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**Labor Force Planning in Local  
Governments with Computer Software:  
Izmir Sample**

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## **Labor Force Planning in Local Governments with Computer Software: Izmir Sample**

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### **Abstract**

Workforce planning is one of the tools that enables an organisation to utilise its existing as well as future human resources effectively, productively and rationally. This is because the planning of manpower not only acts as a cost cutting exercise but it also enables the selection and recruitment of qualified workers. With regard to Turkey, workforce planning in the public sector is of particular importance, especially in terms of increasing the productivity and effectiveness of the organisations. In an attempt to provide a comprehensive workforce planning outline, a ‘work analysis form’ has been distributed to approximately 700 employees of one of the local administration organisations. A computer software programme has been developed on the basis of this survey to elicit information regarding the employees in local administrations. This software can automatically reveal the workload of each employee, the size of the manpower in each scheme, and the job definition of the related units, by entering the relevant data and job definitions on an organisational chart as well as standards related to the subject matter. The present study suggests an extended version of the assertion submitted at INTCESS15- 2nd International Conference on Education and Social Sciences Istanbul Organisation. Ultimately, this study facilitates the regimentation of work definitions and the updating of manpower requirements on the basis of varying conditions and different time periods. Its main contribution lies in the innovative creation of a working standard and the provision of a specially developed software that takes into account the structure of local governments in Turkey as well as on the international level.

**Keywords:** Workforce planning, Local administration, Software, Job definition, Manpower

## **Introduction**

The human workforce is the most valuable, yet one of the most sensitive and unpredictable, resources that a businesses has. To begin with, in order for a business to realize its vision and reach its targets, it has to have sufficient number of qualified personnel who have been equipped with the required knowledge and skills and have developed the right approaches (Akgeyik, 2011, 37).

When faced with the question, “If you lose all the potential you have, how long would it take you to possibly create such an industry all over again?”, the famous steel mogul, Andrew Carnegie, replied, “If you mean the physical structures of the facilities, the machinery and the other equipment, I can recreate my industry in much more superb and modern conditions than now, in no longer than three years but if I had lost all my personnel, I mean the experts, my engineers and labourers, in that case I won’t live long enough to recreate this industry.” (Akyüz: 2001,108). As has also been articulated by Carnegie, it is possible to create physical and financial resources in every business. However, it is not easy at all to recreate an existing human resource with the same knowledge and equipment, the same experience, under the same organisational culture.

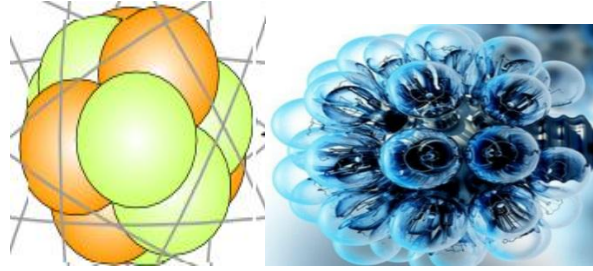
Just like any other organisation, local governments need workers before finance, equipment, space and time in order to produce goods and services. This is because, out of all of these, human resources are the most difficult to find and manage, as well as the fastest in undergoing change. Having such characteristics places workers in a different position within an organisation. The fact that the work force cannot be replaced by any other resource or factor is one of the reasons for the said difference (Aldemir, 2001). For that reason, planning of labour within central administration, as well as in councils, is very important. Moreover, it is an undeniable fact that some serious imbalance prevails in the work force supply and demand relationship within the said organisations. Such imbalances are evident within the council organisations, particularly in terms of the number of personnel cadre and the level of occupational training; whether the job is efficient or inefficient; and remunerations and personnel attitudes. In Turkey, instead of the qualitative side of the human resources planning, mostly the quantitative side is planned within both central and local administrations. This in turn creates staff redundancy within local administrations. The opinion that staff redundancy, especially within the council organisations, increases public spending and that this has a negative effect on the demand for the local public services, has increasingly been voiced. (Çelik, 1996, 186-187).

One of the fundamental factors in work force planning, is that business analyses is not done on a regular basis within the Turkish Public sector, except for some State Owned Enterprises. Additionally, it is rather difficult to examine and get to know the work or to determine the relationship between the work and the worker, unless the work is examined and defined in detail. A business analysis establishes quality, requirements, finer details and working

conditions, by way of observation, investigation and research. Business analyses examine the business itself (Akyüz, 2001, 88). However, the duties, powers and responsibilities of public workers have been written in operation regulations and have the characteristics of legislation. Observation reveals that the said definitions are only related to the duties carried out. As a consequence, it is then possible to say that the main reason for this state of affairs is the reluctance and inadequacy of public administrators in adapting the rational management principles. Lack of business analyses and its natural extensions, the work requirements and work descriptions, also prevent the public administration from managing the personnel and other administrative activities effectively. (Can et al., 2001, 66).

More recently however, enacted as a response to the global developments, the Law 6360 also makes it obligatory that the local administration organisations, as is the case in many other matters, restructure their work force planning. As a result of the changes introduced under the law 6360, the number of Greater Municipality Organisations has increased countrywide to thirty. Borders of municipal councils, which have been given Greater Municipality status, have extended to the city borders. Essentially, as a result of the enactment of the law 6360, a different local administrative system has been created for 75% of the country's population in comparison to the remaining 25%. Under these circumstances, a new organisational structure was introduced between the urban areas and the rural areas (Yıldırım, 2014,81). This new status presents many problems, from the point of view of speed, efficiency and effectiveness, in providing services. This, in turn, requires a reorganisation of both the organisational structuring within the units, and work force plans. Due to this requirement, a "Process Improvement Project" is in the process of being implemented at a local administration organisation in Izmir city.

In their book, "Visions of the Modern City", L.Wallock and W.Sharpe address the most important subject, the metaphoric "organism" in the 19th century because, the phenomenon of "City", which has influenced the writers and thinkers as a sort of "giant human creature", is changing its shell. Recently, the definition of large urban areas is based on a nuclear city or "atom", and the suburban periphery. Transformation from the said "organism" to the "atomic particle", from biology to physics, is a symptom of our view of the modern city as a complex and insecure place, and it may be that these two metaphors not only serve different needs but also function in different ways. New trends in global understanding of local administration envision that, under such modular structure, the executive administration will ensure communication and interaction not only with each unit but also between the units themselves (Figure 1).

**Figure 1. Atomic Structures**

Source: Gümüőğlu, Őevkinaz (2012)

Furthermore, “Simultaneous Solution Groups” are also realizing their proposals in line with the changes and their needs in Process Improvement project (Gümüőğlu, 2014). An article written by David C. McClelland in 1973, inspired the formation of Simultaneous Solution Groups adjustments, were made towards increasing the competence of employees. In his study, McClelland suggested testing competence rather than intelligence. He proposed that tests should be carried out specifically in occupational settings and training, and that this would better reflect the realities. Moreover, the point that contemporary competence studies have a stronger relationship with real life is being elaborated on. Studies by such authors as Bandura (1990), Connell, Sheridan, and Gardner (2003) contribute to these subjects. For that reason, activities focused on increasing the competence of the personnel, were organised to improve the processes.

Data obtained from the Process Improvement project has been used in this study. In the subject matter project, the first phase of which is expected to be ready in June 2015, 11 units are completed and the evaluation of the remaining units continues. Simultaneous Solution Groups, which have been formed within the framework of the planned improvements workshops, have been organized with those groups, ensuring the start of the expansion to other units.

The first section of the study discusses the definition of work force planning, its importance and process. In the second section, computer software has been developed using the data obtained by way of applying questionnaires towards work analysis at a local administration organisation. Within the scope of this software, it is possible to see the organisational chart of the organisation and determine the required amount of work force by way of setting up the Standard Times for each job within the organisation, and additionally to obtain comprehensive reports that also contain the occupational qualities of each job.

### **Definition and Importance of Work Force Planning**

In human resources management, in order to ensure a sufficient number of qualified personnel are found when required, existing potential, development trend and strategic purposes of the organisation must be taken into account during the planning stage. This sort of organisational activity, which aims to utilise existing human resources rationally and to meet the future work force

resource needs in terms of quality and quantity, is called “workforce planning” (Tortop et al. 2007, 98).

The literature review shows that various approaches have been adopted in relation to workforce planning. Some of these Work Force planning definitions include, “the planning activities carried out in order to employ the workers, from the point of view of quality as well as quantity, who will support the production efforts of and enable the organisation to reach its target” (Tortop et al. 2007:98). Another source defines Workforce Planning as; “to determine the required workers in advance, both in terms of quantity and quality for each level of the organisation, and to establish where, when and how the said source will be found”. Work force planning may also be defined as, “The employment at the most suitable time of most suitable personnel, who can contribute to the general planning targets of the organisation, appointment of said personnel to the most suitable business department, preparation of them to new duties by way of workshops, evaluation of their successes and ensuring efficient work” (Tortop et al., 2007, 99). In short, in its simplest context, the concept is defined as prior determination both in terms of quantity as well as the quality of the personnel requirements of the organisation in the future, and all of the activities determining how and at what level the said requirement can be fulfilled (Cankul et al. 2006, 248).

Along with this, work force planning is also referred to as human resources planning or personnel planning, in some resources. The term “work force planning” is used in this study.

Although the concept of work force planning had already begun to be discussed as an opinion from the beginning of 20th Century, essentially it has been among the subjects of traditional personnel management, and use by the public organisations began in mid 1970s (Cankul et al. 2006, 247). Despite the fact that the subject is relatively new, many approaches and methods have been devised in regards to work force planning. Amongst the reasons for that is the role of the increase in the importance placed by the organisations on human resources; considering the workforce as a resource rather than a cost item (Tortop et al. 2007, 99).

Work force planning is an important factor due to the fact that it is one of the aspects impacting on the productivity and profitability in the organisations. Additionally, it has a great importance for the organisations because it is one of the vehicles ensuring effective, efficient and rational use of the existing and future human resource potential by the organisation. This is because work force planning not only economises the personnel numbers but also ensures the selection and employment of the suitably qualified personnel (Tortop et al., 2007: 99).

Work force planning covers all activities relating to reviews of the work force within the organisation for the purpose of efficient use, in line with the internal and external developments, and all preparatory Works in relation to restructuring. In other words, work force planning focuses on developing and applying the strategies towards supply, training and improvement of the workforce that will meet the requirements of the public and commercial

developments of constantly evolving political, economic and academic environment.

An unplanned work force will cause congestion in some departments, high work force assignment, communication problems, the lack of a work force in some departments, and in the end, may create a cumbersome corporate structure (Fındıkçı, 2002). For this reason, work force planning has a special meaning, especially the public sector. Observations regarding practises in the public sector show that in general personnel employment is not based on real needs, and public organisations tend to constantly increase the personnel numbers. A personnel policy, which is not based on real needs, results in waste of work force and unnecessary increases in the expenses (Cankulvd, 2006). Additionally, an employee, who has been assigned to a particular job as a result of a poor employment policy, may not be able to fulfil the role assigned.

Organisations may carry out work force planning at different times for various reasons. Today, the increase in work force costs, rapid developments in technology, a lack of a qualified work force, rapid public and cultural developments, legal and political developments, new world order created by globalisation, may force the organisations to review their work force plans. It is possible to say that both the first time work force plans, as well as the revised plans, have many benefits for the organisations. The benefits may be summarised, as shown below (Bayraktaroğlu, 2011, 43):

- To supply the capable work force required by the organisation, from the point of view of quantity and quality, and to keep the personnel in the organisation.
- To use the personnel of the organisation with maximum efficiency.
- To estimate the damages that may be caused by a surplus work force, that arises as a result of changes in technology in time, and to take prior precautions.
- Keeping in mind the profitability of the investment made in order to ensure that personnel costs do not exceed normal levels.
- To simplify the diagnosis and solution of problems related to the personnel.
- To decrease the workload of management, in terms of supervision, by way of effective personnel planning.

As is evident from the definitions and explanations given above, importance of work force planning for every organisation, especially the public organisations due to their structure, and the benefits it will bring to said organisations, are vast.



## **Labor Force Planning Process**

The labour force planning process has many variations that affect each other and makes the procedure meaningful. These variables may be fixed or creates differences in each country or organisation. The important thing is to include the variants that will have an impact on the labour force planning of the organisation in this process.

Tortop and others point out that the labour force planning process consists of two stages. The first stage is the estimation of needs and the second is planning of the programme. On the other hand, determining the human resource requirements is the most important and difficult part of human resources planning. The fact is that much of the scope of the variants affecting this process is ambiguous necessitates and this means that a level of estimation has to be made. In any given planning process, the more estimated variants there are, the less the chance there is of realizing that the plans will be in parallel to the number of variants.

Different opinions are proposed in the literature regarding the stages of labour force planning. Belanger states that labour force planning has three stages and that first of those stages is determining the particulars of existing personnel and evaluating the labour force trends, in terms of labour force supply and demand. The second stage is determining the quantity of required personnel in order for the organisation to be able to continue the work potential. The third stage consists of activities regarding surplus personnel or personnel need, which is the result of calculations made in between the first two stages.

In another resource, it is again stated that labour force planning consists of three stages and that they are: an estimation of the labour force need, programming and evaluation of human resources, and control. (Tortop et al. 2007, 101).

The opinions of the personnel practising at the lowest level of organisation were elicited using a draft work analyses form and data was obtained by way of evaluating the opinion and situation of the personnel who carried out the work. First, the information gathered was converted into an organisational structure and compared with the existing one. Data and information were evaluated stage by stage in cooperation with the managers.

In summary: three stages were followed towards labour force planning: First, the existing situation was examined using survey studies that would enable work analyses to be made. Secondly, the labour force need was determined, both in terms of quantity and quality, and subsequently, the third stage evaluated and controlled the human resources.

## **Determining the Labor Force Need**

Due to the nature of the process, one of the weakest points in labour planning is the high number of estimated variants. Also, in local administration organisations, it is possible to claim that there are many variants affecting the

estimation of labour force requirements both in terms of quantity as well as quality. The laws, budget, concealed unemployment, politics, management philosophy, targets and of course the labour unions, are factors that affect the labour force estimation and therefore the labour force planning in organisations attached to local administration.

As has been mentioned before, there is an imbalance between labour force supply and demand in local administration organisations in Turkey, as is the case in many public organisations. One of the main reasons for this imbalance is the tendency to evaluate the labour force need in terms of quantity, while neglecting the quality side. Almost every unit in the local administration organisation expresses the need for more staff. However, “is the need for more staff a real need or is it the result of poor division of labour in the related department? ”This question must also be taken into consideration when the labour force planning is made. This is because determining the need for employees requires establishing not only the need for staff but also to determine unnecessary personnel as well as the structures that may cause clumsiness within the organisation.

Labour force requirements may be categorised in many ways (Şahin, 2010: 170):

- Real need for personnel
- Need for auxiliary personnel
- Need for additional personnel
- Need for new personnel
- Need to lay off personnel

Along with determining the need for labour force, an estimation of labour force is also an important part of human resources planning. Amongst the varied methods used for determining the labour force need are estimations by experts, nominal group technique, workload method, Delphi technique, indexing method, new risk analyses method, time sequences, regression method, other statistical analyses, simulation, trend analyses and Minnesota model. Some of the methods mentioned may be considered objective and some subjective. Amongst the subjective methods, Delphi technique can be given as an example. This is because, in Delphi technique, a group of experts propose their estimations. Amongst the objective methods, regression analyses, trend analyses, simulation and other mathematical models may be given as examples. Workload analyses method has been used in this study too in determining the labour force need and labour force planning (Kamal, 2000).

### **Labour Force Planning In Local Governments: Computer Software and It's Application Based on Workload Analyses**

Human resources management (HRM) has emerged as a key function of modern management as of second half of the twenty century. Ultimately, the

HRM was no longer a function of human management but had changed into creation of high performance work systems. Considering the employees as partners, this understanding configured the human resources under a corporate strategy and ensured value maximisation. Similarly, another important development was the use of information systems and technology in the HRM processes. Following the integration of information systems and technology has given birth to “Human resources information systems “(HRIS). (HRIS) covers such subjects as planning of labour force, estimation of labour force supply and demand, reaching the information on the personnel, finding out about the need for education and development needs, wage increases and estimation of wages. HRIS increases the efficiency of the users by way of their need for information. The importance of HRIS in HRM has gradually increased due to making it easy to formulation of strategies and decision-making as a result of the speed in information processing (Bamelet al., 2014).

In essence, a computer programme and its application on the basis of work load analyses serving the HRIS were evaluated in this study. The subject matter software and the results of application have been discussed in this section of the study.

#### *Target Group and Scope of the Study*

A local administration organisation in Izmir is the main focus for this study. However, only the “parks and gardens department” of the said organisation has been used as a sample in the study. All of the personnel, including the management and labourers were covered by the study.

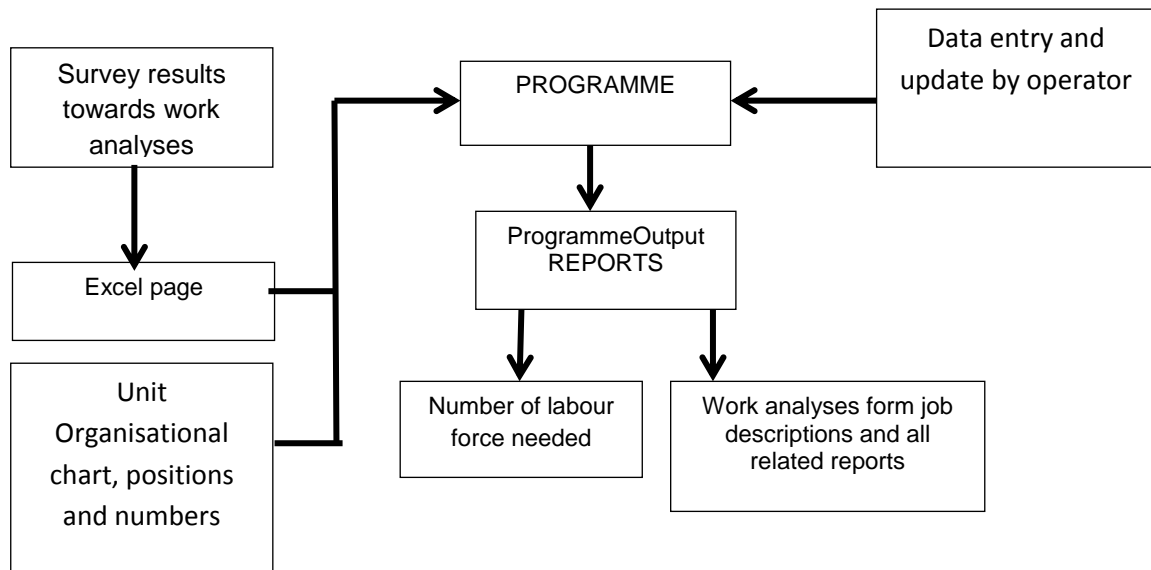
#### *Material and Method*

A survey covering “work analyses” was conducted amongst 700 employees of the parks and gardens department of the subject matter organisation. Data obtained from the survey were collected on an Excel based database(Gümüšoğlu, 2002). In line with the information elicited from the data and in consideration of the nature of this unit, a computer programme was developed. Both the data obtained from the survey and the information elicited following face-to-face meetings with the related personnel and managers were used as programme input. As such, it became possible to obtain many different reports such as organisational charts, labour force need as well as the specifications about the labour force needed by way of a computer programme specific to this unit.

#### *Operating Model*

As is given in below Figure 2, the survey results were initially transferred to an Excel page. Excel page data and the organisational chart of the department were input in the software. Additionally, the operator carried out data entry and updates. In conclusion, the number of labour force needed and work analyses form, as well as job descriptions and all other related reports could be obtained as the programme output.

**Figure 2. Operating Model**



Source: Author's Fieldwork Survey Data 2014

*The Study and Findings*

In the study, a survey towards ‘work analyses’, previously referred to above, was initially conducted amongst the personnel. As a result of the face-to-face interviews with the personnel, the survey data was evaluated and clarified. As a result of both the survey data and interviews, data was obtained with regard to what sort of tasks carried out in the parks and gardens department, content of the tasks, stages for carrying out the tasks, materials and tools required in carrying out the tasks, behaviours when fulfilling the tasks, process of fulfilling the tasks and to whom the worker is responsible. Additionally, with the help of an Excel page, time schedules needed for the tasks were created. All the data was combined under two main groups. The first of those is the data towards the creation of work analyses form and the second is the data towards the calculation of the labour force needs. As might be expected, as a result of this classification, an analysis of parks and gardens department was made on the one hand through which it was possible to determine the number of personnel in line with the workloads on the other.

Workload method, as has been stated above, entails determining the number of personnel with the help of work measurement. In this technique, a standard time frame is specified for each task and the number of personnel required for the estimated workload. Setting the standards at a level that only the most able employee will be able to achieve will decrease the rate of success of plans on the basis of the said standards. Standards set for the least able employee on the other hand will cause more damage than create benefits because of loss of time and efficiency. For that reason, the speed with which the employees work should be rated in line with ‘normal’ speed. Called the performance rating, the speed of a ‘normal’ worker is taken as a basis in this process and 100 points are added to the normal speed.

However, normal time does not mean the Standard Time required for the work element. Standard Time is reached by adding some percentages. The employee cannot work straight all day even if the physical condition of the employee is suitable. Personal needs of the employee and other unforeseen factors will affect the timely completion, in other words the performance of the employee. What should be the percentages added to the normal time in order to set a Standard time is one of the most debated subject of time studies. The percentage recommended by the literature is 6% for personal needs and 4% for fatigue (Cankul et al., 2006, 88).

Work measurement and observations could not be carried out when determining the work standards in the study; due to the organisation used being a public organisation and that there were legal, political, union and economical factors. A time frame was set for each task on the basis of opinions by more than one personnel who engages in the said tasks, the foreman and managers of the said personnel and additionally, the other personnel who are related to the subject. 6% for personal needs and 4% for fatigue were added to the times and a Standard Time was defined for each task. Subsequently, taking the number of repetitions of the tasks annually into consideration, the workload of each unit attached to the parks and gardens department of the organisation were calculated.

Additionally, in this study it was assumed that a single personnel works eight hours per day, 1600 hours per year. In conclusion, the workload of each unit is divided into 1600hr/yr, giving the number of labour force needed. The computer programme made all those calculations automatically.

**Figure 3.** *Excel Page and Determining the Standard Times*

	A	B	C	D	E
1	is_ad	birim sure (dakika)	miktar (Yılda kaç kez)	mak. 300	Nitelikler
2				0	
3				0	
4				0	
5				0	
6				0	
7				0	
8				0	
9				0	
10				0	
11				0	
12				0	
13				0	
14				0	
15				0	
16				0	
17				0	
18				0	

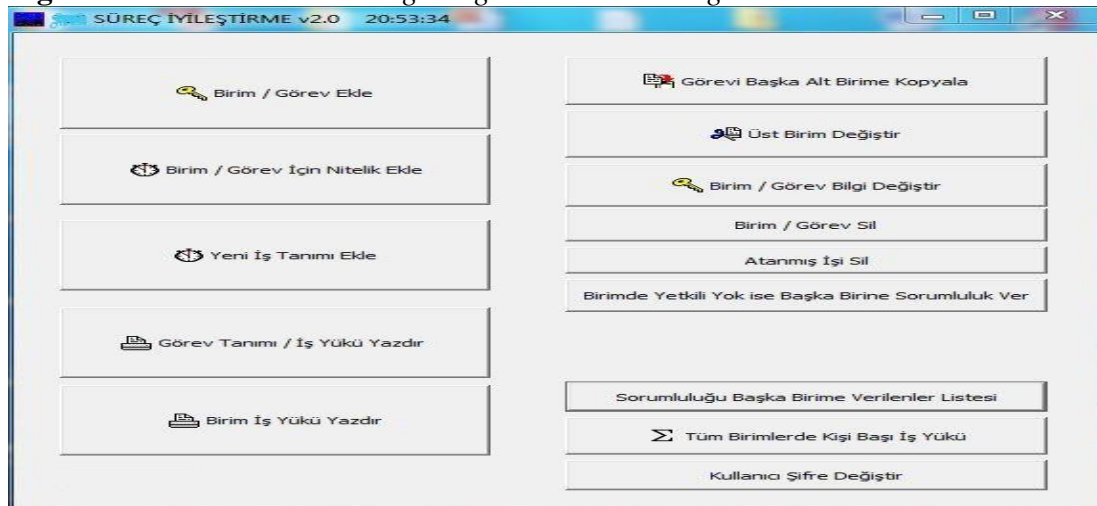
Source: Author's Fieldwork Survey Data 2014.

Data elicited from the survey, the tasks carried out by each unit appearing in the organisational chart, times for the said tasks and annual number of repetitions have been transferred to the Excel page shown in Figure 3. In the organisational chart created on the programme, which uses SQL server data base and provides multi user service, the number of personnel in each unit, the scope of the task, their qualifications and the tasks they carry out are taken from the excel pages. All the data may also be entered and amended by the programme user.

All data is saved in the database. In some cases, more than one unit may carry out a task. If a task by the same name is carried out by different units in different time frames, the system recognises this, warns the user and where necessary, this task is saved in the database using a different time frame. As such, which task is being carried out in different time frames, in which unit and their reasons can be evaluated. Thus, possible changes to the organisational chart can now be easily monitored in a digital platform and a calculation of new workloads can be made within seconds. In the event that there is no responsible person or an employee in a given unit, the tasks carried out in that unit may be transferred to another unit or employee. Naturally, the real workload of a person or persons who carry out the tasks can be measured. In the event that the number of personnel changes, the workloads are calculated and updated by the programme. By using the system, all of the works carried out in the organisation can be recorded by the programme and the owner of each task is determined, responsibilities are clarified.

As is illustrated in Figure 4, it is possible to add a new unit or task to the programme, to determine qualifications needed for each task, transfer the task to another unit or attach the task to another manager.

**Figure 4.** *Work Force Planning Programme Home Page*



Source: Author's Fieldwork Survey Data 2014.

Additionally, whilst the tasks of each unit shown in the organisational chart or a specific unit and all other units attached to that can be reported on by this programme, the work load for each person may be calculated at the same time for all the reports.

A sample programme output is given in Figure 5 below. As can be seen in the example, such data as the duties of an engineer working for the parks and gardens unit of an X local administration organisation and the time frame for each task is shown. Accordingly, the maintenance engineer has 15 duties, and the workload involved is 1,782 hours per year. As has been stated above, in the event that the region and unit of the engineer changes, the duties increase or has been increased, the workload of both the engineer and the unit attached are

recalculated and the programme output can be automatically updated. In addition, ORACLE database is used at the organisation. As such, due to the fact that many of the data in the database may be used or the data may be sent to the ORACLE database, the computer programme has been adapted to the existing system.

**Figure 5. A Sample Programme Output**

<b>BELEDİYESİ</b>			
<b>Bölgesi ve Karayolu Kavşakları Bakım Mühendisi</b>			
<b>GÖREV TANIMI</b>			
<b>Görevin Kapsamı</b>		<b>Personel Sayısı : 1</b>	
<b>Görevler</b>	<b>Birim Süre (Dakika)</b>	<b>Tekrar Sayısı</b>	<b>Toplam Süre (Dakika)</b>
1 Sorumluluk alanındaki I ç i ve çalı maların genel kontrolünün yapılması	180	240	43200
2 Sorumluluk alanındaki bitki dikim, söküm ve yenileme çalı ma uygulamalarının yapılması	60	120	7200
3 Bölge personeli i programının ve da iliminin yapılması	30	240	7200
4 Bölge personeli çalı ma programının / vardiyaların hazırlanması	60	48	2880
14 Sorumluluk bölgesindeki farklı kamu kurum, kurulu ve birimlere ait i lerin yapılması	60	48	2880
15 Telefon görü meleri	30	240	7200
<b>Görev Sayısı 15</b>	<b>Toplam Süre: 1782 saat</b>		

Source: Author's Fieldwork Survey Data 2014.

Programme outputs are very good for better analyses of the existing situation. For example, the personnel whose workloads are below 1,600 hr/yr can be seen in Figure 6 (below). Again, it reveals that the archive personnel have 100 hour per year workload. Another data shows that the workload of accountancy personnel is 420 hours. As a result of the above given data, it was proposed that the archive tasks of more than one unit are converged and the accountancy tasks to be assigned to the accountancy personnel in terms of similar units.

**Figure 6. Personnel Arrangement According to Workload**

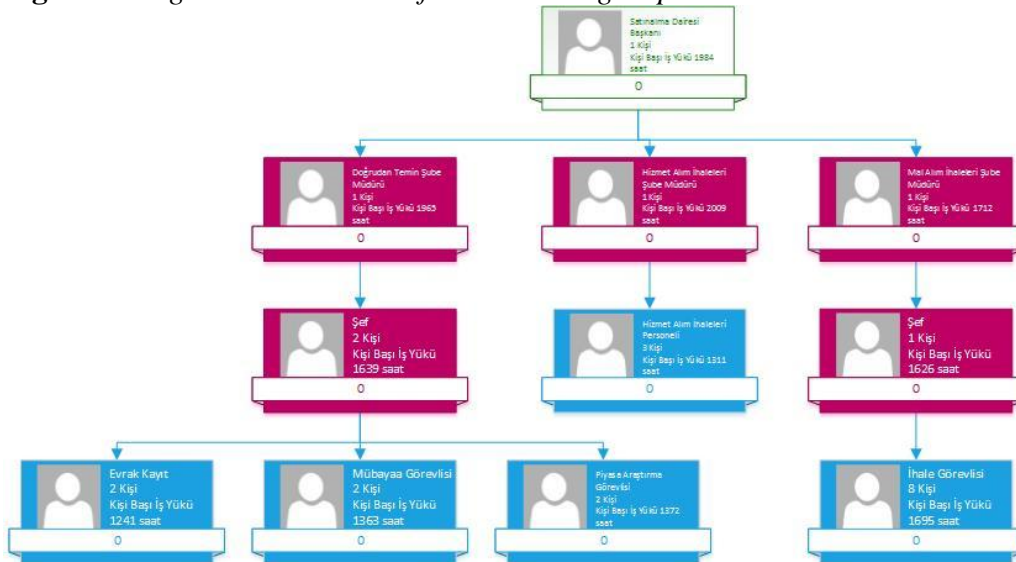
<b>Tüm Birimler Kişi Başı İş Yükleri</b>			
Görev Adına Göre Sırala		Kişi Başı İş Yüküne Göre Sırala	
<b>Görev Adı</b>	<b>Personel Sayısı</b>	<b>Kişi Başı İş Yükü (Saat)</b>	
▶ Arşiv Personeli	1	100	
Muhasebe Personeli	1	420	
Ambar Personeli	1	1302	
Güney Bölgeleri ve Karayolu Kavşakları Bakım Mühendisi	1	1329	
Bitki Koruma ve Besleme Mühendisleri	2	1351	
Satın Alma Şefliği	0	1468	
Raporlama Personeli	2	1496	
Yazı İşleri Personeli	1	1500	
Evrak Kayıt Personeli	3	1560	

Source: Author's Fieldwork Survey Data 2014.

Again, in line with the data obtained from this programme, it was possible to establish that some tasks have different titles for the tasks that in essence have the same content. For example, there were two different titles: fish liner and motor technician, working under parks and gardens unit. When we examined the job descriptions, it was established that the two personnel groups were doing the same jobs and that the only difference was that one used a lawn trimmer and the other used a conventional lawn mower when cutting the lawns. Considering the various examples like this, too many titles and unnecessary job descriptions were eliminated.

Additionally, with the improved version of the programme, it is possible to create the organisation charts of the units using the data entered. Data on organisational charts are input into Excel first and using Microsoft Visio the desired chart is created. The organisational chart created by the programme for the units under study is illustrated below.

**Figure 7. Organisational Chart for Purchasing Department**



Source: Author's Fieldwork Survey Data 2014.

The organisational chart created by the programme is capable of giving the number of persons in each box and their average workload, as shown in Figure 6.

In addition, in the improved segment of the programme, it is possible to see which units and persons carry out a given task, how long and how many times they are carried out within the whole organisation. Figure 7 illustrates an output from this feature of the programme.



**Figure 8.** Which Units Carry out the same Tasks ?

İş Adı	Kaç Farklı Yerde
► İç Kontrol İle İlgili Çalışmaların Yapılması	5
Gelen İşlerin Personele Dağıtımının Sağlanması	3
İhale Dokümanının Satılmasının Kontrolü	3
Birim İçi Mevzuat ve Güncel İş Toplantısı	3
Kurum İçi Yazışmalarının Kontrolü	3
Kurum Dışı Yazışmalarının Kontrolü (KİK, BİK, Bilgi Edinme, SGK)	2
İstekilere Bildirim Yazılarının Kontrolü (Kes. İh. Kar., Sözleşmeye Davet, Şikayet vb.)	2
Resmi Gazete Takibi ve Kontrolü	2

Görev Adı	İş Adı	Süre(Dakika)	Tekrar Sayısı
► İhale Görevlisi	İç Kontrol İle İlgili Çalışmaların Yapılması	240	10
Hizmet Alım İhaleleri Şube Müdürü	İç Kontrol İle İlgili Çalışmaların Yapılması	60	10
Hizmet Alım İhaleleri Personeli	İç Kontrol İle İlgili Çalışmaların Yapılması	60	10
Mal Alım İhaleleri Şube Müdürü	İç Kontrol İle İlgili Çalışmaların Yapılması	60	10
Şef	İç Kontrol İle İlgili Çalışmaların Yapılması	60	10

Source: Author's Fieldwork Survey Data 2014.

As can be observed in Figure 8, the task titled “Tasks Regarding Internal Control” is undertaken by five different sections. Whilst the “assigning officer” completes this task in 240 minutes maximum, others would do it in 60 minutes. In addition, the task of carrying out internal controls is done ten times annually in all units. Those data will help the user query, which units of the organisation carry out the same work, the time it takes to carry out the task and relationship to each other. As such, it will be possible to determine the average time it takes to complete the task and the units related to the subject matter task, resulting in better planning towards the future.

## Conclusion

No matter how much today's technology simplifies processes, both in terms of production of goods and services in almost every organisation, the need for workers will always prevail. As has been discussed before, the most fundamental resource, of both private and public sector organisations, is the “human”. For that reason, it is paramount that the intelligence and labour power of the human factor is directed towards compatibility. Therefore, in this study the developments on competency management started by McClelland were elaborated upon and applied.

A good labour force plan must be made in order to make proper use of such an important resource and to use this force much more efficiently and productively. Labour force planning activities are such activities that determine the right person for the organisational needs and estimate the said personnel both in terms of quality and quantity. Every organisation needs to carry out this exercise but, in terms of local administration organisations, the main mission of which are to serve the public, it will not be wrong to say that this need is much

greater in local administration organisations. This is because, due to their structure, the local administration organisations are excessively influenced by too many outside factors such as politics, unions and management philosophies. Owing to these factors, it is not erroneous to claim that in Turkey the labour force supply and demand are not compatible in local administration organisations and that they have a very clumsy structure in terms of human resources. As the service areas of these organisations expand and in this contemporary atmosphere of fast economical, social and technological developments, the local administration organisations will have difficulties in meeting the needs of the public under this clumsy structure.

For that reason, precise and accurate labour force planning both in terms of quality and quantity is needed. This study has been made to provide an answer to that need. By means of entering the work analyses form to a computer programme, all of the reports related to the labour force in an organisation are possible.

In creating the programme, the nature of the related organisation is taken into account. However, it is possible to adapt the programme to working environments of all local administration organisations, public and private organisations.

## References

- Aldemir, C., AlpayAtaol, GönülBudak (2001), İnsan Kaynakları Yönetimi [Human Resource Management] BarışYayımları, IV.Baskı, İzmir.
- Akgeyik, Tekin et. al. (2011), İnsan Kaynakları Yönetimi [Human Resource Management] Editör: Uğur Dolgun, 2. Baskı, EkinBasımYayınDağıtım, Bursa.
- Akyüz, Faruk (2001), Değişim Rüzgarında Stratejik İnsan Kaynakları Planlaması, [Human Resource Management in Winds of Change] SistemYayıncılık, İstanbul.
- Bandura, A. (1990). Conclusion: Reflections on nonability determinants of competence. In R. Sternberg& J. KolligianJr. (Eds.), *Competence considered* (pp. 315–362). New Haven, CT: Yale University Press.
- Bamel, N., Bamel, U.K., Sahay, U., Thite, M. (2014), Usage, Benefits And Barriers Of Human Resource Information System In Universities, Emerald Group Publishing Limited, VİNE, Volume:44, Issue:4.
- Bayraktaroğlu, Serkan (2011) İnsan Kaynakları Yönetimi, [Human Resource Management] SakaryaYayıncılık, IV.Baskı, İstanbul
- Can, Halil, Ahmet Akgünve Şahin Kavuncubaşı (2001), Kamuve Özel Kesimde İnsan Kaynakları Yönetimi [Human Resource Management in Public And Private Institutions] Siyasal Kitabevi,4. Baskı, Ankara.
- Cankul, H.İ., Bayram Şahin, CesimDemir ( 2006) Hastanelerde İşgücü Planlaması: İşyüküanalizine Dayalı Bir Çalışma, [Workforca Planning in Hospitals] AmmeİdaresiDergisi, Cilt 39, Sayı 4, Aralık 2006, s.245-266.
- Connell, M.W., Sheridan, K. & Gardner, H. (2003). On Abilities and Domains. In R. J. Sternberg& E. L. Grigorenko (Eds.): *ThePsychology of Abilities, Competencies, andExpertise* (pp. 126–155). New York: Cambridge UniversityPress.
- Çelik, Ali (1996), Yerel Yönetimler, [Local Administrations] DEÜ Yayınları, İzmir.

- Fındıkçı, İlhami (2002), İnsan Kaynakları Yönetimi, Human Resource Management Alfa Yayınları Yönetim Dizisi, 2. Baskı, İstanbul.
- Gümüšoğlu, Şevkinaz (2014), Süreç İyileştirme ve Yönetim Organizasyon Projesi 4. Ay Raporu [Process Improvement, Organization and Management Project] Yaşar Üniversitesi Araştırma ve Uygulama Merkezi.
- Gümüšoğlu, Şevkinaz (2012), Çevreye Duyarlı Üretim ve Yönetim İçin Alternatif Bir Model Yaklaşımı [An Alternative Model For Environment-Friendly Production Management] Yöneylem Araştırması ve Endüstri Mühendisliği 32. Ulusal Kongresi, İstanbul.
- Gümüšoğlu, Şevkinaz (2002), İş Süreçlerinin İyileştirilmesinde Kullanılan Yöntemler ve Bir Üniversitede Uygulama [Methods Used in Work Improvement: A University Example] II. Üretim Araştırmaları Sempozyumu 8-9 Kasım, Bildiriler Kitabı, İstanbul, s:3-7 .
- Kamal M. Al-Suphi Al-Harbi; [Optimization of Staff Numbers in the process industries: an Application of DEA, International Journal of Manpower] Vol.21, No:1 47-59.
- McClelland, D. C. (1973): Testing for competence rather than for intelligence. *American Psychologist*, 28, 1–14.
- Tortop, N., Burhan Aykaç, Hüseyin Yayman ve Akif Özer (2007), İnsan Kaynakları Yönetimi [Human Resource Management] Nobel yayında eğitim, genişletilmiş ve gözden geçirilmiş 2. Baskı. İstanbul.
- Şahin, Yusuf (2010), Yönetim Bilimi ve Türk Kamu Yönetimi [Management Science and Turkish Public Administration] Murathan Yayınevi, 2. Baskı, Trabzon.
- Yıldırım, Selahattin (2014), Dünya’da ve Türkiye’de Büyük Kent Yönetimi Üstüne”, [Management of Big Cities in World and Turkey] Çankaya Belediyesi Yayını, A