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Research Article

THE BAYESIANS NETS IN THE STUDY OF FREE TIME. DETERMINATION OF SOCIAL-DEMOGRAPHIC PROFILE OF THE CUBAN POPULATION

Francisco Ruiz , María E. García, Manuel Gómez

Faculty of Sports Sciences. University of Murcia, Spain.

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ABSTRACT

The current study attempts to describe the free time of City of Havana (Cuba) population older than 15 years, distinguishing between word days, weekends and vacation and holiday periods, determining the population's socio-demographic profile. The object population of study numbers over 1,720,445 people (2003), the selected sample is 1,144 individuals. The assumed sample error is ±3% with a confidence level of 95.5%. The technical quantitative analysis of data has been done using the SPSS/PC+ (V 14.0) computer program, which presents descriptive analyses of the different proposed variables, and using the program Elvira for the production of the Bayesian networks. Note in the results, that the availability of free time in work days are normal, increasing some in weekends and, is quite higher in vacation and holiday periods. The age and main activity are shown to be discriminating factors, being elders those with have more free time, and those with higher pro-fession who have less time.

Key words: *availability of time, age, professional activity, Cuba.*

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Corresponding author. Faculty of Sports Sciences. University of Murcia. Campus de San Javier - C/ Argentina, s/n. CP.30720. Santiago de la Ribera. Murcia, Spain.
Email: fruizj@um.es

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INTRODUCTION

The understanding of the role that the use of free time and the practice of leisure has in society (Nuviala, Ruiz Juan & Garcia Montes, 2003; Garcia Fernando, 2006) has acquired more attention with time. Because of the transformations that it suffers through activities, such as sports, it also depends on the social-demographic changes that happen in society in general (Gil, 1986; Caffa-rel, 1992; Lopez Jimenez, 1992; Gomez, 1995; Garcia Ferrando, 2001).

For Waichman (1995) and Ispizua & Monteagudo (1998) it is crucial for a condition to have free time to be used in different kinds of activities, but starting of from the premise that such activities do not constitute a simple complement of the life, as it often does. But they are so indispensable like going to work or other activities, having a strong conditioning between all of them.

In effect, the seasonal availability, as stated by Garcia Ferrando (2001) determines the kind of activity and the frequency that can be done, giving place to one classification in which activities and time periods are identified in the following way: activities that are made daily, on weekends and vacations or in an intermittent way.

Focusing in works that were made in Spain, It is necessary to stand out of Garcia Ferrando´s work (1993, 2003) about free time and sports activities in the Spanish youth. The results shows that, in working days, the most youth have short periods of free time, increasing this availability in weekends. In the same line, the results from Ispizua (1996), in the left side of the Nervion River, In the metropolitan area of Bilbao. In this study highlights the fact that men, besides working in higher percentage than women, they say to enjoy more the free time than women, in labor days and holidays.

In Granada (Spain) Garcia Montes, Hernandez, Oña, Godoy & Rebollo (2001) from the sports habits analysis of people older than 10 years of Granada, and focusing in female population, they get that free time in females is scanty and fragmented, being older women and girls with responsibilities such as family and home. Therefore, this makes them have less temporal availability.

According to the National Institute of Statistics (2004) there are significant differences in the use of free time for men and women, using an average day as example, females have one our less than males, that is because even though they work two ours less than males, females spend three more hours in domestic labor, childcare and household.

In Europe, one of the most important project in this field is the HETUS project (Harmonized European Time Use Surveys) that made the European Office of Statistics (EUROSTAT) between the years 1999 and 2000, in thirteen European countries. In virtue to the opposing results, and taking the days of the year as average, the amount of free time a day is of four and a half hours to six hours. The countries that have more free time are Finland and Norway with close to six hours. However in the opposite end, we found France and Hungary with four and a half to five hours of free time a day. Based on gender, studies have shown that in all the countries studied, males have more free time than women, having extremely marked differences in Hungary, Estonia and Slovenia, with almost one hour at day of difference between genders (Aliaga & Winquist, 2003).

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On the other side of the world, Japan, a country that realizes this kind of studies systematically every five years, results shows that the citizens have larger amounts of free time with six and a half hours, which is higher than that of Europeans. A very important aspect is that the difference of free time between men and women is lower than European countries, even though they follow the same tendency founded in Europe, where men have more availability than women (Statistics Office of Japan, 2003).

In the Unites States, where these studies are done cyclically, results of the last survey conducted in 2003 shows that the average of free time of an American is of five hours, appreciating the same difference between man and women, with 30 minutes more of free time for males, very similar data to those found in European countries, but with differences found in Japan (Bureau of Labor Statistics, US 2004).

After the analysis of these last studies made in Spain, Europe, United States and Japan, we appreciate that these have a significant degree of development in their economies, appreciating standardized behavior, in relation with the magnitude of free time, but also it shows some aspects that are different, such as social- economic characteristics, and history-culture of each region and country.

Now in Latin America, which is made up of countries where the level of Economic development is significantly lower and where the social politics are different, therefore, does not have the conditions for the needed budget for the existance of such things as free time and leisure in society as inherent phenomenon (Tabares, 2001).

The study that was done in the city of Santiago de Chile (Catalán, Thumala & Godoy, 2000) shows that, inhabitants of the metropolitan area have an average of five hours a day of free time, besides that, according to gender, there is a marked difference for men, that have forty more minutes of free time than women.

In Nicaragua, country with a low level of economic development, and with big social problems, the National Institute of Statistics and Sensus (Aguilar & Espinoza, 2000) provides interesting data about the amount of daily free time available, which is a little more than five and a half hours. Regarding to gender, men reaffirms the established trend in previous studies as long as geographical areas studied, men have more than thirty minutes of free time than women.

Therefore, our investigation is guided by the following objectives:

- To acknowledge the availability of free time in different time periods (labor days, weekends and vacations).
- To establish distinctive profiles and probabilistic associations that may crop up or not, between certain selected variables and the social demographic ones (gender, age, level of studies and main occupation).
- To raise, through the construction of a Bayesian net, a methodological procedure that allows the determination of the social-demographic profiles that helps the intake of decisions and strategies, organizational and methodological.

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MATERIAL AND METHODS

This investigation was developed in the city of La Habana (Cuba) which has a territorial extension of 727.4 km2, and according to the 2001 Demographic Yearbook of Cuba, the city has 2.186.632 inhabitants, which means a population density of 3.006 inhabitants by km^2, its socio-political structure consists of 15 municipalities that constitute a socio-historical space.
The population of this study is made up of the total of the individuals, older than 15 years old, that make part of La Habana´s census, which is made up by a total of 1.720.445 inhabitants, which distribution of age and gender is in table 1.

Table 1. *Total population of the City of Havana (Cuba). Description of the sample by age group and sex.*

Ages	Men	Real sample	Women	Real sample	Total	Real sample	%
16-29	207.243	142	204.084	134	411.327	276	241
30-44	270.593	176	295.675	202	566.268	378	33.0
45-64	221.111	147	267.352	170	488.463	317	27.7
65 +	105.337	72	149.050	101	254.387	173	15.1
Total	804.284	537	916.161	606	1.720.445	1144	100.0

I apply a sampling to them polietapico for afijacion proportionally (Levin & Fox, 1996; Rojas, Fernández & Pérez, 1998), that supposed to propose sample decisions in the different stages, completing the selection of the subject in random routes of each geographic area sample. We assumed a ±3% sample error, for a 95.5% of trusting level. Resulting 1.144 persons, and can be observed in the table 1, where we present the distribution according to gender and age group.

All the process of sample designing, given its complexity, was realized by the studies center of population and development of the national office of statics, of the Ministry of Economy and Planning of the Republic of Cuba, entity in charge at a national level of the selection and realization of census and surveys.

The data collection was carried out by a quantitative methodology trough the survey technique, doing personal interviews through standardized questionnaires, which it was Submitted to tests of reliability and as well as four pilot studies.

For the field work, we trained municipal´s recreation promoters as interviewers (university graduates or half level graduates) with a total of 230 promoters which the 15 municipalities of the city has, we made a selection of 80 representatives. Also, 15 recreation methodologists were in charge as supervisors, all long as 8 teachers of recreation and free time of the university “Manuel Fajardo”. The field work was done between March and April of 2003 trough the system of random routes for sampling geographic areas (AGEM) in each municipalities.

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Besides the documental analysis of similar studies, that allowed to penetrate and contrast the results through secondary sources, also, we used quantitative analysis techniques, trough the SPSS/PC (V14.0), that allowed the creation of a database in which the Bayesian, nets were processed, which they have become an area of investigation and application of the last years (Pearl 1988). The bayesians nets have been widely used and quite successfully in many different fields such as medicine (Andrassen, Jessen & Olensen, 1991; Beinlich, Suermondt, Chavez & Cooper, 1989; Mani, McDermott & Valtorta, 1997), in fault diagnosis (Chen & Talukdar, 1993), in prediction (Abramson, 1994; Gu, Peiris, Crawford, NcNicol, Marshall & Jefferies, 1994), in students tutoring (Conati & VanLehn, 1996; Royalty, Holland, Goldsmith & Dekhtyar, 2002) in Biology (Friedman, Lineal, Nachman & Pe´er, 2000) in reliability analysis (Torres-Toledano & Sucar, 1998) or in weather forecast (Kennett, Korb & Nicholson, 2001) among others.

These nets are used to shape the structure of dependence that exist between the specific considered variables (table 2) creating social – demographic profiles. They are a very useful tool for the representation of probabilistic relationships among random variables. Differs from other techniques that, besides not using the SSPS program, and using Elvira (Elvira Consortium, 2002), it does not require any underlying data model and provides graphic information of the structural behavior of the diverse variables. Even, quantifies the degree of relationship between these, using the concept of determined probability, much more easier to read from a semantic perspective.

Table 2. *Description of the database used (No. of variables: 10. Number of records: 1144).*

VARIABLES	DESCRIPTION
Sex	Women and men
Age	Age groups: 16 to 29 years, 30 to 44 years, 45 to 64 years and more than 65 years.
Studies	Educational level achieved: uneducated, primary, secondary, pre-university and university technology.
Activity	Main activities or occupations that develops people: housewives, students, retired, unemployed, self-employed, employee, military and peasant
Weekday	Free time available on working days: low, normal and long.
Weekend	Free time available on weekends: low, normal and long.
Vacation	Free time available on holiday recently, and even normal.

The Bayesian nets are a compact representation of a distribution of probability multivariant. Formally, a Bayesian nets is a directed acyclic grafo where every node represents a random variable and the dependences between variables remain codified in the own structure of the grafo according to the criterion of separation.

Associated with every node of the network there is a distribution of determined probability to the fathers of that node, so that the entire distribution factorize the product of the conditioned distributions associated with the nodes of the net (Céspedes, Rumi, Salmerón & Soler, 2003). From the data analysis point of view, the Bayesian networks are a powerful tool for analysis because do not suppose a particular underlying model, are easy to interpret, they are adaptable and they allow knowledge incorporation in a qualitative way.

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There are a variety of techniques or behaviors to do Bayesian nets, we chose the Elvira program. Is about a new software that is easily to generate static and dynamic explanations, analyzing the effect of the evidence jointly over one or many variables, as well as to measure individually the impact of each finding (Lacave, 2004).

In the Elvira Program (project funded by CICYT and the Ministry of Science and Technology), had researchers from several universities in Spain (Almería, Castilla-La Mancha, Granada, País Vasco and the UNED). Is intended for editing and evaluation of probabilistic graphical models, Bayesians networks, and influence diagrams (Elvira Consortium, 2002).

Elvira counts with one own format of models codification, a reader to interpret models encoded, a graphical user interface for network construction, with specific options for canonic models, exact and approximate algorithms (stochastic) of reasoning for both discrete and continuous variables, explanation of the reasoning methods, decision-making algorithms, Learning models from databases, network fusion etc. its written and compiled in Java, which allows it to work on different platforms and operating systems (Díez, 2004). In order to finance the process, we did the network construction from the information, applying the method of learning network called DVNSST Learning wich conducts a search of the optimal network, using quality criteria of the network, based on the BIC metric.

RESULTS

Availability of free time of the Havana ones

In the analysis of the free time of the Havana, we start from the heterogeneous group that presents the people who comprise the study population. Thus, the age, gender, educational level, and the main activity carried out are the variables that were considered and allows distinguishing trends in behavior and their connections within the social time.

Initially, a descriptive analysis must be done, on the availability of free time, in order to measure it (labor days, weekends, and during vacations) based on the three established dimensions, foremost, from the ranks of hours specified in the questionnaire, bearing in mind a recodification of the variables that provides the categories of little (from 0 to 2 hours), normal (from 3 to 6 hours) and a lot (more than 7 hours). This new group gives us a dimension of analysis, allowing being more objective, because in the previous one, which has so many categories, produces digression of the population in very narrow strips.

Labor days

Analyzing the results of available hours of free time (figure 1), there is not that much difference between little (42%) and normal (41%) although the first presents a percentage point in its favor. By joint these two categories is evidenced that the 83% of the studied population is in little / normal, establishing a marked difference with the category of plenty with 17%. Data shows a clear trend of the population to have an amount of free time available on labor days that could be categorized between little and normal.

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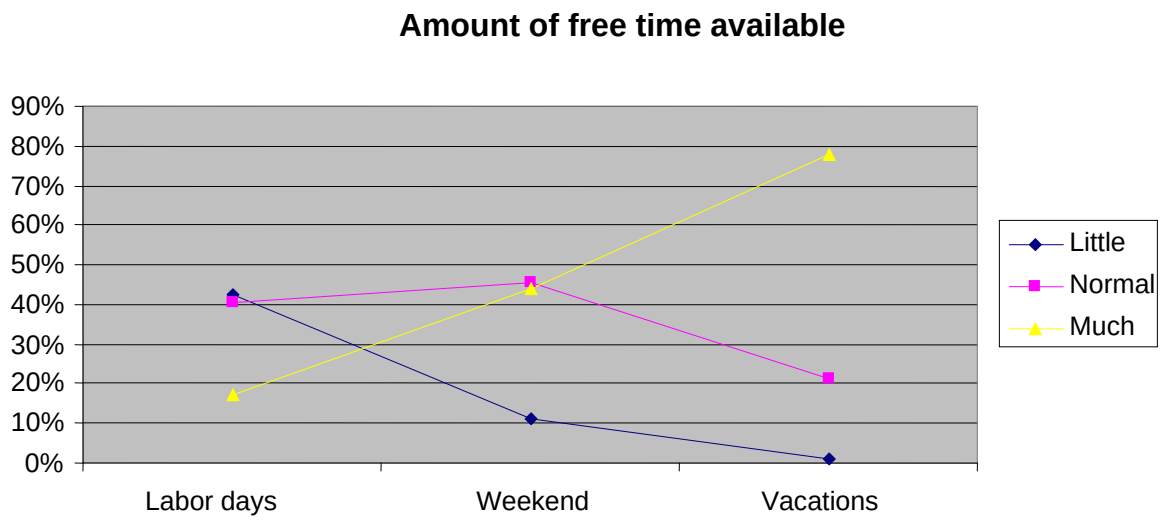
Figure 1. *Free time available to the population of Havana 15 years older than on weekdays, weekends and holidays.*



Weekends

The levels of normal (45%) and a lot (44%), equals the 89% of the population, show the trend of availability of free time on weekends, presented with a minimum percentage difference in values between them, and markedly distant of a little with only the 11% (figure 1).

Vacations

We can see that the category of a lot with 78% of the studied population, marks a substantial difference with relation to the remaining ones, -few and normal-, that place with a modest 21%, and especially the particular 1% that presents in a particular way few, leaving clearly defined that the vacation for most of the people is synonymous of a lot of free time (figure 1)

Relation between the three temporal periods

In the graphical display that provides the net (figure 2), you can see a structure in which are related all the variables involved in this aspect that is being addressed and that is the subject of this analysis.

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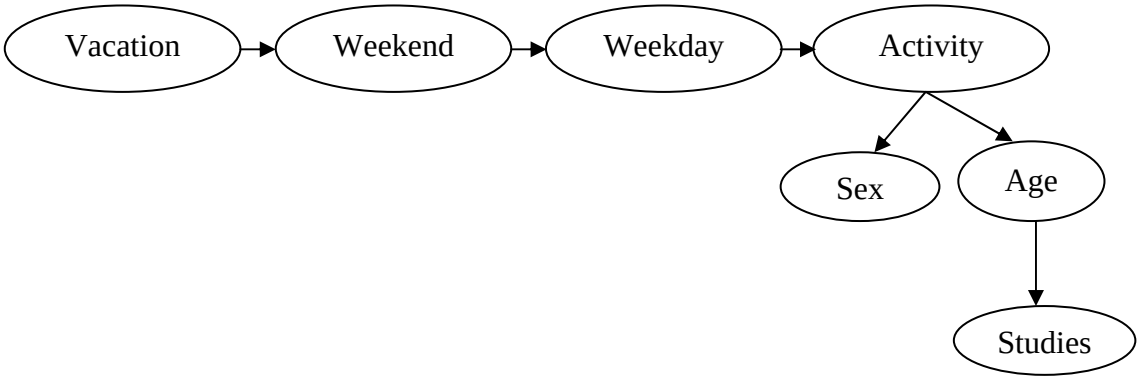
Figure 2. *Bayesian network on the availability of free time for Havana.*



In particular, the dependency ratio that is established between the three periods of free time, with the rest of the variables, is of great importance because allows, in one hand, learn about different aspects of this relationship, and on the other hand, to apply the constraints on those who have less and more free time, create a profile of the studied population.

Then, we can see a relationship of direct dependence between the three variables determining the free time available of the population of Havana, it is to say, that the free time available during labor days is directly related with those on weekends and vacations.

In this way, between the population who say have little free time during labor days increases the likelihood (with thirteen percentage units) of their free time on weekends there is little (24% in front of the 11% of the media) something similar happens during vacations, focusing on this increasing specifically on the normal enjoyment of free time with a 35% in front of the media of 21% of the total population (table 3)

Table 3. *Relationship between leisure time available to Havana during the week with other time periods.*

	Media			Weekends			Vacation		
	Weekdays	Weekends	Vacation	Little	Normal	Much	Little	Normal	Much
Little	42%	11%	1%	24%	1%	1%	2%	1%	1%
Normal	41%	45%	21%	61%	47%	3%	35%	15%	3%
Much	17%	44%	78%	14%	52%	96%	63%	85%	97%

On the other hand, when the population of Havana have shown a lot of free time during labor days there is a probability approaching 100% that both weekends and vacations (96% and 97% respectively) their free time still being a lot, it is to say, more than 6 hours a day (table 3).

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The most significant behaviors indicated by the statistical probability that it presents to the applied conditions, provides the profile of the studied population, which is described for the three time periods analyzed.

Sociodemographic profile of the availability of free time through Bayesian networks

In labor days (table 4) the probabilistic rise, indicate that, those with little free time available, are citizens between 30 and 64 years old who are state employees or military, also characterized by having a lot of free time on weekends and vacations (little or normal).

Table 4. *Conditional probabilities of dependency relationships among variables. Relationship between the availability of free time during the week with sociodemographic variables.*

		Free time available on weekdays			
		Average	Little	Normal	Much
Sex	Male	47%	48%	48%	43%
	Woman	53%	52%	52%	57%
Age	16 to 29 years	24%	23%	28%	19%
	30 to 44 years	33%	37%	32%	23%
	45 to 64 years	28%	30%	27%	25%
	Over 65 years	15%	10%	14%	33%
Level of education	Uneducated	2%	2%	2%	3%
	Primary	7%	5%	6%	12%
	Secondary	20%	19%	20%	22%
	Technology	22%	23%	23%	20%
	Pre university	24%	24%	24%	21%
	Academics	26%	27%	25%	23%
Main activity	Housewives	12%	11%	10%	19%
	Students	12%	9%	17%	10%
	Retired	14%	6%	13%	37%
	Unemployed	2%	2%	2%	2%
	Self-employment	8%	8%	8%	9%
	State employees	47%	58%	48%	19%
	Military	3%	5%	2%	2%
	Peasants	1%	1%	0%	1%

Meanwhile, those who have more free time are women (table 4) over 65 years old, who have primary (middle school) or lesser extent, secondary (high school) women who are retired or housewives, these are distinguished by having too much free time available in any period (table 3).

On weekends (table 5) is that both men and women between 30 and 60 years, who are state employees or to a lesser extent, military, presented the reduced availability of free time. These people are distinguished by having little free time working days and holidays (vacations) but also increases the level of (normal), it is to say, the free time available is of 3 and 6 hours daily.

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Table 5. *Conditional probabilities of dependency relationships among variables. Relationship between the availability of free time on weekends with sociodemographic variables.*

		Free time available on weekends			
		Average	Little	Normal	Much
Sex	Male	47%	48%	48%	46%
	Woman	53%	52%	52%	54%
Age	16 to 29 years	24%	23%	25%	24%
	30 to 44 years	33%	37%	35%	30%
	45 to 64 years	28%	30%	28%	26%
	Over 65 years	15%	10%	12%	20%
Level of education	Uneducated	2%	2%	2%	2%
	Primary	7%	5%	6%	8%
	Secondary	20%	19%	19%	20%
	Technology	22%	23%	23%	22%
	Pre university	24%	24%	24%	23%
	Academics	26%	27%	26%	25%
Main activity	Housewives	12%	11%	11%	14%
	Students	12%	9%	12%	13%
	Retired	14%	7%	10%	21%
	Unemployed	2%	2%	2%	2%
	Self-employment	8%	8%	8%	8%
	State employees	47%	57%	53%	38%
	Military	3%	5%	4%	2%
	Peasants	1%	1%	1%	1%

At the other end (table 5) are citizens of over 65 years, especially pensioners, and to a lesser extent the housewives, as exhibiting a greater availability, possessing an amount of free time between normal and much in labor days, and that increases to much on vacational periods.
During the vacational periods can be observed (table 6) that those who have less free time are both men and women who are state employees. This population is characterized by having little free time in all periods analyzed.

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Table 6. *Conditional probabilities of dependency relationships among variables. Relationship between the availability of free time on vacation with sociodemographic variables.*

		Free time available on holiday			
		Average	Little	Normal	Much
Sex	Male	47%	47%	47%	47%
	Woman	53%	53%	53%	53%
Age	16 to 29 years	24%	23%	24%	24%
	30 to 44 years	33%	34%	36%	32%
	45 to 64 years	28%	28%	29%	27%
	Over 65 years	15%	14%	11%	16%
Level of education	Uneducated	2%	2%	2%	2%
	Primary	7%	6%	6%	7%
	Secondary	20%	19%	19%	20%
	Technology	22%	23%	23%	22%
	Pre university	24%	24%	24%	23%
	Academics	26%	26%	26%	25%
Main activity	Housewives	12%	12%	11%	12%
	Students	12%	11%	11%	13%
	Retired	14%	12%	9%	16%
	Unemployed	2%	2%	2%	2%
	Self-employment	8%	8%	8%	8%
	State employees	47%	51%	54%	45%
	Military	3%	4%	4%	3%
	Peasants	1%	1%	1%	1%

On the opposite side (table 6), showing the greater availability are men and women who are retired, who have also been identified between normal and much free time during labor days and much on weekends.

DISCUSSION

The availability of free time has been historically determined by the necessity of working time, which in turn depends on the level achieved by increases in productivity, based on the scientific and technical progress and organizational in each society. In developing societies such as the Cuban, the people from Havana, have an average overall amount of normal or sufficient free time during working days, around much availability of free time on weekends, and finally taking a considerable amount in vacational periods.

This increase in the magnitude of free time, going from labor days to weekends and vacational periods, corresponds to the trends presented in previous studies in Cuba (Aróstegui, 1979; CEE, 1987 & ONE, 2003) and in various countries of the world, both in developing countries as in developed ones. Like in the first ones we can appreciate Mexico (INEGI, 1998), Colombia, (ANIF, 1986), Chile (Catalan et al., 2000) and Nicaragua (Aguilar & Espinosa, 2000). And in the second ones, can be seen in the countries included in the European survey of time use (Eurostad, 2003), as well as in Spain, where it is important to note, on the one hand, the survey conducted by the National Institute of Statistics (2004), about the population in general, and the cone conducted by Ruiz Juan and Garcia Montes (2005) in Almeria, using a similar methodology that we applied in this investigation, other

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highly developed countries that provide baseline data with similar behavior are Japan (Statistic Office of Japan, 2003) and United States (Bureau of Labor Statistics, US 2004).

With regard to the Cuban reality, is significant to emphasize that, after almost twenty years since the last national survey of use of free time (CEE, 1987), data show that although there have been differences, these are not that distinctive, nonetheless, that these results do not differ from the general trend seen the Havana ones have a lot of free time like any citizen anywhere in the world with equal or even higher economic development, but certainly worth making a reflection on the possible causes of this deadlock.

While attempting to explain the causes of this phenomenon may be in itself a complex professional exercise that would require more specific information, if we consider to put some basic elements for this analysis, the first one is that, although there is political will to allow a greater availability of free time for all the population of Havana knowing its social value, this is only possible, as expressed by Munné (1980) and Waichman (1995), at the expense of the increase of labor productivity that is achieved with scientific and technical development associated with the production growth.

Another group of factors that are associated with the lost of time of the population are the poor quality, dispersion and inefficiency of a large number of services to the population, the excessive bureaucracy and the objective and subjective difficulties in the transport.

Also individuals in Cuban society use a part of his free time in inevitable socio-political tasks, requiring a high degree of dedication that possess a very high priority and consume a very important time. Among these, is to do surveillance guards, attend activities of political organizations and volunteer work which have tended to increase the last years.

The discussion of this general situation leads to another more particular dimension, until what point it establish the contrast in the availability of free time as result of the gender differences, age, level of studies and main activity?

The results of this research show that there is a trend akin to the behavior of men and women, which have partly justified by the development achieved by women in the Cuban community, based in how has now increased its stake in the employment (38% of the occupied) their cultural and instructional level (from the occupied more than the 66% are professional and technical women) has improved the quality of your overall health and reproductive, increased life expectancy (77 years old) has increased its participation in the political life of the country (28% of parliamentarians) and access to managerial level (33% of leaders) among the most significant (ONE, 2003).

Age is another of the variables that determine the visible extent of free time. Historically, society has been divided into ethnic groups, social classes, occupational categories, but never into age groups, ever since the age had never constituted a socially structured factor, like now (Araya, 2003) where differentiated segments are made by its behavior, in these case for its availability of free time, such is the situation of so-called seniors or elderly. For this investigation, are the retired and housewives as citizens who have more free time available. Of course, the intermediate segment or adult which basically represent the productive force of society and where the political and familiar responsibilities lies is where the most of the people suffer from a lack of free time.

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This situation has been reflected in previous Cuban studies, where the population over 65 years had the most free time available (ICIODI, 1979; Zamora & Garcia, 1984; CEE, 1987; Fernandez, Zamora & Jimenez, 1988; Perez Sanchez, 1991 and Sosa, 1999) and those between 30 and 40 years were also found with the less availability of free time (ICIODI, 1979 & CEE, 1987).

These differences of availability marked by the age, we can also confirm such data in studies of general populations of other countries (ANIF, 1986; Eurostad, 2003; Catalan et al., 2000; Statistics Office of Japan, 2003; Institute National of Statistic, 2004; Bureau of Labor Statistics US, 2004; Aguilar & Espinosa, 2000; INEGI, 1998; Ruiz Juan & Garcia Montes 2005). They confirm that the continued availability of free time follows guidelines set by the responsibilities that are acquired in the life, such as family, professional and political – social, which coincide with certain segments of the life cycle, and that could be summed up in, that as we increase the obligations, less chance of having free time in people's lives.

It is directly linked to differences in the availability of free time that was found with the professional activity. This can be manifested through a regularity that is found withing different studies (Ruiz Juan & Garcia Montes, 2005; Aguilar & Espinosa, 2000) there are big differences between those with a low professional qualifications and those working in higher level of study, availability remains very favourable time to the first ones. It is to say, those people who have a higher degree of instruction are associated with having more responsibilities or obligations in all aspects of the social - economic life and consequently are those with the least time available.

CONCLUSIONS

- The social structure determines the quantity distribution of time, and the fractions that should be obligatory and necessary activities, allowing for a certain amount of free time, depending on the time period, which is recognized by the Habana, as normal in labor days, increased slightly on weekends and considerably in vacations. This availability may be sufficient to allow, those who want it, to enjoy an active leisure and recreational.

- The assertion made, by many researches, the time difference which men and women have access, for their own use, is not confirmed by our research, where both men and women say to have a similar amount in the three analyzed time periods.

- Age is a powerful discriminant to the availability of free time, being the oldest persons, basically retirees, and housewives who have more free time available.

- The main activity marks a significant trend between the people from Havana, in terms of free time, being those with higher professional qualifications, who have a lower availability of free time.

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