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# **Recyclable Materials Collectors or Environmental Agents?:** A Self-Assessment Exercise

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Abstract: This work presents results of a questionnaire which aimed to assess the profile of collectors of recyclable materials of ACIMAR - Association of Recyclable Materials Collectors of Itajubá, which is located in Itajubá, southern of Minas Gerais state. It is part of the program 'Creation of a network of collectors of recyclable materials in the south of Minas Gerais', funded by the Ministry of Education and developed by the Popular Cooperatives Technological Incubator of the Federal University of Itajubá (INTECOOP/UNIFEI), along with the Mayorship of Itajubá and the University Center of Itajubá (FEPI). The methodology was based on a field campaign based on a questionnaire, which was used to interview 31 associates of ACIMAR. Queries were based on: personal data; previous jobs; formal education; familiar structure; the motivations to become a recyclable material picker; the society's perception on their work; previous capacitations; working time; financial gains; positive and negative aspects of their work, group relationships and life perspectives. Results suggest that 87% declared to have worked on other jobs, while 58% declared that these jobs were formal. Despite the social security aspects, they decided to work as recyclable material pickers, because there were no bosses. Gender distribution is guite homogeneous, with 52% male and 48% female, what indicates an equilibrium not seen in other laboral sectors in Brazil. Some 32% are between 18 and 30 years old, while 29% are between 41 and 50 years old. Around 74% declared to have incomplete formal education up to the fundamental level. Individual monthly income are above R\$ 600,00 (around US\$ 270,00) for 56%. To all of them, their role is very important as it helps in the city waste management and improves environmental conditions, while 62% considered being called as environmental agents rather than collectors of recyclable materials, what suggests a quest for a new professional identity.

Keywords: solid waste; selective collection residues scheme; work and social Psychology; sustainability.

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#### INTRODUCTION

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Collectors of recyclable materials are the worker which lives on waste, through selective collection schemes or on streets and 'lixoes', an yet common sites in Brazilian reality where trash is thrown away without any caution.

According to the National Research on Basic Sanitation, carried out by the Brazilian Institute of Geography and Statistics in year 2000, around 125,281 tons/day of household waste were collected in Brazil; with some 52.8% of Brazilian cities disposing their waste on lixoes [1]. The occupation of recyclable material collector was legally recognized in the Brazilian Occupations Classification (CBO) in 2002, but this formal step was not enough to make it more valued by the society in general, as it is still associated with marginalized people. It is estimated that there are between 400,000 and 600,000 recyclabe material collectors in Brazil, while around 10% of this population is thought to be organized under associative or cooperative schemes [2]. In another survey, 387,910 people declared to work on collecting recyclable and reusable materials as their main finantial activity and to have a fixed household; among them, around 116,417 live in the southeastern region of Brazil, while 36,671 are in Minas Gerais state, where 51.5% are between 30 and 49 years old, male (61%) of black or brown skin (69.7%) and average monthly income of R\$ 569.78 (around US\$ 259.00) [3]. According to this study, there are 16.2% of illiterate among recyclable collectors in Minas Gerais, which is above average general population in Brazil of 9.4% - 21.9% above 25 years old with at least the fundamental education level and 9.4% of this age level holding a degree below university level. This situation illustrates the need of urgent action on the population of recyclable material collectors, as they are even below average Brazilian formal education indicators, in order to allow opportunities of citizenship, income, well being, etc.

As a consequence, collectors fill a marginal role – despite strategic in national reality - on the formal production, living on precarious conditions of the consumer society, being frequently explored by those ('atravessador') who buy their materials and subject to a series of oppression and exclusion means [4]. This statement is reinforced by [5], who stated that the word 'trash', in Brazilian society, is normally linked to what is no longer useful, which was rejected or that cannot be reused under available technologies. Thus: 'Between what is discarded by the consuming population and what is redirected by the industrial sector to other productive processes, there are a series of workers called collectors, separators and recyclers' (p. 67).

These workers are exposed to risk conditions, dealing with the heavy weight of their loads, pulling 'bags' or a great amount of recyclable materials on their bicycles, carts, trunks or horses to perform the collection of these materials. In this duty, they tend to feel humiliated and discriminated by the society, as they are associated with their own mean of life: something which can be thrown away, being apart and moved away from the society's view and social relationships [4].

As a result, when these workers get sick, as they are underemployed, characterized by the degradation of working conditions and lack of social security, they cannot afford to stop working to take care of themselves, as the familiar income relies on their work [6]. Still according to this study, this work in Brazil is tipically carried out collectively, and more than that, familiar, as it is necessary to gather the largest possible amount of recyclable materials in order to keep the minimum finantial conditions for survival and avoid that their kids are without occupation. As such, the family seems to be the fundamental motivating element, as it works as a shield for a

degrading work. Quite often, this condition increases their vulnerability to alcohol, drugs abuse and violence.

On ther hand, according to [5], such environment of social exclusion and the lack of organizational issues of recyclable materials collectors, marked by the exploration of their work, contributes to the recycling as an economic viable activity in Brazil. As a consequence, the undervaluation of this work, along with low values paid to the recyclable materials assure to the buyer's a low investment on the materials which will become new goods. It is evident, therefore, that despite acting as social entrerpreneurs, recyclable material collectors feel prejudice and have low social recognition on the role they represent in economy and environment, for example,

More recently, this condition has been changing in Brazil. The creation of the National Movement of Recyclable Materials Collectors (MNCR), created by the end of 1990's, was an important strategy to drive further changes in public policies and social protagonism. As a result, the organization of these workers has been increasing, along with important rights as environmental agents of urban sanitation and management, sustainability issues and environmental preservation measurements [5]. In 2003, the Federal Government created the 'Interministerial Committee for Social and Economic Inclusion of Recyclable and Reusable Materials Collectors', which has as one of its goals create projects and conditions of dignity and work for this population [7]. According to [8; p. 14], 'in order for the society recognize the recyclable materials collector as an ordinary worker, it is needed to associate the collecting work to positive means'.

As the work with trash interferes so much no only on the identification of the collectors with their own work, but also on the society's view on them, during the 'reworking' of the collector work, it is required a change not only from the society, but the collectors themselves must recognize their identity and project a change of social status which can bring the expected dignity. For [7], recyclable materials collectors are included in the society as they work, but are excluded by the type or work they perform. Their exclusion could be understood as an involuntary consequence, imposed by the dominant social and cultural forces, of reduction or impossibility of a group to develop their right to citizenship. Thus, it involves economic, work and consuming alienations. According to [9], the exclusion also embraces the moral and cultural exclusion. In order to revert this situation, the social inclusion of recyclable materials collectors must include their social, economic and personal integrities. It involves the individual, industrial sector, government policies and the sensibilization of general society on aspects related to the sustainability. Regarding the collectors, measures which reinforce their identification with positive aspects and a definitive social identity are fundamental. In this work, this strategy is similar to the one described in [10], who proposed a series of initiatives of social support network based on the Popular Cooperatives Technological Incubators (ITCPs), universities and local city mayorships. It is also worth planning ways to create associations and cooperatives among collectors, simultaneously with increase of the amount of recyclables, in a way these materials could be sold directly to the recycling industry and avoiding intermediators [5].

Among other government initiatives, special conditions for these collectors groups are desired, towards funding and effective solutions of capacitation, organization, collection, treatment, processing and selling these materials. According to [9], the federal act 5940/2006 instituted the segregation of recyclable materials by direct and indirect federal instances, on the generating site, and prioritizing of donating these materials to formal associations and cooperatives of recyclable materials collectors, which stimulated the creation of such institutions.

Overall, it is estimated around 170 million reais were applied for funding social inclusion and poverty reduction strategies.

In this context, the solidarity economy is a movement which is based on the mobilization of popular groups through collective work, self-management and construction of the so-called social technologies as means to promote citizenship. This movement is thought to be an alternative to the mainstream capitalism, a new way to mitigate working and consumption crisis. The solidarity economy is considered by [11] as a new strategy towards sustainable development with the generation of work, distribution of richness and economic development with protection to ecosystems. Their economic, political and cultural results must be shared by all, without segregation of gender, age or race. This movement implies on the reversion of the capitalist logic while it opposes the exploration of work and natural resources, considering the human being as the main beneficiary of the economic activity.

Locally, it is under way a program entitled 'Creation of a network of recyclable materials collectors in southern Minas Gerais state', funded by the Ministry of Education and coordinated by the Popular Cooperatives Technological Incubator of the Federal University of Itajubá (INTECOOP/UNIFEI). The main goal of this program is to stimulate the conditions for the creation of a network of organizations which deal with the management of recyclable materials in the area of the Landfill of Alto Sapucaí Microrregion Consortium (CIMASAS). Among the proposed activities, it can be mentioned a field diagnosis on the quali-quantitative profile of organized recyclable materials collectors' and their groups, along with the potential for creating other associations and/or cooperatives and a collective of these groups on the CIMASAS area. In this work, only the results of ACIMAR are discussed.

As part of this program and other initiatives, undergraduate students of Psychology, of the University Center of Itajubá (FEPI), have been developing several support acitivities towards recyclable collectors, such as the instrument to be assessed in this work, along with motivation and capacitation initiatives. A profile is used to identify a set of characteristics or competences required to the fulfillment of an activity, role or function. The professional area can be considered as spaces which limits are beyond the technical needs, of the psychological intervention itself and embraces a series of social relationships, values and roles which are part of the work environment, which translates in own culture [12]. In the case of recyclable materials collectors, the portrait of each one and their psychosocial, economic and familiar characteristics allow a profile of their life expectations.

This work is based on the Organization and Work Psychology, described by [13], which 'helps to organize and to legitimate the comprehension that people and social institutions require to work'. The diversity of areas, in this field of Psychlogy, induces the existence of two main phenomena axes which involve psychosocial: the organizations, while social tool for transforming human collectives; and work, as a basic human activity and capable of reproduce his own existence and that of society.

According to [14], the role of Work Psychology on solidarity organizations is to revisit the identity of the worker/associated, strengthening the group link. Methods and processes of self-coscience are considered by [15] as crucial, as they promote a proactive feeling among popular groups, where these individuals may conduct their own future, facing solutions and challenges in order to become active and independent.

ACIMAR - Association of Recyclable Materials Collectors of Itajubá was created on May 2007, as the 'lixao' of Itajubá was closed. Then, people who used to collect recyclable materials there and other collectors were put together in the association. In summary, it is required a common and integrated effort in the Brazilian society in order to mitigate the inclusion of recyclable materials collectors and the concept of social responsibility on one hand and reducing consumption on the other hand. The main objective of this work is to assess the socioeconomic profile of the recyclable materials collectors of ACIMAR, as a requisite to the creation of a network of associations of collectors in southern Minas Gerais state. As specific goals, it can be mentioned the following: maximize the importance of the work done by recyclable materials collectors, along with dealing with the self steem and citizenship of these actors.

## DATA AND METHODOLOGY

This work is based on an exploratory survey. According to [16], this type of research aims to approximate one to the problem, to make it more explicit or to build hypotheses. Its planning tends to be more flexible, as it is interesting to consider different aspects of the phenomenon under study.

A semi-structured interview was applied, based on [17], in order to characterize the profile of the recyclable materials collectors of ACIMAR. For the data collection, the interviewer explained the work to the associates during a meeting and arranged the interviews on a schedule that minimized the disturbance of the collectors' work.

Overall, 31 associates answered the questionnaire, during August 2013, between 18 and 60 years old. Given the uncertain number of associates, which is common in groups such the one under analysis in Brazil, it was virtually impossible to state whether all the associates were interviewed. However, it can be stated that the large majority was reached. Interviews were carried out individually, within the premises of ACIMAR. There was a good atmosphere and interest of the collectors with the interviewer. Some associates gave more than one answer in some 'closed' questions. There was noise and interruptions during some interviews, but they did not prevented the conclusion of the work.

#### RESULTS

The results are grouped in four different classes: work and income; social structure; health and future.

#### Work and income

Regarding previous works, 87% declared to have worked on other professions, while 58% claimed to have had formal jobs. Despite the rights associated with a formal work, they chose to work as recyclable materials collectors. Most of them (55%) said that despite the formal aspects, their income in formal employment was lower than that which they could earn as collectors, which it was similar for 19%. In other words, the legal support was not sufficient to keep them in their formal jobs. Apparently, other reasons justify the choice for an informal work, such as 'not having a boss' and 'not taking orders'.

Results on individual income suggest that around 56% declared to earn more than R\$ 600,00 per month (Figure 1). As a basis for comparison, which does not take the inflation into account during the period, the average income of recyclable materials collectors in Minas Gerais state, during 2010 Census, was of R\$ 569.78, while the minimum wage was of R\$ 510.00 [3]. In terms of aggregated income in the household, 55% declared to have a monthly income above R\$ 1,000.00. Extra income would come from partners, family members, but also from minimum income official programmes, such as Bolsa Família (Federal Government) and Bolsa Reciclagem (State of Minas Gerais), which reach 52% of the answers.

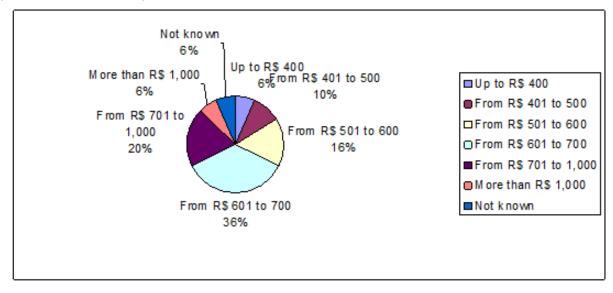


Figure 1: Average monthly income per capita in 2013.

As there are specific roles within the association, which contribute to a fragmentation of the whole picture, 71% of the collectors could not mention the weight of the materials they collect a day. On the other hand, 67% knew who used to buy their materials. Around 35% did not know the prices of at least one type of recyclable materials that the association negotiates, what may give room to manipulation of data and resources. Regarding the working time, 55% declared to work from 8 to 10 hours a day, during 5 to 7 days a week (71%).

## Social structure

Gender distribution is quite homogeneous, with 52% male and 48% female, what indicates an equilibrium not seen in other laboral sectors in Brazil. According to [3], this situation is different to the average on the state of Minas Gerais, where men were around 61% of the recyclable materials collectors identified during 2010 Census. Regarding the age distribution, there was predominance on two classes: 32% between 18 and 30 years old – larger than the average in Minas Gerais average (21,4%) and 29% from 41 to 50 years old.

In terms of educational background, 74% did not finish the fundamental level, which is another reason of vulnerability in the group. This situation illustrates the need of urgent action on the population of recyclable material collectors, as they are even below average Brazilian formal education indicators, in order to allow opportunities of citizenship, income, well being, etc.

In terms of familiar structure, 84% are under a 'stable relationship', recognized by Brazilian laws (i.e. officially married or live together for at least 5 years). Among them, 80% have dependents between 0 and 18 years old. All these dependents are either on day care or study, which is higher than Minas Gerais state average and that of the southeastern Brazil [3]. These figures indicate the compliance of parents with counterparts of social programs, such as Bolsa Família, which conditions the extra income to the presence of kids and adolescents in school, or public policies, such as the Child and Adolescent Code. For 81% of the associates, there is no one above 60 years at home, what may mean a given relief in the familiar income as it is not necessary to spend considerable amounts of money in medicine, which is quite expensive, when compared to average income, in Brazil. In 71% of the cases, there is more than one collector in the family, what reinforces the familiar bond in the picking of recyclable materials.

To the question: 'Why do you work as a collector?', the most common answer was related to maintaining the family (Figure 2). Other answers were associated with the lack of option, autonomous work and to help cleaning the city. If on one hand these positions reveal choices as alternatives to unemployment and marginality, on the other hand, brings a concept of autonomy, self-value and identity with the place where they live.

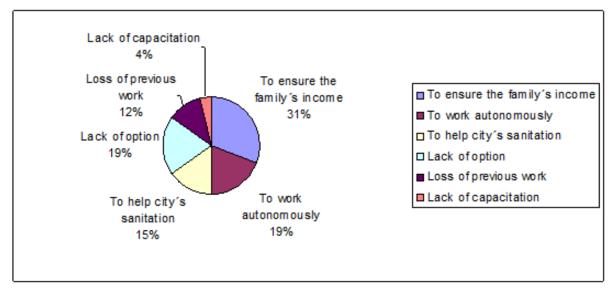


Figure 2: Reasons to choose being a recyclable materials collector.

When confronted with the degree of importance they attribute to their work, everyone considered important being a collector, what confirms the invaluable role they play in society, despite some lack of alternatives, in some cases. All of them considered to be satisfied with their work, as 53% felt productive, which implies an at least partial socioeconomic insertion. For 62%, their profession is relevant as they realize an important function on keeping the city clean and other environmental aspects.

When asked about the expression ' environmental agents', only 29% knew it. However, most of them preferred to be called this way when compared to 'collector of recyclable materials', what may imply a wish of being more valuated by the society (Figure 3).

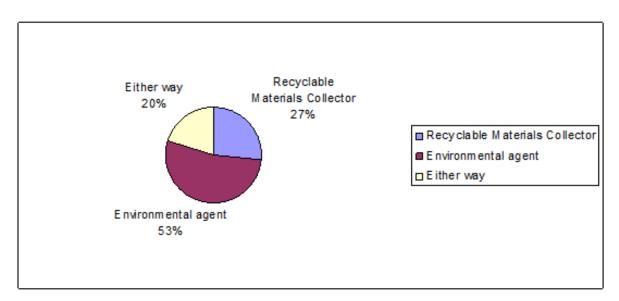


Figure 3: Answer to question: 'How do you prefer to be called?'

Despite being incubated by INTECOOP/UNIFEI since 2007, on different aspects such as finantial, political, management, among others, 90% claim to ever have received any sort of specific training to fulfill their working goals. This result is an important issue for the incubator, as it brings to attention the effectiveness of its approach: have the collectors identified that the support of the incubator is a kind of training or has the incubator been failing in its purpose? From the 3 people who confirmed having any sort of training to develop their professional needs, two said that there was a training related to the time of decomposition of residues. On the other hand, 52% argued that they do not require training and technical help to carry out their activities, while 45% think that training is required some times. Thus, other questions arise: what do the associates understand as training? Is the required knowledge, related to the management of recyclable materials, already incorporated in these collectors?

#### Health

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Regarding health aspects, 81% considered their health as good or great, while 19% considered regular or weak, despite the insalubrious working conditions. Most of them claimed to keep some regularity to physicians and dentists (Figure 4).

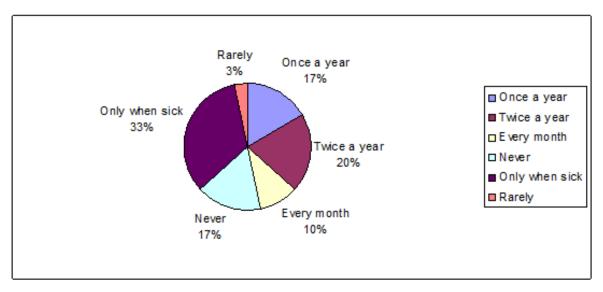


Figure 4: Frequency of visits to physicians/dentists.

Among the most cited actions when dealing with trash, the care with opening and wrapping trash bags is the most common (Figure 5). This behavior is maybe due to the fact they do not know what is inside these bags or perhaps a way to avoid that the population complain about an eventual damage to the bags, what could also affect the image of recyclable materials collectors.

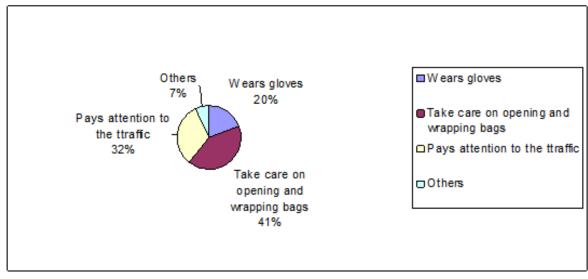


Figure 5: Measures when dealing with recyclable materials to be selected.

## Future

When confronted with near future perspectives, 83% consider working in the association next year. For a 5-year horizon, 40% answered positively, regardless of other pre-conditions (Figure 6). This result seems to reinforce some sort of unrest related to the future of the association.

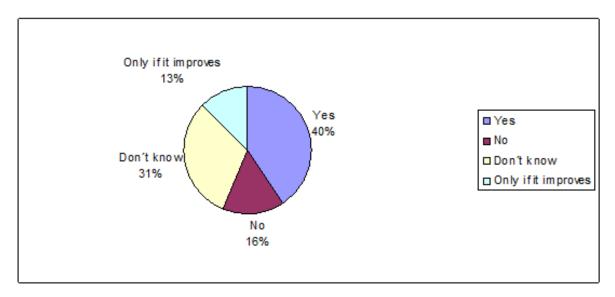


Figure 6: Answers to the question: 'Would you consider working in the association 5 years from now?'

Curiously, when asked about working in a 10-year horizon, the answers were more optimistic, as 46% considered this possibility (Figure 7). This apparently paradoxal result may be linked to a subjective perception of time and to project decisions in long-term response, as opposed to the immediate need for survival.

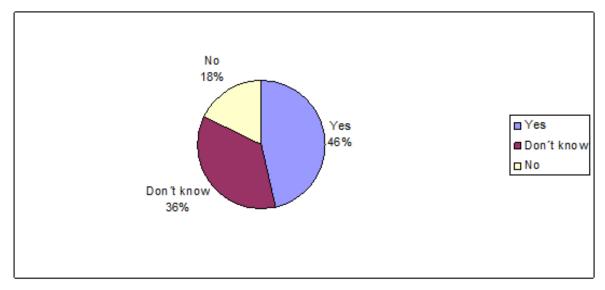


Figure 7: Answers to the question: 'Would you consider working in the association 10 years from now?'

At the end of the interview, free comments were stimulated. Among these opinions, the most cited were linked to i) positive aspects: continuity of association, positive impact on environment; infra-structure, machinery and physical support; ii) negative aspects: lack of union among the group; bureaucracy on payment days; lack of organization and hygiene; mixture of recyclables with non recyclable materials by the population in general and problems associated with the feeding of the group in their kitchen; among others.

#### CONCLUSIONS

Based on the analysis of the questionnaires, it is possible to identify a general profile of the recyclable materials collectors of ACIMAR, southern region of Minas Gerais state, Brazil. Working informally is the main option of the associated collectors, despite some previous chances of formal jobs. Regarding previous works, 87% declared to have worked on other professions, while 58% claimed to have had formal jobs. Despite the rights associated with a formal work, they chose to work as recyclable materials collectors. In other words, the legal support was not sufficient to keep them in their formal jobs. Apparently, other reasons justify the choice for an informal work, such as 'not having a boss' and 'not taking orders'.

Results on individual income suggest that around 56% declared to earn more than R\$ 600,00 per month. In terms of aggregated income in the household, 55% declared to have a monthly income above R\$ 1,000.00. Extra income would come from partners, family members, but also from minimum income official programmes, such as Bolsa Família (Federal Government) and Bolsa Reciclagem (State of Minas Gerais), which reach 52% of the answers.

As there are specific roles within the association, which contribute to a fragmentation of the whole picture, 71% of the collectors could not mention the weight of the materials they collect a day. On the other hand, 67% knew who used to buy their materials. Around 35% did not know the prices of at least one type of recyclable materials that the association negotiates, what may give room to manipulation of data and resources. Regarding the working time, 55% declared to work from 8 to 10 hours a day, during 5 to 7 days a week (71%).

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In terms of educational background, 74% did not finish the fundamental level, which is another reason of vulnerability in the group. This situation illustrates the need of urgent action on the population of recyclable material collectors, as they are even below average Brazilian formal education indicators, in order to allow opportunities of citizenship, income, well being, etc. For 81% of the associates, there is no one above 60 years at home, what may mean a given relief in the familiar income as it is not necessary to spend considerable amounts of money in medicine, which is quite expensive, when compared to average income, in Brazil. In 71% of the cases, there is more than one collector in the family, what reinforces the familiar bond in the picking of recyclable materials.

Regarding the familiar structure, 84% are under a 'stable relationship', recognized by Brazilian laws (i.e. officially married or live together for at least 5 years). Among them, 80% have dependents between 0 and 18 years old. All these dependents are either on day care or study, which is higher than Minas Gerais state average and that of the southeastern Brazil [3]. These figures indicate the compliance of parents with counterparts of social programs, such as Bolsa Família, which conditions the extra income to the presence of kids and adolescents in school, or public policies, such as the Child and Adolescent Code.

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When confronted with near future perspectives, 83% consider working in the association next year. For a 5-year horizon, 40% answered positively, regardless of other pre-conditions. when asked about working in a 10-year horizon, the answers were more optimistic, as 46% considered this possibility. This apparently paradoxal result may be linked to a subjective perception of time and to project decisions in long-term response, as opposed to the immediate need for survival.

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