomic theories in the literature. For example, there is a widely held belief that greater the heterogeneity of a population, larger would be the size of the nonprofit sector (Weisbrod, 1977). The economic intuition can be drawn by adding a political economy component to the public good model, as heterogeneity would make it more difficult to generate support for government provision of an agreed-upon collective good. Hence, the job of

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[10] Viewing its rapid growth in the transforming global economy at a broader level, the non-economic reasons that emerge, include: the desire to make changes in a society or organization; the desire to advocate and support specific causes; the desire to monitor what is going on, arising out of a distrust of institutions; the desire to improve ones quality of life by meeting others; the desire to become more powerful and influential by networking in the right social circles; the desire to participate in a worldwide cause or movement as volunteerism becomes more international. While economic *reasons* would include: the desire to obtain experience that would be useful in exploring other vocational and professional opportunities for paid work.

producing the 'collective goods' considered important by various population groups falls to nonprofit organizations that give voice to various population perspectives.

The Investment Model

Volunteering may not be for free, as even a nonprofit firm has to recruit, train, and supervise volunteers (Steinberg, 1990).[11] Individuals may thus be motivated to use volunteer labor as an investment mechanism. In such cases, individuals volunteer purely motivated by a desire to gain labor market experience (accumulate human capital), or to signal their ability to prospective employers. This widespread belief that volunteer work enhances an individual's employment prospects was empirically verified by estimating human capital earnings equations using a recent Canadian data set that suggests that the return to volunteering amounts to 6% - 7% of annual earnings (Day and Devlin, 1998).

Empirical Insights

Menchik and Weisbrod (1987) provide a unifying framework in which both consumption and investment motivations influence volunteer labor supply. They model the supply of volunteer labor to philanthropic donees as a consumption model positing volunteering as an ordinary consumer good and an investment model assuming volunteering as a way of obtaining on-the-job experience are presented. The modeling framework yields reduced form equations that express the quantity of volunteer labor supplied as a function of: i). its opportunity cost, ii). the individual's potential or full income, iii). the cross-price opportunity cost of contributing money rather than time, iv). the person's preference vector for money income and charitable giving, and v). the degree to which government is supplying the services to which the volunteer labor would contribute. On testing the model, using an U.S. national sample survey reported by Morgan, Dye, and Hybels (1977), in the aggregate and for four disaggregated industry groups, a negative association is found between net wage rate and hours volunteered, when other things are equal. Another interesting result reveals that contributions of time and money are complements, and not substitutes.

However, Schiff (1985) estimates volunteer labor supply functions to establish that while (*i*) attitude towards philanthropy, (*ii*) giving by others, (*iii*) government spending on social services, and (*iv*) the level of need (proxied by percent poor) have significant effects on *donations of money*, they had no significant effect on volunteering (or, *donation of labor time*).

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[11] Emanuele (1996) estimates a demand curve for volunteer labor that is indeed downward sloping.

2.4.2.2 Charity Wage and the Opportunity Cost of Time

The economic value of volunteering is often measured by imputing volunteer labor the opportunity cost of the time off work. The validity of this approach depends crucially on whether the opportunity cost of the volunteers' time <u>equals</u> the value of the volunteers' production in charity.

Motivated by the private consumption model

For volunteers who derive a "warm glow" utility from their gifts of charity, there could be two possible explanations for such inequality:

i.   A volunteer may perform a service for charity that is "less valuable" than what he or she provides to the general labor market. An accurate example would be a doctor working in a soup kitchen.
ii. A non-profit firm may be able to pay less compensation to their workers than for-profit firms in similar services. For example, a doctor accepting a lower payment for his services to a non-profit hospital.

In both cases, the charity wage that the nonprofit would have to pay someone else to perform the task is lower than the volunteers' opportunity cost of time.

Motivated by the public good model

The public good model would not allow a volunteer to contribute to charity if he or she provides less than his or her opportunity cost of time. Hence, a doctor rather than work in a soup kitchen, would work in the for-profit sector and donate the proceeds to charity.

Empirical Evidence

There exists some empirical support for the private consumption model as non-profit workers may earn lower wages than similar for-profit workers (Goddeeris, 1988). However, Preston (1989) supports the public goods model by demonstrating that workers supply labor to nonprofit organizations at lower than market wages in return for the opportunity to provide goods with positive social externalities.

2.4.2.3 The Crowding-out Literature

The public goods model assumes that the altruist cares only about the consumption levels of the recipient and not about the level of their own gifts. Such pure altruist models predict that government spending on the public good will crowd out voluntary contributions (Warr, 1982;

Roberts, 1984; Bergstrom et al., 1986). Given the important policy implications of such predictions, it stimulated a flurry of empirical work to test the validity of the crowding-out hypothesis. While some researchers have found partial evidence of crowding out, Day and Devlin (1996) show that government spending may affect the decision to volunteer, but it has no effect on the hours volunteered. Furthermore, the type of government expenditure would also affect the relationship. For example, while reduction of government spending on health care increased the number of volunteers, in the case of certain other activities decreased spending resulted in reduced volunteering. Thus, most empirical studies find little support for the crowd-out hypotheses suggesting that government provision does not substitute for private giving. However, it is important to note that most of the empirical work provides incomplete measures of crowding out as they examine only monetary contributions. On incorporating the contribution of volunteer labor, Duncan (1999) establishes, using a national survey on charitable giving, that omitting volunteer labor reduces the estimate of crowding out by 27 per cent.

2.4.2.4 Who Volunteers?

The standard labor supply substitution behavior predicts that people will volunteer less when the opportunity cost of time (wages) is high. This would make us expect, a priori, that volunteers would comprise largely of people with low opportunity cost of time – low-wage workers or the jobless. Freeman (1997) shows that for most part volunteers are people with higher potential earnings and greater demands on their time, often highly educated, professionals, and managers. The only characteristic that fits the time-cost interpretations is sex, since women are slightly more likely to be volunteers than men. The opportunity-cost-of-time model also predicts that a household member with higher wages would volunteer less than a member earning lower wages. However, the family pattern of volunteering indicates that volunteering is positively associated among spouses: the most common pattern is for both to volunteer or for neither to volunteer.

The above empirical studies that test the microeconomic volunteering behavior demonstrate that an individual or household decision to *give or not give* may be influenced by a complex interplay of various socio-demographic characteristics, and economic circumstances. Most importantly, these studies reveal that *something more* than a substitution response to wages underlies the different volunteering behavior among otherwise similar working age persons.

2.4.2.5 Altruism and Voluntary Giving

Adopting solely a materialistic view of voluntary giving leaves many questions unanswered. For example, irrespective of their income level, many households give nothing to charity. This leads us to discuss the role played by altruism in the individual decision to volunteer. According to the theologies central in all major religions, people should give to others worse off

than themselves, without the expectation of any material gain for their acts of kindness (in their earthly lives).[12]

Volunteering motivated by such a moral obligation to "give something back" to society could be viewed upon as a "conscience good or activity" (Freeman, 1997). Stark (1995) notes that such "social norms" as guilt and obligations are powerful forces in determining behavior and could be easily inculcated amongst children, either directly, by parents sending them to certain schools or churches to influence the child's "preference shaping", or indirectly, by "demonstration effect", i.e., teaching a desired behavior by setting an example. While Stark's focus was primarily on interfamily and intergenerational transfers, it could be readily adopted to have societal relevance by inculcating amongst its citizenry views such as Plato's, i.e., "each citizen should play his part in the community according to his individual gifts".

Individuals and households differ in their attitude towards altruism. Smith et al. (1995) suggest that "attitudes" towards giving may play a substantive role in the decision to give or not to give. Households with the 'wrong attitude' may not give regardless of their income and other variables that affect giving. Further, a household's "altruistic history" may also affect its current giving decisions.

Altruism is probably a continuous variable, but is difficult to measure in practice. Individuals may, however, be grouped (based on past histories of giving) into "low altruism" and "high altruism" people. While low altruism individuals may never give, high altruism individuals may always give something regardless of their economic circumstances. Thus, Smith et al. (1995) views household giving decision as a two-stage process. In the first stage, the economic agent decides whether to give or not give; in the second, he or she must decide on the level of giving. Econometric results suggest that altruism positively influences a household's decision to give, but does not affect the size of the gift; in contrast, household income may not influence the decision to give, but does have a significant impact on the size of the donation once the decision has been made.

Other than altruism and exchange motives, Stark (1995) identifies an additional non-altruistic component that may induce individuals towards charitable activities, and that is, an "aversion to unfairness". Stark suggests on whether we could assume a threshold level of unfairness (e.g. inequities in society) beyond which the "haves" are "elicited" into philanthropic work to improve the plight of the "have-nots". However, as he suggests, an unexplored and important area of research would be to probe into what determines this threshold and why it differs so widely among individuals and societies.

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[12] See Sullivan (1985) for discussions on this issue.

2.4.3 A Theoretical Framework

In this section, we present a modified model based on Freeman (1997) and Menchik and Weisbrod (1987), as well as, derive the econometric specification that may be estimated to probe into the manifold motivations behind volunteering (as posited by the various models presented in section 2.5.2.2 - 2.5.2.5).

The dependent variable that we seek to explain is the amount of time volunteered to collective-type goods. This decision grows out of an optimization process, in which the willingness to donate to a "worthy" cause is weighted against the opportunity cost of donating. The willingness to donate is seen as a function of (a) individual's preference for philanthropic giving, (b) the potential income from a full-time labor activity[13], and (c) the extent to which the government is devoting resources to similar collective goods. Whereas, the opportunity cost of donating depends (d) on how much the individual could earn in the market (net of taxes), and (e) the price of close substitutes and complements.

An individual facing an exogenously determined wage-rate, w, is free to adjust leisure and volunteer time, in accordance with person's income and prices faced. Consider a person who maximizes utility (U) dependent on goods (G), leisure (L), and charity (C), where charity is produced by two inputs volunteer time (T_v) and donations (D) :

$$\text{Max} \quad U(G, L, C) \qquad (1)$$

Subject to

$$C = C(T_v, D), \qquad (2)$$

an income constraint $G + D = WT_w + Y$, and a time constraint $T_w + T_v + L = 1$, where $W =$ wages, $T_w =$ time worked, $Y =$ nonwage income, and $D =$ charitable donations.

Incorporating Ben-Porath's (1967) model of the production of human capital, two specifications are considered:

$$C = C(T_v, \quad) \qquad (2a)$$

$$C = C(W_v, \quad) \qquad (2b)$$

According to (2a), the volunteer time is the same for all workers; thus volunteering should fall for higher-wage workers, or as wage increases. Specification (2b) depicts volunteering on

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13 To keep our conception simple and basic, the modelling framework is restricted to that of a rudimentary static case, but extending it to a dynamic setting would also necessitate including equally important factors as expected future earnings or the potential future pitfalls associated with volunteering. For in-depth insight into some such dynamic models see Stark (1989).

human capital indexed by wage, which can offset the increased opportunity cost of time in the supply decision, and thus substitutions of donations for time volunteered as wages rise. Equation (1) and (2a) yield a derived demand for volunteer time, which expressed in linear form:

$$T_v = a + bW + cY + v, \qquad (3)$$

where, b depends on positive income effects and negative substitution effects, and c is the income effect of a charitable activity. The additional term   is an individual specific taste variable, positive for persons who obtain a greater utility from volunteering (altruistic desires), and negative for those who get a disutility from volunteering.

Using U.S. data from 1990, Freeman (1997) estimated variants of equation (3), to show that volunteers have characteristics associated with higher values of time: higher family income, greater age and years of schooling, marriage and more children. In addition employment is positively associated with volunteering.

However, this behavior is masked by some gender disparities: while men who work more hours are more likely to be volunteers, women display a rough U-shaped pattern. Thus, women working the lowest and highest number of hours report greater volunteering, than those in the middle of the hours-of work distribution. Higher volunteering by individuals working for greater number of hours suggests that there are several non-economic factors that guide the decision to volunteer: attitudes, tastes, ability, energy, and so on. In summary, the deeper insights generated by the various theoretical models and empirical results, display that the process underlying the individual decision to supply volunteer labor time is extremely complex and needs to be explored very carefully. Additionally, these insights provide us with some important questions that need to be incorporated in our survey design for consequent empirical analysis to measure the economic contribution of volunteering in a cross-country setting.

3 Measuring the Economic Value of Volunteering

As pointed out before, the exclusion of volunteer work from labor force and national accounts merits serious attention. Volunteer labor is seriously undercounted because underlying that is the fundamental question of what is *value* and *of what value* to society (Beneria, 1999). National income accounts and labor force statistics are primarily designed to gather information on remunerated economic activity. Since the statistical concept of being "at work" has been historically defined in terms of engagement in work for "pay or profit", the contribution of "unpaid volunteer work" remains outside the gamut of such national and international statistics. Attempts to improve the measurement and thereby the perceived value of unpaid labor have been going on for decades, but little of the results have been incorporated into the national labor statistics or the national income accounts.[14] The U.S. Department of Commerce has only recently begun to separately report contributions made by volunteers to the economic output of the nation, while other nations lag behind (Weisbrod, 1988).[15]

Insufficient information on the scale and characteristics of volunteer labor has the effect that the full potential of the resource 'volunteer labor' cannot be mobilized to the greatest possible extent. The lack in solid data and a comprehensive understanding of the aspects of volunteering negatively affects public policies as policymakers are left in the dark as to what the full consequences of their policies would be on the supply of volunteer labor (Weisbrod, 1988). However, on the brighter side, the evolving time-use literature provides a rich resource base to formulate a methodological framework to correct such biases in underestimation of volunteer work.

How then can the economic relevance of volunteering be portrayed given the background that production values of volunteer labor are not accounted for in the GNP? A first step towards a better understanding and recognition of volunteering is to measure the extent of voluntary labor. An imputation of a value to volunteering will then reveal its economic significance. The next subsections will look at methods for economically measuring voluntary labor.

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[14] Not only does it face purposive resistance, but also ignorance and indifference. There are critics who argue that it would be a waste of resources to gather more accurate data, or that such work is too qualitatively different, or that the effort is theoretically misguided.

[15] The Independent Sector (IS), an umbrella organization for institutions included in the "third sector", provides periodic estimates of volunteer labor. The IS estimated that the value of volunteer labor provided to organizations (including non-profits, for-profits and governments) in 1993 was $182.3 billion (Rose-Ackerman, 1996).

3.1   Methodological Progress

This section discusses the methodological progress made in measuring "unpaid labor" that could be incorporated in designing our framework to assess the economic value of volunteer labor. The initial impetus to include "unpaid work" in national income accounts came from the international women's movement confronting the societal under-valuation of women's contribution to societal well being.[16] The First World Conference in Nairobi in 1985 was instrumental in initiating the lead taken by the Statistical Office of the United Nations Secretariat in promoting the revision of national accounts to incorporate the contribution of unpaid women's work. The recommendations suggested the development of supplementary or "satellite accounts" that would permit the generation of "augmented" GNP estimates (UN, 1989). The sole purpose of these augmented estimates was to measure unpaid production of goods and services and to provide indicators of their contribution to welfare. This can be done either:

1. By using time as a unit of measurement – as in time-use surveys.
2. By imputing a monetary value to time inputs or to the goods and services produced.

The question on which unpaid activities to include would be determined by Margaret Reid's third party principle, which refers to all unpaid activities that can be performed by a third-party for pay. Despite definitional ambiguities and criticisms that the third-party principle assumes the market as a model of economic activity, it still represents an important step in setting up an international standard definition that would allow cross-country comparisons.

3.2   A Conceptual Framework

Since various analogies can be drawn between the contribution made by volunteers and that by women in the household, some of the methodological progress made in documenting "unpaid work" would be equally applicable in our narrower focus on volunteer labor. The steps to measuring the economic value of volunteer contribution would, first and foremost, require an identification of the contributors. The next step would involve distinct exercises conducted on the following fronts:

i. Revision of data gathering methods: The objective would be to capture in greater accuracy the contributions made by volunteer labor to national income, employment and output. At this stage, time-use surveys would be carried out in the various countries to provide the empirical base for the task ahead.

ii. Designing innovative methods to measure the value of volunteer work. The focus is between differentiating between input- and output-related methods, and in elucidating the advantages and difficulties with each.

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[16]   The effort mounted by women in New Zealand in the mid-1980s resulted in a question about volunteer time being included in the 1986 census of population (Waring, 1988)

Two alternative approaches could be used in measuring the value of volunteer labor[17]:

1. Output-related Method: This is based on the imputation of market prices to goods and services produced by volunteer labor. It requires a method for imputing a value to the produced good or service, and deducting the cost of inputs from it. There are, however, two significant limitations to this approach. First, voluntary organizations often do not have data on their produced outputs available. Second, in cases where data are available, it can be difficult to assign an economic value to the produced outputs as market prices for these products might not exist. This is the case when goods and services produced do not have equivalents in the market. How, for example, would we value the output of self-help groups or the creation of social capital in terms of market prices? Another output-oriented approach, typically used in cases of non-market production, measures the value of volunteering not by applying market prices but rather by applying the involved factor-costs. This may lead to potential underestimation as one of the main factors involved in the production of the output is volunteer labor, which is unpaid and thus does not involve any costs (Badelt, 1985). Lastly, a big hindrance in using this method may be an empirical one, as it involves tedious efforts to collect detailed time-budget data, hourly wages, and input and output prices.

2. Input-related Method: This is based on an imputation of value to labor time, and thus is more explicit in documenting the time needed for a particular work. The following estimation methods may be used for the purpose:

   a. *Global substitute method:* This method uses the cost of hiring a paid worker to do the job; the problem lies in the fact that it may give the lower-end estimates.
   b. *Specialized substitute method:* This approach uses the average wage of a specialist with appropriate skills for the task; problems may arise as it may generate high-end estimates.
   c. *Opportunity cost method:* This approach uses the market wage that a volunteer is forgoing to perform the unpaid work. This would yield a wider range of estimates depending on the skill and opportunity wage of the particular volunteer. However, problem arises as similar volunteer work performed by a doctor will be imputed a higher value than that performed by an unskilled worker.

Any of the alternative approaches could be incorporated in measuring the economic value of volunteer labor. A review of the pros and cons of the various approaches makes us lean towards adopting the opportunity cost method in imputing a value to volunteer labor. In theory, the opportunity costs of volunteering can be analysed within a time allocation model.[18] In practice, the time invested in voluntary labor can be measured in time use analyses such as the Eurovol 1994.

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[17] For details see Badelt (1985), Beneria (1992) and Fraumeni (1998).
[18] Compare Badelt (1985).

Here individuals or households are selected on a representative basis and asked to keep time diaries in which they note down the activities carried out throughout the day. The hours spent volunteering can then be estimated from the obtained information in the diaries and multiplied with the average hourly wage to obtain an approximation of the average opportunity costs.

While the input-oriented approach offers significant methodical advantages when used on an empirical basis compared to the output-oriented method, it also has a few limitations. Weisbrod (1988), for example, argues that this method can lead to an overstatement of the value of volunteer labor. According to him "people may be less productive as volunteers, and, in addition, those who actually volunteer may be less productive in the marketplace than the average person who chooses paid work" (Weisbrod, 1988, p. 133). The critique is not directly against the approach *per se*, as the time invested for volunteer labor indeed gives a good estimation of the quantitative significance of volunteering, but rather against the assumption that the opportunity costs of volunteering are equivalent to the earnings of an average non-agricultural worker.

Further limitations of the input-oriented method are discussed by James (1989) who sees a weakness of the approach on the basis of the motivation for volunteering. Underlying this critique is the assumption that a motivating factor for engaging in voluntary work can be found in the private material benefits that volunteers sometimes receive for compensation. As defined earlier, volunteer labor is sometimes recompensed by small compensations, which according to the definition of volunteering should be valued below the market-price of the voluntary activity. According to James these material benefits can cause problems when applying the input-oriented method: When the resources and costs of these benefits have already been included in the accounts of the organizations, the imputation for volunteer services as used in the approach can lead to double-counting.

In Sri Lanka, e.g. volunteers engaged in *shramadana* (work camp construction) receive a subsistence allowance, usually in kind. This allowance can sometimes be considered as "a disguised way of paying a competitive wage that would otherwise be considered to fall below the legally or socially acceptable minimum. In other cases, the value of the goods in kind may be so great that they exceed the going market-wage rate" (James, 1989, pp. 304-305). Other ways in which volunteers can be remunerated are through travel opportunities. Double-counting occurs when the imputation for voluntary services is added to the remuneration of volunteers in the form of payment in kind and travel. "This also means that the apparent factor mix of the organization differs from the real factor mix, with labor costs understated and nonlabor costs overstated" (James, 1989, p. 305).

Another critique of the input-oriented method concerns the 'Eigenvalue' of volunteering, where the volunteer receives personal utility from the voluntary activity. This can e.g. be the accumulation of human capital through on-the-job training, allowing the volunteer to improve his chances on the wage-paying market. According to James, when imputing voluntary services this

training should be included as "a real cost (probably small) borne by the volunteer" due to current foregone earnings and as a "jointly supplied benefit of the NGO" (James, 1989, p. 305).

It should further be noted that unlike compensated labor the marginal product of uncompensated labor might not be always equal to the last hour of leisure that the worker has forgone. Thus, while firms need not select the most efficient workers as volunteers, volunteers too may not have an incentive to apply for uncompensated jobs at which they are most efficient. Much caution and judgement thus needs to be exercised in imputing a wage to volunteer labor that reflects their value as efficient and compensated employees.

4 The Economic Contribution of Volunteering

An important step towards raising the profile of volunteering will be achieved by according an economic value to volunteering, and to ascertain its contribution in national employment and output. In the previous section, we lay out the various methodologies that may be adopted to make this feasible. However, the biggest hindrance in achieving this end is the lack of good descriptive data, especially on developing countries. Hence, an important follow-up of this paper would be to conduct a focussed and innovative survey on volunteering across a rich cross-section of countries, and then use it to generate some reliable measures on the economic contribution of volunteering.

The best available data on volunteering in a cross-country setting was recently conducted by the Johns Hopkins Comparative Nonprofit Sector Project, Phase II (Salamon, Anheier, and Associates, 1998). This survey contains detailed information on the volume of employment generated by the nonprofit sector across 22 countries of varying income levels. Furthermore, this survey also contains important information on the volume of volunteers employed by the non-profit sector. However, since the focus of the project is on the "emerging non-profit sector" and not on volunteering, the survey has not been used to explore either the extent or the economic contribution of volunteering.

We make opportune use of this reliable information on volunteering, by combining it with other relevant economic data (collected from the *World Development Indicators*, *International Financial Statistics*, and the *Statistical Database* of the ILO), to generate some (rough) estimates on the volume and value of volunteering for a cross-section of 21 countries. Additionally, this exercise illustrates how the methodologies explained in section 3 might be incorporated to generate these estimates.

As we mentioned earlier, volunteering is a rapidly growing phenomenon across societies of divergent economic, social, cultural, and political settings. Thus, we present in Table A1 some selected social and economic indictors on the 21 countries in our study. The results reveal that these countries vary widely in terms of per capita income, size (population), labor market performance (unemployment rates), and the role of the government in meeting social welfare needs (columns 4, 5, and 6).

Important measures on the volume and economic value of volunteering are presented in Tables A2-A5 (see Appendix). While the detailed tables could be gleaned for many of interesting insights, some of the most important facts are as highlighted below.

Absolute and Relative Size of Volunteers: In Table A2 we report the absolute number of volunteers working in the non-profit sector (expressed in terms of full-time employment). Since individuals rarely work full-time as volunteers to determine the sheer number that contribute time in voluntary work we would need additional information on the average hours volunteered at the individual level. We also note that collecting this important piece of information would be a crucial feature in our survey on volunteering. However, being currently constrained from obtaining this information for each of the 21 countries in our study, we assume (for the sake of maintaining cross-country comparability) that the average hours volunteered is 4 hours per week.

Incorporating this assumption helps us in extrapolating some important insights on the proportion of the total population and labor force that may be contributing time to volunteer activities.[19] The results are reported in Table A2, column 7-8, while the resulting approximated share of volunteers in total population and labor force is illustrated in Figure 2 and Figure 3 respectively.

The results reveal that volunteering is popular in most developed countries, being the highest for: France (18 %), Netherlands (20%), United Kingdom (19%), and United States (19%). However, some countries that do not adhere to this trend are Austria (5.06%), Israel (5.76%), and Japan (5.54%). Among the developing countries, Czech Republic (9.09%) is the only country that reveals a relatively higher proportion of volunteers, which can be partly explained by their recent political turmoil.
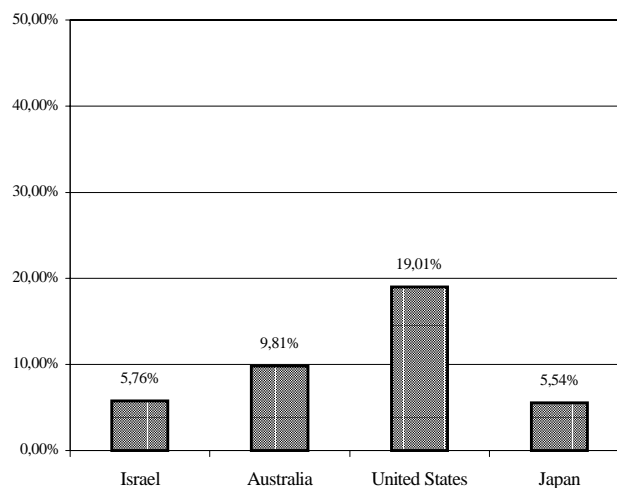
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[19] Do note that the actual proportion may be greater or less that what we predict, depending on whether the average hours volunteered is less or greater than our assumed 4 hours per week.

Figure 1: Share of Nonprofit Volunteers in Total Population, by Region[a], 1995

Panel A: Western Europe
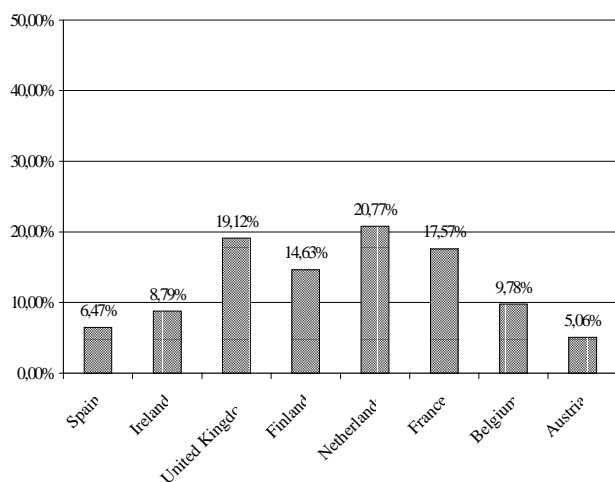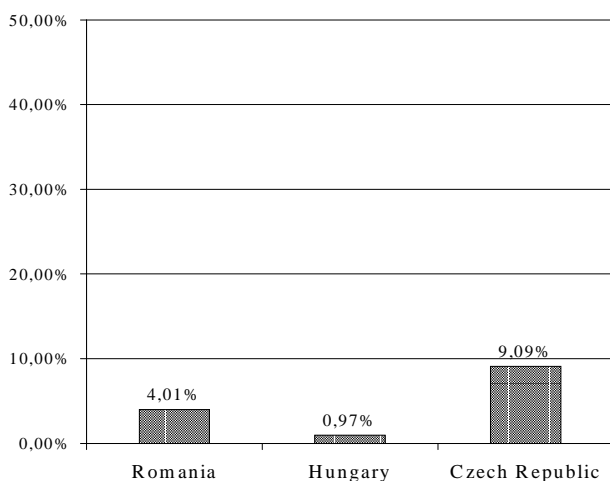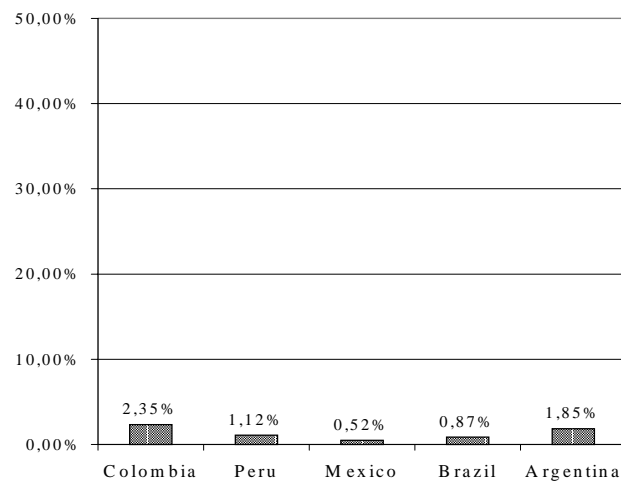

Panel B: Other Developed Countries

Panel C: Eastern Europe

Panel D: Latin America

Source: See Table A2: column 7.

Notes: [a]Countries within a region are arranged in ascending order of their GNP per capita.

Figure 2: Share of Nonprofit Volunteers in Labor Force, by Region[a], 1995

Panel A: Western Europe

Panel B: Other Developed Countries

Panel C: Eastern Europe

Panel D: Latin America

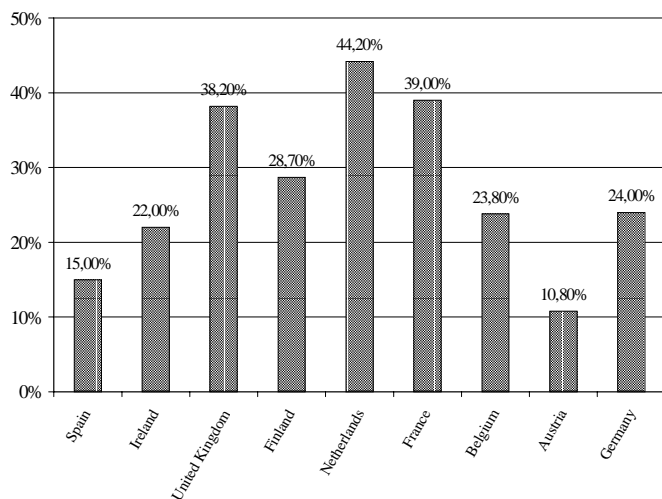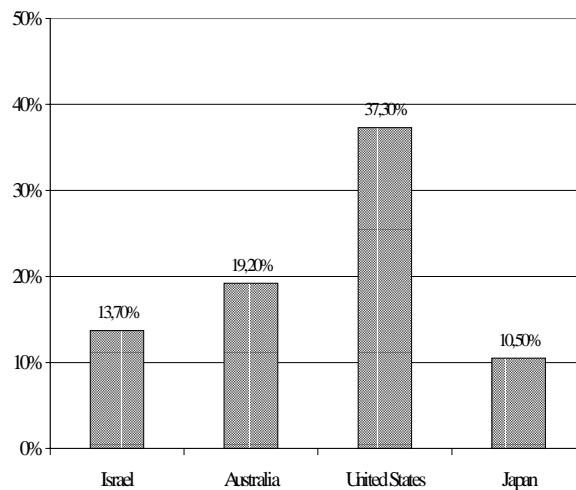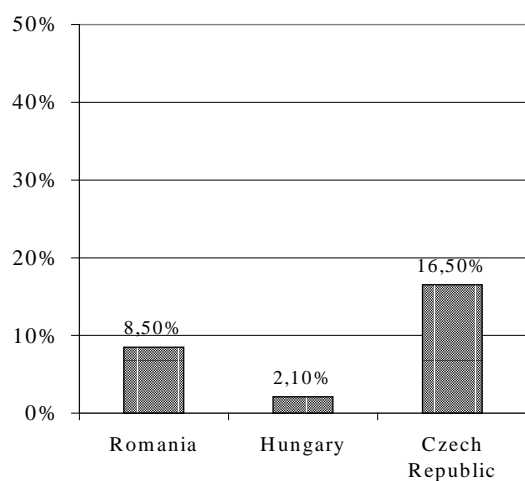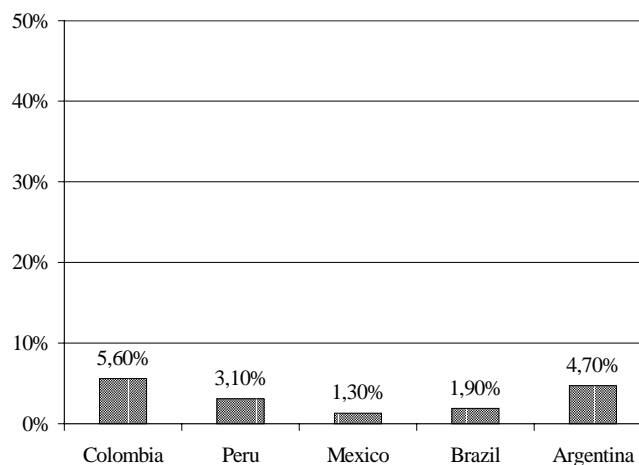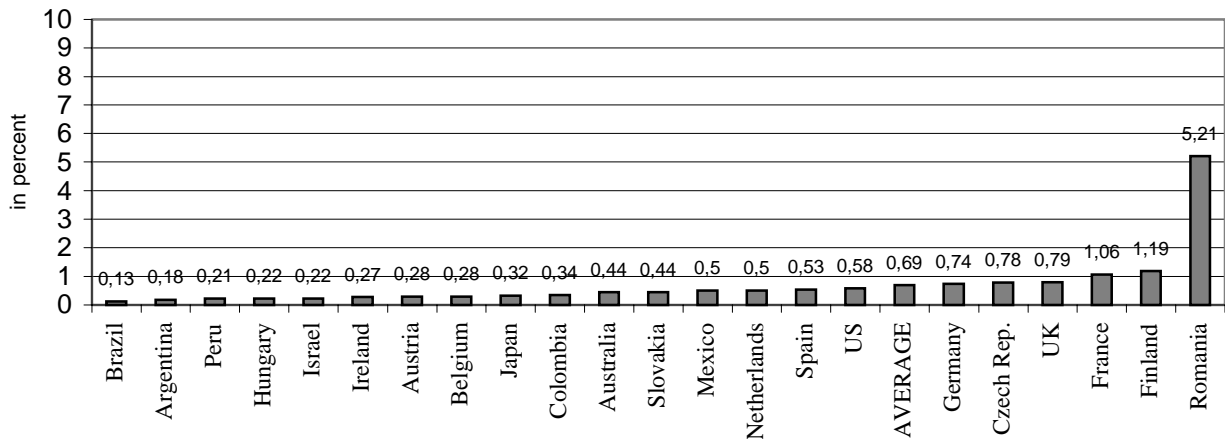Source: See Table A2: column 8.

Notes: *: [a]Countries within a region are arranged in ascending order of their GNP per capita.

Figure 3: Relative Share of Volunteers versus Paid Workers in the Nonprofit Sector


- **Relative Size of Volunteers versus Paid Workers in the Nonprofit sector:** In Table A2, column 3 we report the relative share of unpaid versus paid workers in the NP sector. An equal share of unpaid versus paid workers would imply that volunteers/paid would be equal to 1. Hence, all values less than 1 indicate a higher proportion of paid employees, while all with values greater than 1 indicate a larger proportion of volunteers. While the average proportion between volunteers and paid workers is 7:10, there is a wide disparity around this average. While most countries reveal that their nonprofit sector employs a greater proportion of paid employees, three countries (France, Finland and Romania) display a higher proportion of volunteers in their nonprofit sector.

- **Imputed Value of Volunteering:** Next we use available wage data to accord an economic "value" to volunteering. These figures reported in Tables A3 - A4 use two alternative approaches:

  1. The approach used in Table A3 imputes the minimum wage as the opportunity cost of the volunteers' labor time. It is to be noted that this may generate lower-end estimates, being particularly low for countries with very low minimum wages and wide income disparity.
  2. In Table A4, we assign imputed dollar values based on the appropriate average sectoral wage (the best available -- see the relevant *Notes* at the bottom of Table A4) as the opportunity cost of the volunteers' labor time. This may generate upper-end estimates as all volunteers employed in a particular sector may not necessarily have the skill or productivity of an average paid worker.

- **Contribution to National Income:** Once an economic value has been assigned to volunteering, the relative contribution made by volunteer labor can be ascertained by assessing its share in GNP. These measures are reported in Table A3 (column 7) and Table A4 (column 7). On using the minimum wage as the "charity wage", we demonstrate that a relatively higher contribution is made by volunteers in France (1.53%), Netherlands (1.22%), Australia (0.64%) and United States (0.57%).

- However, using the sectoral wage as the "charity wage" (as reported in Table A4 and illustrated in Figure 4) seems to capture a more accurate picture. It reveals a high relative contribution made by volunteers in Finland (1.76%), France (1.46%), Germany (1.51%), Netherlands (2.83%), United Kingdom (2.58%), Australia (1.27%), and United States (1.68%). Thus, a volunteers' sector of employment may be an important piece of information that should be collected in our survey, as it can be used later to accord a more accurate economic value to volunteering based on the sectoral wage rate, rather than on the average wage rate.

Figure 4: Share of Nonprofit Volunteers' Imputed (using sectoral wage) Earnings in GNP, by Region[a], 1995

Panel A: Western Europe
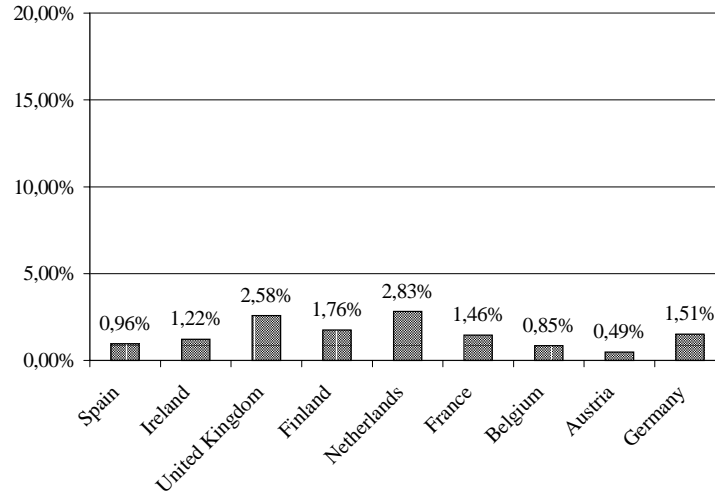
Panel B: Other Developed Countries
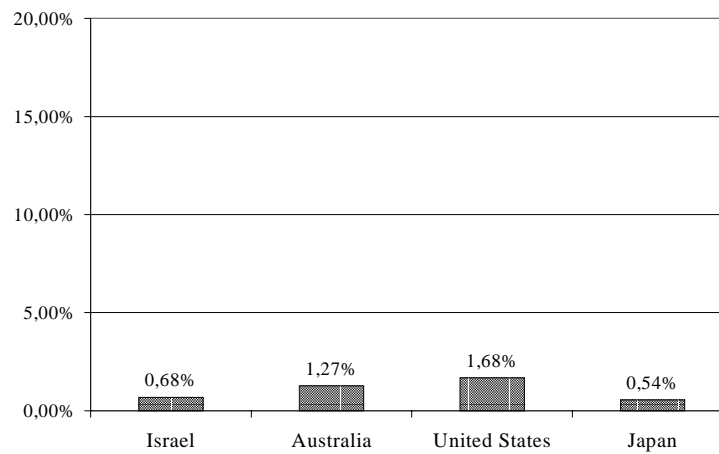
Panel C: Eastern Europe
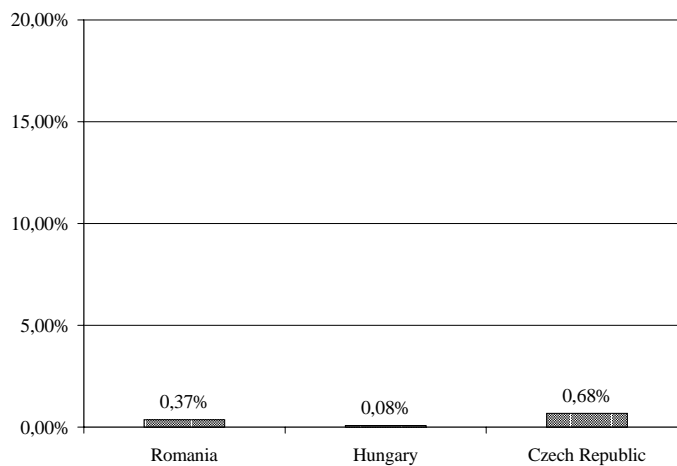
Figure 4 (continued): Share of Nonprofit Volunteers' Imputed (using sectoral wage) Earnings in GNP, by Region[a], 1995

Panel D: Latin America
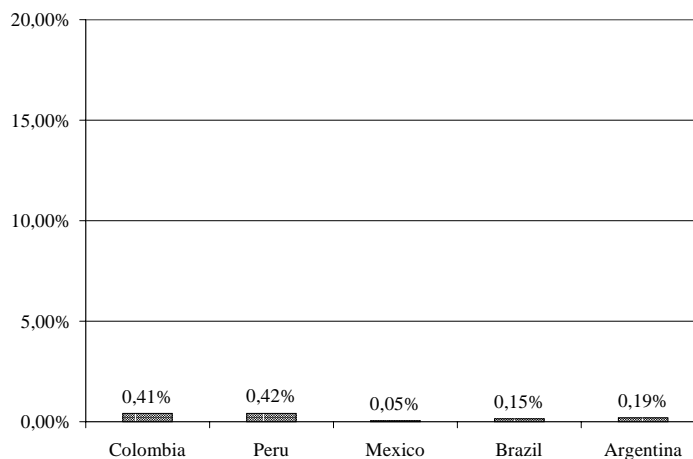
Source: See Table A4: column 7.

Notes: [a]Countries within a region are arranged in ascending order of their GNP per capita.

- **Volunteers' Value Addition to National Output:** The contribution of volunteers to the national economy would be affected by the *productivity* of the volunteers contributed labor time. Countries vary widely in terms of labor productivity, and hence it may be plausibly assumed that volunteers in a particular country may represent the average productivity displayed by the labor force. Using the most cited measure of productivity (the value added per worker in manufacturing), we report in Table A5 the value addition made by volunteers (Column 3), as well, its share in national output. The results show that the contribution of volunteering is most impressive for France (4.06%), Germany (4.22%), United Kingdom (5.57%), and United States (5.78%).

Thus, this section not only generates some important estimates, but also reveals some crucial information that we may need to gather in our surveys to estimate a reliable measure of the economic value of volunteering.

Figure 5: Share of Nonprofit Sector Volunteers' Value Addition in GDP, by Region[a], 1995

Panel A: Western Europe
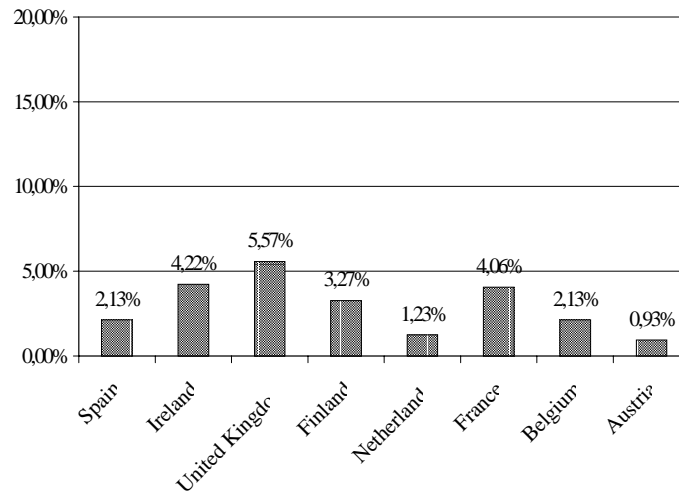
Panel B: Other Developed Countries
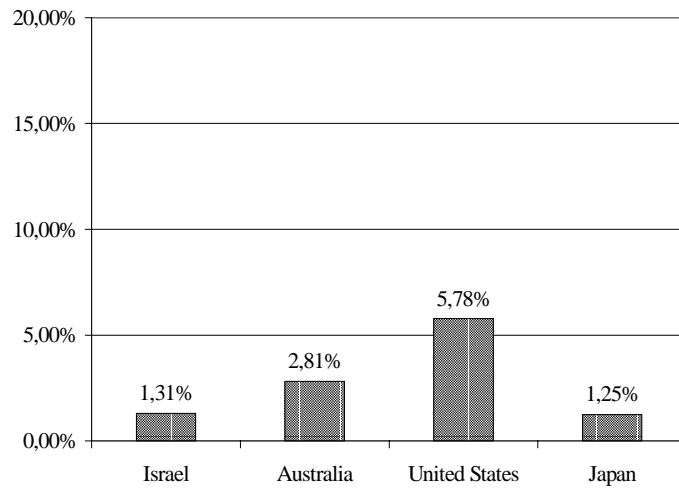
Panel C: Eastern Europe
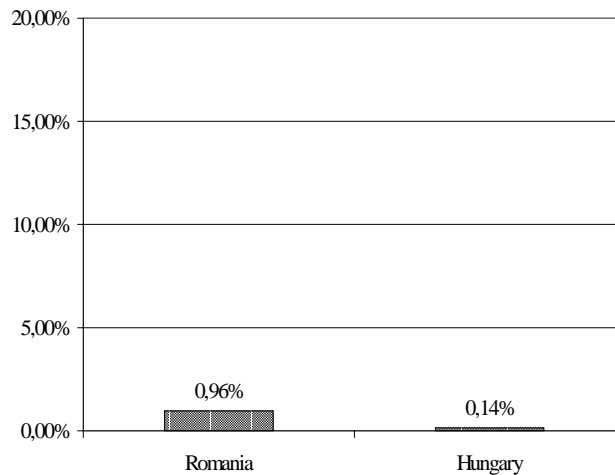
Figure 5 (continued): Share of Nonprofit Sector Volunteers' Value Addition in GDP, by Region[a], 1995

Panel D: Latin America
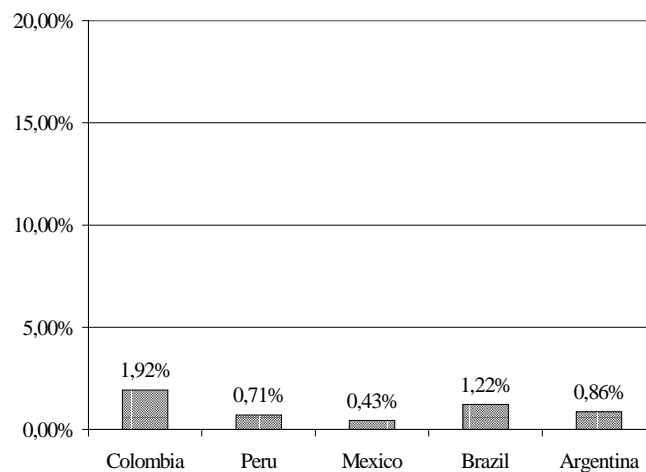
Source: See Table A5: column 5.

Notes: [a]Countries within a region are arranged in ascending order of their GNP per capita.

5 Conclusions and Research Implications

Increased attention has been paid to developments in the third sector in recent years. Yet, despite the social and economic importance attributed to this sector, little hard data exists on this area of research. This is especially true for voluntarism, which constitutes a major force within the third sector. The concept paper highlights how the tools from economic theory can increase our insight on volunteering behavior. The methodology discussed in section 3 provides alternative approaches in according an "economic value" to volunteer labor, as well as demonstrates how these approaches could be incorporated in generating estimates on the contribution made by the volunteers to national output and employment. These measures (presented in Section 4) display that volunteering is a substantial economic activity in most developed countries, and is growing in importance in many developing countries.

Given the significant contribution made by volunteers, an important step towards raising the societal appreciation of volunteering would require cross-country data collection, followed by efforts to assess the economic contribution made by volunteers worldwide. In this context, fundamental questions such as the following need to be answered:

- How extensive is volunteering?
- What are the forces behind volunteering?
- What role does volunteering play in the development process?
- How can volunteering be stimulated?

In view of the complexity and heterogeneity surrounding the research on volunteering (as discussed in section 2), a significant aspect of future work would be to ensure comparability of these studies. Comparability needs to be guaranteed in terms of the definition used for volunteering, as well as the chosen approach and techniques.

Economic analyses conducted using appropriate cross-country data shall shed light on many important directional concerns confronting voluntarism in both the North and the South. Among the fundamental issues that need to be addressed are:

- Why does voluntarism flourish in some, yet languish in other societies?
- Is voluntarism rising or declining in the level of development? Consequently, what are policy implications in either case?
- Does voluntarism play inherently different roles in the developing and the industrialized world?

- A related and important question would be to probe into the relationship between the effectiveness of government and the third sector. Thus, has the third sector been used to promote 'good' or 'bad' governance?
- Finally, will the international connection between third sector organizations in a rapidly globalizing environment lead to the formation of a 'global civil society'; thereby, stimulating knowledge transfers and scale economies and forming a potential and formidable power base?

We expect that research along these lines would unravel many such fundamental questions.

Table A1: Selected Economic and Social Indicators, by Country, 1995

Indicator/ Country	Population	Percent Unemployed	GNP per capita ($)	Public spending on education (% of GNP)	Public Health Expenditure (% of GDP)	Safe Water (% of population with access)	Tax Revenue (% of GDP)	Trade (% of GDP)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Region: Eastern Europe								
Austria	8.047.000	3,7	28.680,56	5,6	5,9	99	33,0	77,6
Belgium	10.136.800	9,3	27.309,78	3,2	6,9	98	43,0	129,9
Finland	5.108.000	17,0	23.804,60	7,6	5,8	98	27,6	67,0
France	58.143.000	11,6	26.295,97	6,1	8,0	100	38,1	44,7
Germany	81.642.000	12,9	29.428,10	4,8	8,1	90[a]	30,0	46,5
Ireland	3.602.000	12,2	15.518,59	6,1	5,2	97[a]	32,4	137,7
Netherlands	15.460.000	7,1	25.739,08	5,2	6,8	100	42,8	99,9
Spain	39.210.000	22,9	14.145,29	4,9	5,8	99[a]	28,4	47,9
United Kingdom	58.606.000	8,6	18.847,50	5,4	5,9	100	33,4	57,9
Region: Other Developed Countries								
Australia	18.063.000	8,5	19.509,98	..	5,8	99	21,3	40,2
Israel	5.545.000	6,9	15.297,71	..	..	99	35,5	80,4
Japan	125.439.000	3,2	41.293,53	..	5,6	99	..	17,3
United States	262.760.992	5,6	26.843,03	..	6,5	100	18,8	24,3
Region: Eastern Europe								
Czech Republic	10.331.000	3,0	4.916,14	5,8	6,9	100	33,1	116,5
Hungary	10.230.000	10,4	4.190,57	5,3	4,9	87	35,6	75,8
Romania	22.681.000	9,5	1.438,12	..	3,6	77	26,2	60,8
Region: South America								
Argentina	34.768.000	15,9	7.943,50	3,3	..	65	11,9	17,0
Brazil	159.346.000	6,1	4.349,08	5,5	..	69	..	17,2
Colombia	38.542.000	8,7	2.021,34	4,0	..	75	..	35,5
Mexico	91.145.000	4,7	2.993,60	4,9	2,8	95	12,8	58,2
Peru	23.532.000	..	2.427,65	..	..	66	13,5	27,8

Source: World Development Indicators, 1995.   a Data from 1982

Table A2: Number of Volunteers – Absolute and Relative Size, by Country, 1995

Indicator/ Country	Nonprofit Volunteer Employment (in FTE)	Nonprofit Paid Employment (in FTE)	Volunteers versus Paid workers	Volunteer Size (no. of persons)[a]	Total Population	Size of Labor Force	Share of Volunteers in Population	Share of Volunteers in Labor Force
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Region: Eastern Europe								
Austria	40.686	143.637	0,28	406.860	8.047.000	3.782.090	5,06%	10,8%
Belgium	99.099	357.802	0,28	990.990	10.136.800	4.156.088	9,78%	23,8%
Finland	74.751	62.848	1,19	747.510	5.108.000	2.605.080	14,63%	28,7%
France	1.021.655	959.821	1,06	10.216.550	58.143.000	26.164.350	17,57%	39,0%
Germany	978.074	1.330.350	0,74	9.780.740	81.642.000	40.821.000	11,98%	24,0%
Ireland	31.650	118.664	0,27	316.500	3.602.000	1.440.800	8,79%	22,0%
Netherlands	321.169	642.323	0,50	3.211.690	15.460.000	7.266.200	20,77%	44,2%
Spain	253.599	475.179	0,53	2.535.990	39.210.000	16.860.300	6,47%	15,0%
United Kingdom	1.120.283	1.415.743	0,79	11.202.830	58.606.000	29.303.000	19,12%	38,2%
Region: Other Developed Countries								
Australia	177.148	400.262	0,44	1.771.480	18.063.000	9.212.130	9,81%	19,2%
Israel	31.916	145.181	0,22	319.160	5.545.000	2.328.900	5,76%	13,7%
Japan	695.097	2.164.533	0,32	6.950.970	125.439.000	66.482.672	5,54%	10,5%
United States	4.994.162	8.554.900	0,58	49.941.620	262.760.992	134.008.112	19,01%	37,3%
Region: Eastern Europe								
Czech Republic	93.903	120.708	0,78	939.030	10.331.000	5.682.050	9,09%	16,5%
Hungary	9.878	44.938	0,22	98.780	10.230.000	4.808.100	0,97%	2,1%
Romania	90.933	17.463	5,21	909.330	22.681.000	10.660.070	4,01%	8,5%
Region: South America								
Argentina	64.257	353.409	0,18	642.570	34.768.000	13.559.520	1,85%	4,7%
Brazil	139.216	1.034.550	0,13	1.392.160	159.346.000	73.299.160	0,87%	1,9%
Colombia	90.756	270.023	0,34	907.560	38.542.000	16.187.640	2,35%	5,6%
Mexico	47.215	93.809	0,50	472.150	91.145.000	35.546.552	0,52%	1,3%
Peru	26.386	126.988	0,21	263.860	23.532.000	8.471.520	1,12%	3,1%

Source: World Development Indicators, 1995.

Notes: [a] Volunteer employment (in the nonprofit sector) is expressed in terms of full-time employment (FTE) in column 1. Interpreting it to reflect the number of volunteers in a country would present a highly distorted picture, as rarely are individuals involved full-time in volunteer work. While the time that an individual contributes to volunteer work may vary, existing studies report that the hours per week volunteered vary, on an average, between 2 - 6 hours per week[b]. In the absence of accurate data on volunteering (which we intend to rectify as a follow-up of this study) for the cross-section of countries in Table 2, we assume 4 hours per week to be the average time contributed by volunteers. We incorporate this assumption in column 4 to shed some light on the sheer number of individuals that volunteer in a country.

[b] For example, national surveys reveal that while 47.7 % of Americans volunteered an average of 4.2 hours per week (Nonprofit Almanac, 1993), 14% of Koreans volunteered an average of only 2.2 hours per week (Korean Volunteer Awareness Study, 1999).

Table A3: Volunteer Imputed Earnings, by Country, 1995

Indicator/ Country	Nonprofit Volunteer Employment (in FTE)	Nonprofit Volunteer Employment (hours/year)	Minimum Wage, 1990-94 ($ per year)	Minimum Wage, ($ per hour)	Volunteer Imputed Earnings (using min. wage)	GNP in market prices (in US $)	Share of Volunteer Imputed Earnings in GNP
	(1)	(2)[b]	(3)	(4)[b]	(5)[c]	(6)	(7)
Europe							
Austria	40.686	84.626.880	a	a	..	230.792.462.336	..
Belgium	99.099	206.125.920	15882,0	7,64	1.573.890.318	276.833.763.328	0,57%
Finland	74.751	155.482.080	a	a	..	121.593.888.768	..
France	1.021.655	2.125.042.400	22955,0	11,04	23.452.090.525	1.528.926.830.592	1,53%
Germany	978.074	2.034.393.920	a	a	..	2.402.568.634.368	..
Ireland	31.650	65.832.000	..	..	..	55.897.948.160	..
Netherlands	321.169	668.031.520	15170,0	7,29	4.872.133.730	397.926.170.624	1,22%
Spain	253.599	527.485.920	5882,0	2,83	1.491.669.318	554.636.738.560	0,27%
United Kingdom	1.120.283	2.330.188.640	a	a	..	1.104.576.643.072	..
Other Developed Countries							
Australia	177.148	368.467.840	12712,0	6,11	2.251.905.376	352.408.731.648	0,64%
Israel	31.916	66.385.280	5861,0	2,82	187.059.676	84.825.825.280	0,22%
Japan	695.097	1.445.801.760	8237,0	3,96	5.725.513.989	5.179.819.163.648	0,11%
United States	4.994.162	10.387.856.960	8056,0	3,87	40.232.969.072	7.053.300.465.664	0,57%
Eastern Europe							
Czech Republic	93.903	195.318.240	..	..	..	50.788.679.680	..
Hungary	9.878	20.546.240	1132,0	0,54	11.181.896	42.869.497.856	0,03%
Romania	90.933	189.140.640	..	..	..	32.618.016.768	..
South America							
Argentina	64.257	133.654.560	..	..	..	276.179.648.512	..
Brazil	139.216	289.569.280	668,0	0,32	92.996.288	693.008.728.064	0,01%
Colombia	90.756	188.772.480	1128,0	0,54	102.372.768	77.906.526.208	0,13%
Mexico	47.215	98.207.200	843,0	0,41	39.802.245	272.851.632.128	0,01%
Peru	26.386	54.882.880	..	..	..	57.127.555.072	..

Sources: (*i*) Calculated using John Hopkins Comparative Sector Project (Col. 1); (*ii*) Based on World Development Indicators, 1995 (Col. 3, 6).

Notes:

a. Country has sectoral wage but no minimum wage policy

b. To maintain an international standard across countries we assume that average hours worked is 40 hours per week.
   Therefore, Col. 2 = Col. 1 * 52 * 40 and Col. 4 = Col. 3 / (52*40).

c. Volunteer (Imputed Earnings) is obtained by imputing minimum wage as an opportunity cost of the volunteers' labor time.
   Thus, Col . 5 = Col. 1* Col. 3. Or, alternatively Col. 5 = Col. 2 * Col.4.

Table A4: Volunteer Imputed Earnings, by Country, 1995

Indicator/ Country	Nonprofit Volunteer Employment (in FTE)	Nonprofit Volunteer Employment (hours/year)	Official Exchange Rate (LCU per US $)	Average Sectoral[i] Wages, ($ per hour)[ii]	Volunteer Imputed Earnings (using sectoral wages)	GNP in market prices (in US $)	Share of Volunteer Imputed Earnings in GNP
	(1)	(2)[iii]	(3)	(4)	(5)[iv]	(6)	(7)
Europe							
Austria	40.686	84.626.880	10,08	13,41 a	1134846460,8	230.792.462.336	0,49%
Belgium	99.099	206.125.920	29,48	11,47 c	2364264302,4	276.833.763.328	0,85%
Finland	74.751	155.482.080	4,37	13,76 a	2139433420,8	121.593.888.768	1,76%
France	1.021.655	2.125.042.400	4,99	10,47 b	22249193928,0	1.528.926.830.592	1,46%
Germany	978.074	2.034.393.920	1,43	17,84 b	36293587532,8	2.402.568.634.368	1,51%
Ireland	31.650	65.832.000	0,62	10,37 c	682677840,0	55.897.948.160	1,22%
Netherlands	321.169	668.031.520	1,61	16,87 a	11269691742,4	397.926.170.624	2,83%
Spain	253.599	527.485.920	124,69	10,13 c	5343432369,6	554.636.738.560	0,96%
United Kingdom	1.120.283	2.330.188.640	0,63	12,23 a	28498207067,2	1.104.576.643.072	2,58%
Other Developed Countries							
Australia	177.148	368.467.840	1,35	12,19 b	4491622969,6	352.408.731.648	1,27%
Israel	31.916	66.385.280	3,01	8,67 a	575560377,6	84.825.825.280	0,68%
Japan	695.097	1.445.801.760	94,06	19,36 b	27990722073,6	5.179.819.163.648	0,54%
United States	4.994.162	10.387.856.960	1,00	11,43 b	118733205052,8	7.053.300.465.664	1,68%
Eastern Europe							
Czech Republic	93.903	195.318.240	26,54	1,77 a	345713284,8	50.788.679.680	0,68%
Hungary	9.878	20.546.240	125,68	1,62 a	33284908,8	42.869.497.856	0,08%
Romania	90.933	189.140.640	2033,28	0,63 a	119158603,2	32.618.016.768	0,37%
South America							
Argentina	64.257	133.654.560	1,00	3,9 c	521252784,0	276.179.648.512	0,19%
Brazil	139.216	289.569.280	0,92	3,6 d	1042449408,0	693.008.728.064	0,15%
Colombia	90.756	188.772.480	912,83	1,71 d	322800940,8	77.906.526.208	0,41%
Mexico	47.215	98.207.200	6,42	1,45 a	142400440,0	272.851.632.128	0,05%
Peru	26.386	54.882.880	2,25	4,36 a	239289356,8	57.127.555.072	0,42%

Sources: (*i*) Calculated using John Hopkins Comparative Sector Project (Col. 1); (*ii*) Based on World Development Indicators, 1995 (Col. 3, 6).

(iii). Based on the Labour Statistics database operated by the ILO Bureau of Statistics, 2000 (column 4).

Notes:

i. Average wages in the following sectors according to the International Standard Industrial Classification (ISIC)-Rev.2/3 of the ILO (1998-2000).

a. Category: Health and Social Work

b. Average Wages in category 2-9, ISIC-Rev.2, (1968)

c. Average wages in Manufacturing

d. Average wages in Major Division 9 (i.e., Community, Social, and Personal Services)

ii. Calculated using wage data from Labour Statistics database operated by the ILO Bureau of Statistics (2000) and the official exchange rate obtained from the *International Financial Statistics* of the IMF (1995).

iii. To maintain an international standard across countries we assume that average hours worked is 40 hours per week. Therefore, Col. 2 = Col. 1 * 52 * 40.

iv. Volunteer (Imputed) Earnings is obtained by imputing the average sectoral wage as an opportunity cost of the volunteers' labor time. Thus, Col. 5 = Col. 2 * Col.4.

Table A5: Volunteer Value Addition, by Country, 1995

Indicator/ Country	Nonprofit Volunteer Employment (in FTE)[a]	Value added per worker in manufacturing, 1990-94 ($ per year)	Volunteer Value Addition (using value added per worker)	GDP in market prices (in US $)	Share of Volunteers' Value Addition in GDP
	(1)	(2)	(3)[c]	(4)	(5)
Europe					
Austria	40.686	53.061	2158839846,0	231.548.698.624	0,93%
Belgium	99.099	58.678	5814931122,0	273.255.088.128	2,13%
Finland	74.751	55.037	4114070787,0	125.922.820.096	3,27%
France	1.021.655	61.019	62340366445,0	1.535.093.112.832	4,06%
Germany	978.074	..	..	2.414.012.006.400	..
Ireland	31.650	86.036	2723039400,0	64.537.698.304	4,22%
Netherlands	321.169	15.170	4872133730,0	397.577.420.800	1,23%
Spain	253.599	47.016	11923210584,0	559.478.407.168	2,13%
United Kingdom	1.120.283	55.060	61682781980,0	1.107.040.010.240	5,57%
Other Developed Countries					
Australia	177.148	57.857	10249251836,0	364.789.432.320,0	2,81%
Israel	31.916	35.526	1133847816,0	86.585.196.544,0	1,31%
Japan	695.097	92.582	64353470454,0	5.137.385.390.080,0	
United States	4.994.162	81.353	406290061186,0	7.033.600.344.064,0	5,78%
Eastern Europe					
Czech Republic	93.903	..	..	50.894.340.096,0	..
Hungary	9.878	6.106	60315068,0	44.662.226.944,0	0,14%
Romania	90.933	3.482	316628706,0	32.841.111.552,0	0,96%
South America					
Argentina	64.257	37.480	2408352360,0	280.778.670.080,0	0,86%
Brazil	139.216	61.595	8575009520,0	703.912.345.600,0	1,22%
Colombia	90.756	17.061	1548388116,0	80.533.094.400,0	1,92%
Mexico	47.215	25.991	1227165065,0	286.140.039.168,0	0,43%
Peru	26.386	15.962[b]	421173332,0	59.066.220.544,0	0,71%

Sources: (*i*) Calculated using John Hopkins Comparative Sector Project (Col. 1);

(ii) Based on World Development Indicators, 1995 (Col. 2, 4).

Notes:

a. To maintain an international standard across countries we assume that average hours worked is 40 hours per week.

b. Data from 1980-84

c. Since value added per worker in manufacturing (column 2) is the most frequently cited meaure of productivity, the total value added by volunteers' is obtained by imputing the figures in column 2 to measure the productivity of a volunteers' labor time. Thus, Col . 3 = Col. 1*Col.2

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