

# Equitable payment and social inequalities

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## **Abstract:**

*The problem of properly defining the equitable payment for different levels of work has been discussed since longtime, reference should also be made to a proper scheme of comparison of the work level in different organizations, starting from the basic theory of the “time span of discretion” defined by Elliot Jaques immediately after the second world war and still subject of discussions and consideration. Also we shall set up a model trying to justify why a difference in payment for high level and lower level works can be easily accepted in a so called “rich country” while it cannot be accepted in poorer countries.*

*As a matter of fact, the necessity to measure and compare job levels in different organisation is known since very old times, the first important attempt we had in the history is the NOTITIA DIGNITATUM in the late Roman Empire, and similar schemas have been tried in several cases, generally without proper quantitative and statistical methods.*

*Starting from 1950's, in the general framework of the organisation theory supported by the Tavistock Institute, the psychologist Elliot Jaques together with the industrial manager Wilfred Brown started a new research trying to find a proper quantitative parameter to measure the job level and to set up a criterion for equitable payment. The research (Glacier Project, 1950) was followed by further studies on the British National Health System (Rawbottom, Billis) and other studies until the research of Ivanov (2006).*

*The result is that job level can be measured with a proper parameter whose name is “time span of discretion”, that this parameter can be uniformly used in any kind of organisation and eventually that it is related to the equitable payment related to the job itself.*

*The paper shows the history of the research, its result and its possible future developments and describes some application and possibilities related to the Italian case.*

**Keywords: organisation, time, job, level, payment, subordinate, manager, hierarchy**

## **1 Foreword**

The study of the organization is a typical multi-disciplinary study.

In the “outline of knowledge” of the ENCICLOPAEDIA BRITANNICA, that is a linear classification, not entirely suited to classify disciplines at the intersection of other subjects, the study of organization is placed in the part called “human society”.

In a matrix classification, the organization may be located at the intersection of

- legal disciplines relating to the organizational and institutional aspects, with particular regard to canon law and to the comparative constitutional law, as well as to the company laws and the domestic and international commercial law;
- technical disciplines, economics, finance (technology, economics, finance) relating to the production and distribution of goods and services,
- sociology and communication science,
- psychology.

The study of the organization, in modern terms, also need adequate numeric methods and operations research.

The need to organization starts with the beginning of human civilization, namely in the Neolithic period, when man begins to settle and therefore to constitute urban agglomerations; it is well known that the oldest sovereign state organization is the Egyptian Kingdom together with the Sumerian city-states.

A further reference to an organization based on the delegation is in Exodus 18: 21-22; we are at the time of Moses, therefore, according to current opinion of Biblical scholars, around 1200 BC: at about the same time that took place the Trojan War.

In later centuries, the main event is the growth of Rome from a small town to a universal empire; the function of the Romans in history in general and, as far as we are concerned, is of paramount importance in the creation and definition of the very idea of law, from which the organization was not, at that time, distinguished.

The Roman Empire missed the transition to an industrial society, albeit they were close to it: they were using prefabrication and mass production. However, they failed to trigger an industrial revolution, probably due to lack of adequate energy sources as well as to the use of slave labour. The civil and military organization of the Empire has been a model for centuries, and still offers interesting insights: the *NOTITIA DIGNITATUM*, document dated between 395 and 420 AD and issued by the imperial chancery, can be considered as the first organization manual.

From the Roman culture we also derive the bases for cost management and engineering; the real profession of the *ARCHITECTUS* described by Vitruvius is not so much an architect as we understand it as a project manager and a description of operations by project can be found in the *Commentaries DE BELLO GALLICO* of C. JULIUS CAESAR.

In the period between the fall of the Roman Empire and the industrial revolution the organization evolves mainly as ecclesiastical organization, and as a state organization: evolves the canon law together with the major legal systems; many of the principles, concepts and rules of modern organizational science must be traced back to the great ecclesiastical organizers.

The need of the division and specialization of labour is a consequence of the industrial revolution, whose roots are from the tenth century: it becomes slowly a reality in the following centuries, exploding from the second half of eighteenth century. In addition, with the increase in the size of structures and the number of people employed in them, there is a need of complex hierarchical structures.

Max Weber (1864-1920) has identified three types of authority, the first based on tradition, the second connected to supernatural values, the third inspired by the rule of law and reason. The latter system, that Weber calls "bureaucracy", according to him is the perfect form of organization: exercise of power based on impersonal rules and procedures.

The organization science has been developed in the twentieth century by several scholars, out of them Taylor, Gantt, Fayol, Mayo, the scholars of the Tavistock Institute, Galbraith and a lot of others.

## **2 Bureaucracy and level of work**

The term "bureaucracy" has been widely used from Elliott Jaques and from other scholars. It is convenient to use the term "executive hierarchy", since the word "bureaucracy" has assumed a pejorative meaning, in majority of languages.

The etymology of the word is hybrid, from the French "bureau" (office) together with the ancient Greek "κρατέω" (kratéo, have the power to).

The definition given by Jaques is: bureaucracy is a "hierarchically stratified managerial employment system, in which people are employed to work for a wage or salary; that is to say, stratified employment hierarchy with at least one manager, who in turn has a staff of employed subordinates (A General Theory of Bureaucracy, Gregg 1993, page 49)"

Bureaucratic systems, also named executive hierarchies, are therefore a secondary and dependent institutions.

Secondary since they cannot be established directly and autonomously, but must be set up by external authority, entrepreneurial, political or otherwise, that can be defined as primary or institutional authority.

Dependent in the sense that the continuity of their existence depends on the primary authority, on whose behalf it carries out its work, the aims of which are fixed by the primary authority.

A major difference between paid employment and self-employment, in fact, is that self-employment has the prerogative to decide, at least partially, its aims and targets.

An employment in said organizations is characterized by an assignment, whose retribution is a payment is proportional to the time (actual time or calendar). The employees assume only technical risks, namely any risk related to their capability as well as to their performances, without assuming any economic or financial risk (workload, payments, costs, profitability, etc.).

In addition to the basic wage or salary, they can receive production bonuses based on performance that do not modify the structural bond of an executive hierarchy. Premiums whose calculation is based on sales, profit and any other value different from performance are a different thing, more similar to remuneration of self-employed people.

There should be always a correspondence between people and jobs held: every vacancy occupied by one person, each person occupies only one vacancy. You can have the case of vacancies that are assigned on a temporary base by the holder of another job, but this should be exceptional and temporary solution.

In any other case where the same person is found to occupy more than one job there is mismatch between the real organization and the way in which it is represented.

### **3 Measuring the level of work: the time span of discretion**

The starting point for measuring the level of work is the assertion that the level of maturity of a person, from a psychological point of view, corresponds to a temporal parameter. This is an old idea that we can find, albeit embryonic, in the Stoic philosophy. In our case, the idea consists in using time as a reference parameter for measuring the level of work and for comparing levels of work of different jobs, even in different executive hierarchies.

Being capable to measure the level of work, we shall have a better understanding about work and its real meaning in an executive hierarchy and then we shall increment our capacity to organise the work itself as well as to manage the people involved. According to lord Kelvin:

*"I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of "science", whatever the matter may be."* (Electrical Units of Measurement, 03/05/1883, Popular Lectures, Vol. I)

The first consideration is that each task has a target time, explicitly or implicitly assigned for to its completion, and that the more a person rises in the hierarchy, the more the time frame of the tasks assigned to him is characterized by long time intervals.

Jaques and others have suggested, and then demonstrated with studies lasted from 1950 to the present, that the level of a task can be measured in a direct and simple way according to the time schedule for completion of the longer term tasks. Reference should be made to:

- first of all the Glacier Project (1950-65),
- the Brunei Project (1968),
- the studies on the organization of the British NHS after the Fulton report (1970),
- the research of Ivanov (2001-06) in United States and Latvia.

The basic assumptions are:

- Every concrete task that someone is required to do has a target completion time.
- The higher a person goes in an executive system, the longer is the time framework within which he or she works.
- A job's size can be directly and simply measured by completion times targeted for the longest tasks that are required to be carried out in that role, namely, the time span of discretion.

If we consider a job in an executive hierarchy, there shall be a complex of tasks, subsequent or simultaneous, of different time span with a control system at fixed intervals or variables. In these tasks, there is always a prescribed content and a discretionary term; the discretionary terms must always be present, since if it is lacking you could replace human work with automated devices.

We then define "time span of discretion"<sup>i</sup>

- the longest task assignments in a job with subsequent tasks with immediate control,
- the sequence of longer assignments to subsequent tasks with deferred control,
- the time allotted for the long between the long-term tasks, for jobs in concurrent tasks.

A short definition of the time span of discretion is "*the length of time that a person can work, into the future, without direction, using their own discretionary judgment*"

Time span of discretion do not coincide with the institutionalized control intervals and gives an idea of the frequency with which you should confer with your chief; we could demonstrate that it coincides too with the time necessary to make manifest a marginal inefficiency.

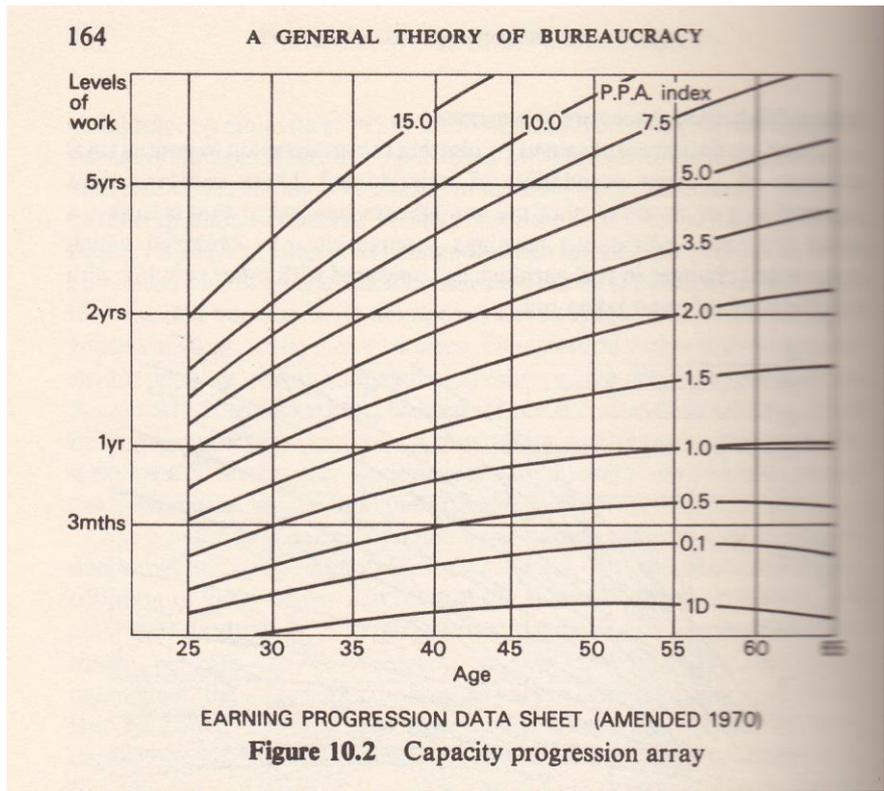
On the basis of said time span, you may define a set of managerial strata corresponding to different levels of capacity to work; each stratum can be divided into more levels or substrates, to take into account, in a detailed way the articulation of the capabilities and functions.

You have then a criterion to follow:

- Each job has a defined level of work in terms of time span of discretion: it must be occupied by a person whose current working capacity corresponds to the time span required.
- The hierarchical stratification must take into account the difference between two different hierarchical levels in terms of time span of discretion, this should correspond to different managerial strata. The hierarchical levels with lower difference are fictitious levels and correspond mostly to intermediate levels of supervision.

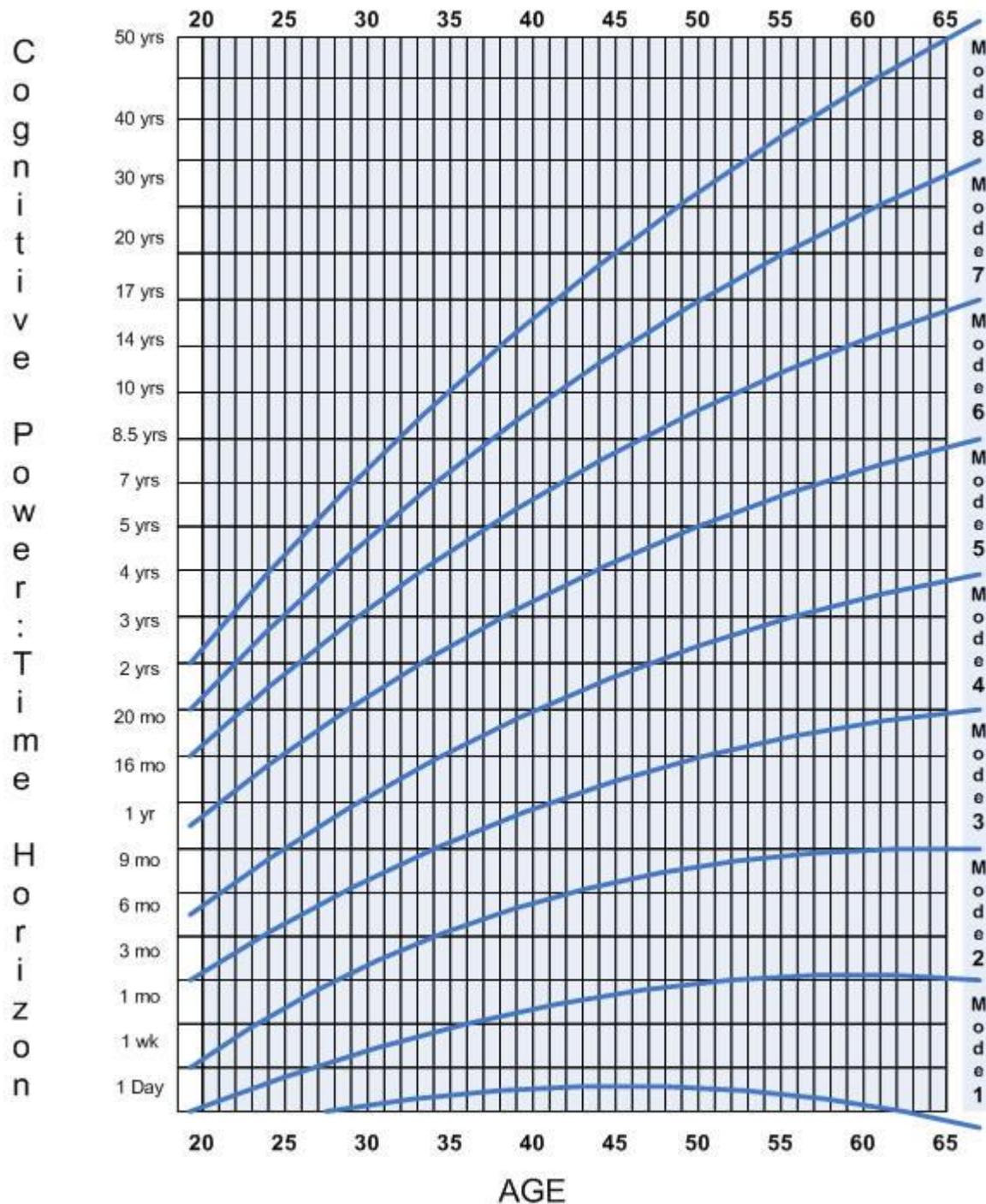
The individual work capacity, in terms of the time span of discretion, grows regularly with age, it is not yet clear whether asymptotically or starting to decline after an age, that becomes older as much as the capacity is higher.

Jaques sets, by convention, the "nominal capacity"<sup>ii</sup> as the capacity for work at the age of 55 years; Since the capacity for work is a combination of psychological and physical factors (software and hardware), probably the decline at old age, if any, is due to causes purely physical. The actual pattern of the curve is then asymptotic.



The nominal or potential capacity depends on studies and cultural background, including family background, intelligence and willingness, knowledge and competency, psychology and other factors.

We believe that the original curves of Jaques should now be updated to take into account the increased life time. The picture below represents a set of potential capacity curve from the research Mike Jay's Musings on Developmentalism (2004)



In a system of differential salaries, we define “equitable payment” or fair pay the salary that the employees statistically perceive as fair in relation to the duties actually carried out, without taking into consideration what they could or would play. The surveys have shown a direct relationship between time span of discretion and equitable payment.

This is true for jobs within a business organization, but also for military hierarchies and public administration, as shown in the charts below.

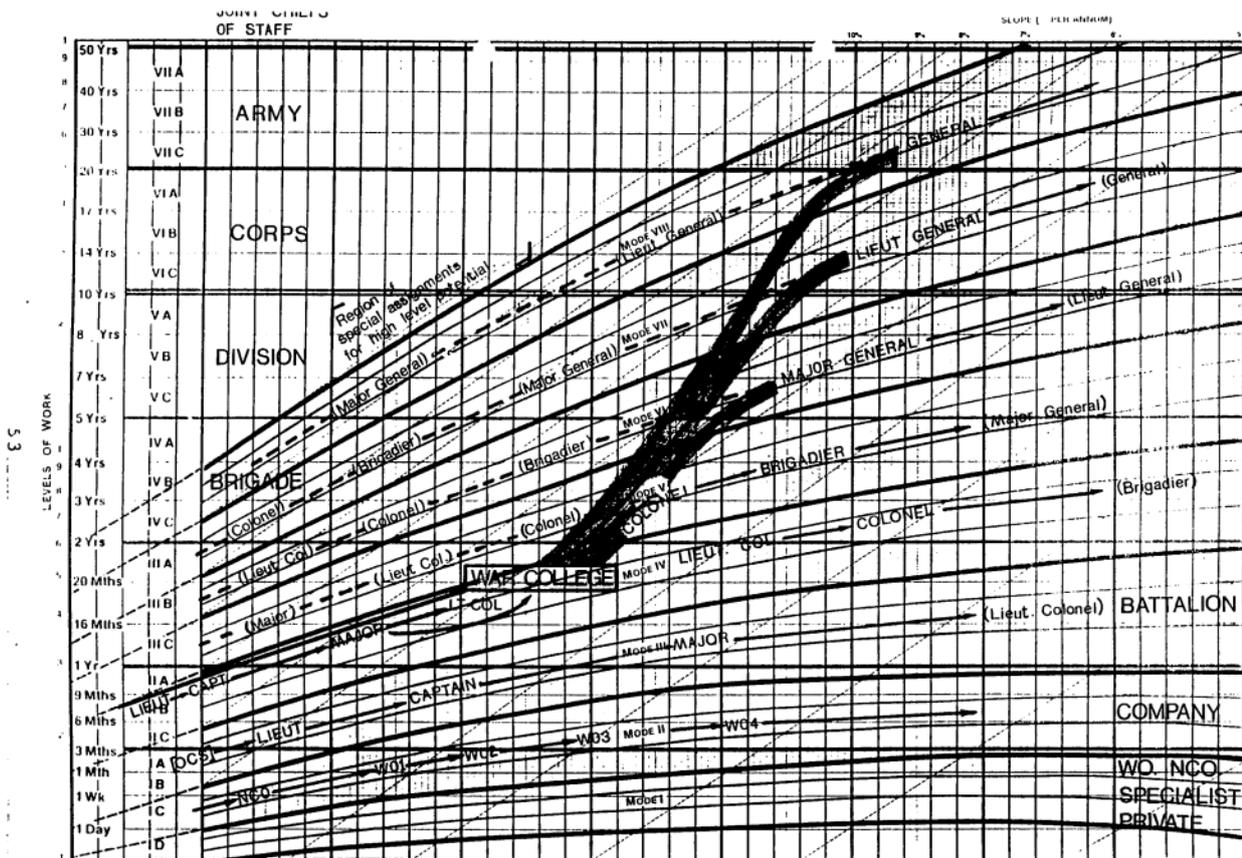
Level	Grade	Time span	Abstraction	Decision	Companies	
I	D	1 day	Perceptual-motor concrete	Prescribed, pragmatic	Labourers	Employees
	C	1 week			Semiskilled and skilled workers	
	B	1 month			Foremen, highly skilled workers	
	A	3 months				
II	C	6 months	Imaginal concrete	Routine	Technicians, specialists	Coordinating employees
	B	9 months				
	A	1 year				
III	C	16 months	Imaginal scanning	Interpretative, scheduling	Management	
	B	20 months				
	A	2 years				
IV	C	3 years	Conceptual modelling	Programming, planning	Senior Management, Management of middle size companies	
	B	4 years				
	A	5 years				
V	C	5 to 10 years	Intuitive theory	Policy and coordinating policy	General Management	
	B					
	A					
VI	B	10 to 20 years	Institution creating	Policy and coordinating policy	Top Management of major companies	
	A					
VII		20 to 50 years				
VIII and more		> 50 years				

The table can be completed with further studies and research such as Rawbottom & Billis, Ivanov, Paterson, Castellion and others and can eventually be compared to the Italian case. Here below a table that compares the levels proposed by Jaques, Paterson and Castellion.<sup>iii</sup>

The time span of discretion can be longer than human life: a person whose time span capacity is longer than his life span can be defined a genius, he's developing a more than lifetime work with the frustration of knowing that he will never see the completion of what he has started.

Jaques			Paterson		Castellion	
Stratum	Time span of discretion	Level of abstraction	Grade	Decision making	Grade	Decision making factor
I	Up to 3 months	Perceptual motor concrete	A	Prescribed decisions	16	Simple decisions
			B lower	Automatic decisions	15	Pragmatic decisions
					14	
					13	
			B upper	Coordinating automatic decisions	12	Tactical decisions
			C lower	Routine decisions	11	
					10	
9						
II	3 months to 1 year	Imaginal concrete	C upper	Coordinating routine decisions	8	Tactical decisions
III	1 to 2 years	Imaginal scanning	D lower	Interpretative decisions	7	
					D upper	Coordinating interpretative decisions
			D upper	Coordinating interpretative decisions	5	
IV	2 to 5 years	Conceptual modelling	E lower	Programming decisions	4	Strategic decisions
			E upper	Coordinating programming decisions	3	
V	5 to 10 years	Intuitive theory	F lower	Policy decisions	2	
			F upper	Coordinating policy decisions	1	
VI	10 to 20 years	Institution creating				
VII	20 to 50 years					
VIII and more	More than 50 years					

The last chart shows an application to the military organization



Time span of discretion is a related to the “psychological level” of the person, therefore to the capacity to have a vision towards the future as well as the past, locally or globally. The same could be said for his cultural vision in general.

#### 4 Equitable payment

The theory of the equitable payment is consequential to the above studies. It has not been widely applied due to the fact that both parties (unions and employers) have decided to rely on negotiation instead of relying on an objective criterion. The illusion of both parties has been that they could afford the better results through negotiation than they could have obtained through rationalisation. By this way, they have originated a market distortion with regards to the relationship between level of the work and salary.

*“The time span of discretion coincides very closely with people’s judgments about fair pay for the work involved. Thus the same time span will result in the same statement of fair pay regardless of the actual occupation or pay”<sup>iv</sup>.*

The level of the work pertaining to a specific role in any organization can be measured by the time span of discretion, that can be used also to compare the level of the work pertaining to roles in different organizations, as it has been described in the previous paragraph.

For each level and for each role can be defined an **equitable payment**, that is the pay statistically considered as equitable by people for the work they are actually doing (without considering neither the work they would like to do nor the work they feel to be able to do).

By this way, we define a concept of equity that is different from both legal and ethical definitions of equity. Probably we could use the term statistical equity, or maybe it would be better to speak about **felt fair payment** without involving any concept connected with equity.

The payment to be considered is the gross wage or salary, namely the amount before taxes. Different levels of taxation have nothing to do with equitable or fair payment.

According to the research of Jaques, the correlation<sup>v</sup> coefficient with the job was 0.86 for time span and 0.79 for fair pay. Other research gave values from 0.85 to 0.90

The equitable payment can be calculated with an exponential formula:

$R_e$  = equitable payment

$$R_e = R_0 \exp \frac{\lambda}{\lambda_0}$$

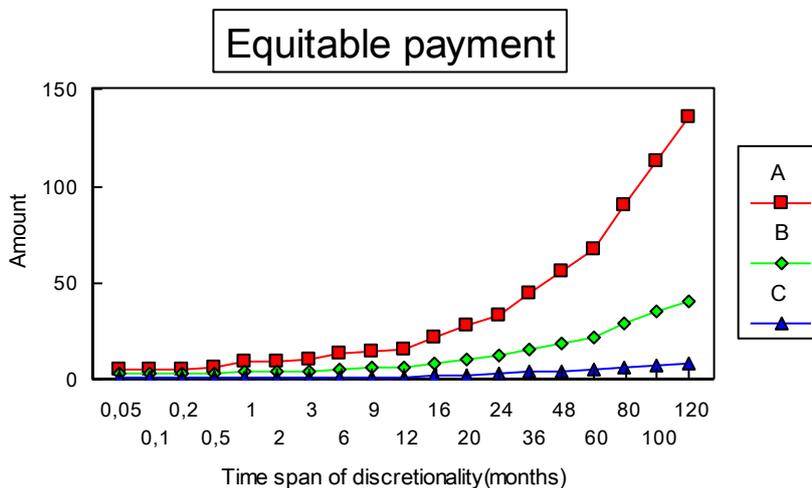
$\lambda$  = corresponding time span of discretion

$R_0$  = equitable payment for a work whose time span of discretion is near to zero (minimum wage in the considered country)

The term  $\lambda_0$  is a parameter depending to the general economic level of the country considered.

The actual values for  $R_e$ ,  $R_0$  and  $\lambda_0$  are the result of a statistical investigation and data collection.

According to the theory, if the above conditions are met, there should be no need to relate the payment to the performance since people should be enough motivated to give the best performance. However, the last point should be verified with reference to the updated situation of the labor market.



The curve shows the equitable payment relevant to three different countries. It is worthy to note that

- the curve under A is relevant to medium economic level country, the level of wages is higher and a higher differential is accepted,
- the curve under B is relevant to a lower economic level country, while
- the curve under C is relevant to a poor country, the level of wages is clearly lower and the differential is barely accepted.

To go into more detail, we could define as **differential wage ratio** the ratio of the equitable payment corresponding to the time span of discretion of 10 years (general manager of a big company), to the equitable payment corresponding to the time span of discretion of 1 day (unskilled labourer).

The real differential wage ratio shown in the above cases is 25 about for curve A, 11 for curve B and 6 for curve C, further research gave a result equal to 40 for an affluent society.

Differential wage ratio in some real cases		
Glacier project (UK)	1954	18.8
	1955	20.0
	1964	24.7
Brunei project	1968	20.0

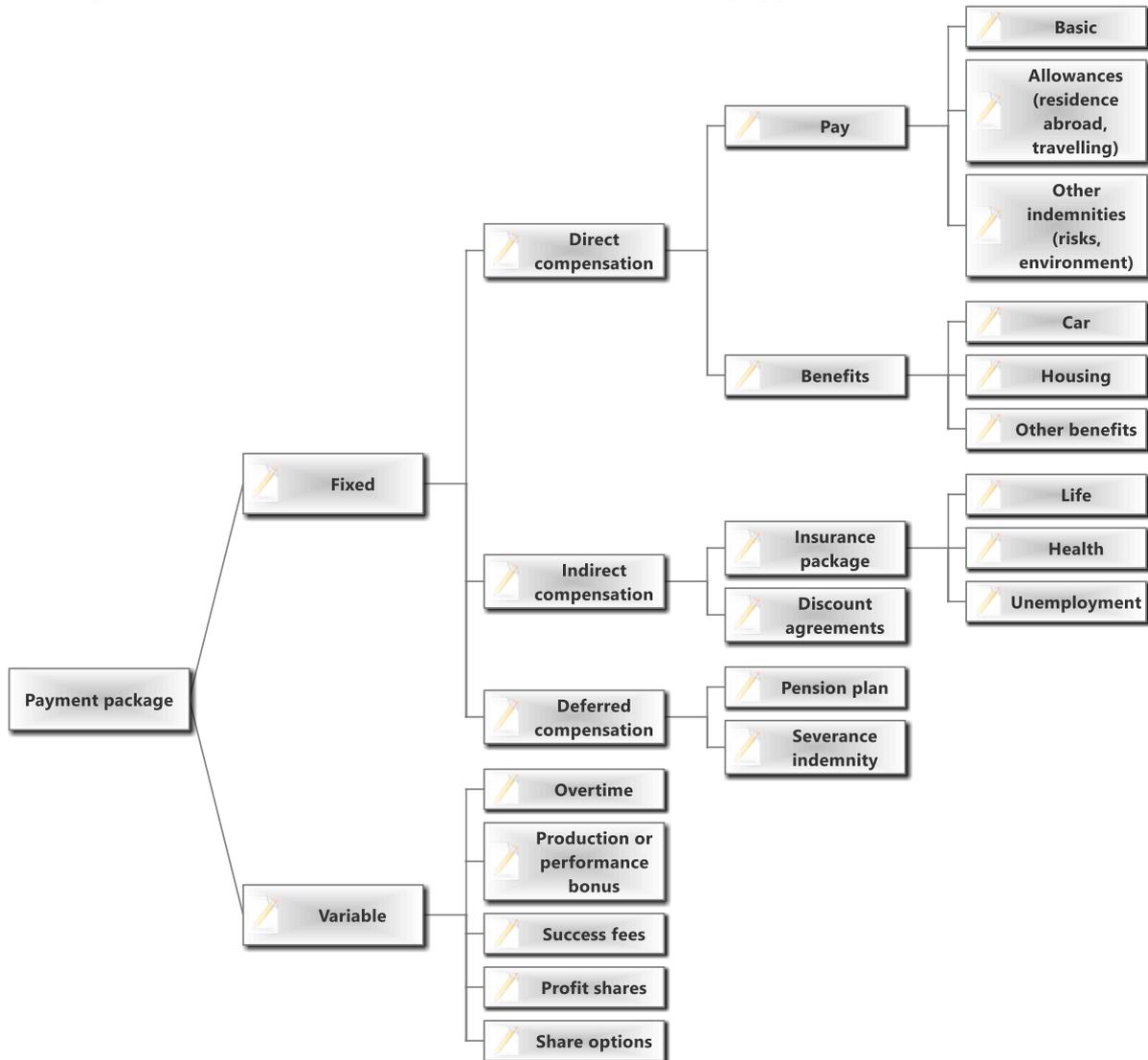

According to further studies in the Glacier project, there is a correlation between the fair pay and the value of the resources under direct control, if both are calculated referring to a time span corresponding to the time span of discretion:

$$\text{Fair pay} = (\text{resources}) \times (\text{interest rate})$$

Apparently the fair pay is then more related to the potential losses that the worker can cause than to the actual value that he is creating.

Equitable payment is only one of several elements involved in the implementation of a coherent and effective reward system. However, the gross salary per year is the parameter that is taken into consideration when comparing different jobs or job opportunities, while the overall value of the payment package, that includes for pension funds, health insurance, life insurance, is barely understood by medium and low level people.

As a matter of fact, pay is not the only variable, any person reacts to a broader set of trading conditions, the reward system is composed by payment package, career opportunities, status and formal recognition, work environment and satisfaction, learning opportunities, health and safety.



An incentive system can have distortive effects, in all cases where individual interest does not correspond to the interest of the organization as a whole.

## 5 Status and its congruence

This point can be analysed on different point of view, socially and professionally.

### Social status

Social stratification has been defined by Max Weber through a multidimensional approach that can be simplified in three dimension that are

- Economic situation, that includes for properties and income,
- Prestige, that is relevant to the respect given by others, and
- Power, namely the ability to achieve their goals against the opposition of other parties

In an executive hierarchy, the level of works affects all three dimensions. However, a person exists even outside their job, and can have a different status in church, professional associations, private clubs, politics and so on.

Social status, in a multidimensional sense, can be defined as a position in any of the different social scales ranking people in the society, such as economic status, social position both individual and familiar, prestige attached to the occupation, level of work, respect, etc.; “status congruency” means that all the social statuses of a person rank at the same level, if not “status discrepancy” occurs.

### Professional status

Within the executive hierarchy, professional status is basically given by the level of the job, namely the level of work (W: time span of discretion) corresponding to the role in the organisation. This has to be congruent with the individual capacity (C) as well as to the payment (P), that we define as C-W-P equilibrium.

Unbalanced work situations will create problems, either operational or psychological, due to over-employment or to under-employment, that can be understood for the various possible cases, such as:

C=W=P	Equilibrium	The worker is normally satisfied with his work and works efficiently
C=W>P	Capacity congruent with level of work, low payment	The worker normally feels frustrated, if he's satisfied generally this is because of lower performance
C=W<P	Capacity congruent with level of work, overpayment	Creates a general problem in the <i>morale</i> of the organization, the single worker can feel guilty and this can lower his performance due to high rate of errors
P>W>C P=W>C	Level of work higher than capacity	Disorders due to stress
W>C>P	Level of work higher than capacity plus underpayment	Disorders due to stress, neurosis, instability
P>C>W P=C>W	Low level of work, fair payment or overpayment	Can work on a temporary basis, in the long run causes organization problems and assumption of responsibilities beyond the actual powers

Furthermore, there has to be a congruence between the nominal time span of discretion and the level of works expected in the future. A thorough analysis on the progression of the individual

capacity compared to the level of work assigned to him should be performed in order to project both in future through a regression curve and verify the congruence.

## 6 Compatibility with social inequalities

We must understand why a high differential in equitable payment is normally accepted in highly developed societies, while it is badly considered in low income or poor countries. This brings the need to understand something more about the inequality in income distribution and to the general problem of the so called “social justice”.

We shall use as measure of the wealth the GNP per capita adapted to purchasing power (PPP) and the Gini coefficient as measure of the inequality: although we are aware that the Gini coefficient has some limits, we believe that it is still a method of measurement easy to manage and to understand.

In recent time, important studies on that matter have been made by Angus Maddison first (please refer to Maddison Project) and then by Branko Milanovic.

The purpose of Milanovic’s research was to measure “*how close is measured inequality to the maximum inequality that can exist in a given society*”, that he calls maximum feasible inequality.

The first situation to be considered is the case of a pre-industrial, subsistence economy where all people but an extremely small minority live at subsistence level. Taking into consideration.

- $Y$  = total income,
- $n$  = number of people,
- $s$  = level of subsistence (at purchase power parity)
- $e$  = minority

The surplus over the level of subsistence shall be

$$S = Y - n(1 - e)s$$

Then the income of the minority

$$M = S / e$$

The level of subsistence is to be calculated in physiological terms, without any social consideration. In theory, it should not have any variability. However, we must accept that some variability can be due to different climates or other environmental conditions.

If we calculate the mean income

$$m = Y / n$$

And then its ratio to the income corresponding to the level of subsistence

$$a = m / s$$

the coefficient of Gini, that actually corresponds to the inequality frontier, shall be

$$G_0 = (a - 1) / a$$

We can define an inequality possibility frontier that is the locus of maximum possible Gini ( $G_0$ ) coefficients and then the inequality extraction ratio  $R = G/G_0$  that is the ratio of the real Gini coefficient to the maximum possible Gini.  $R$  gives an estimate of how close a society is to its inequality frontier.

A further consideration is given by the fact that, when the general level of the country increases, people will not accept anymore to live at subsistence level, then the physiological minimum becomes a social minimum  $S_0$  (relative poverty line), that tend to increase with the mean income.

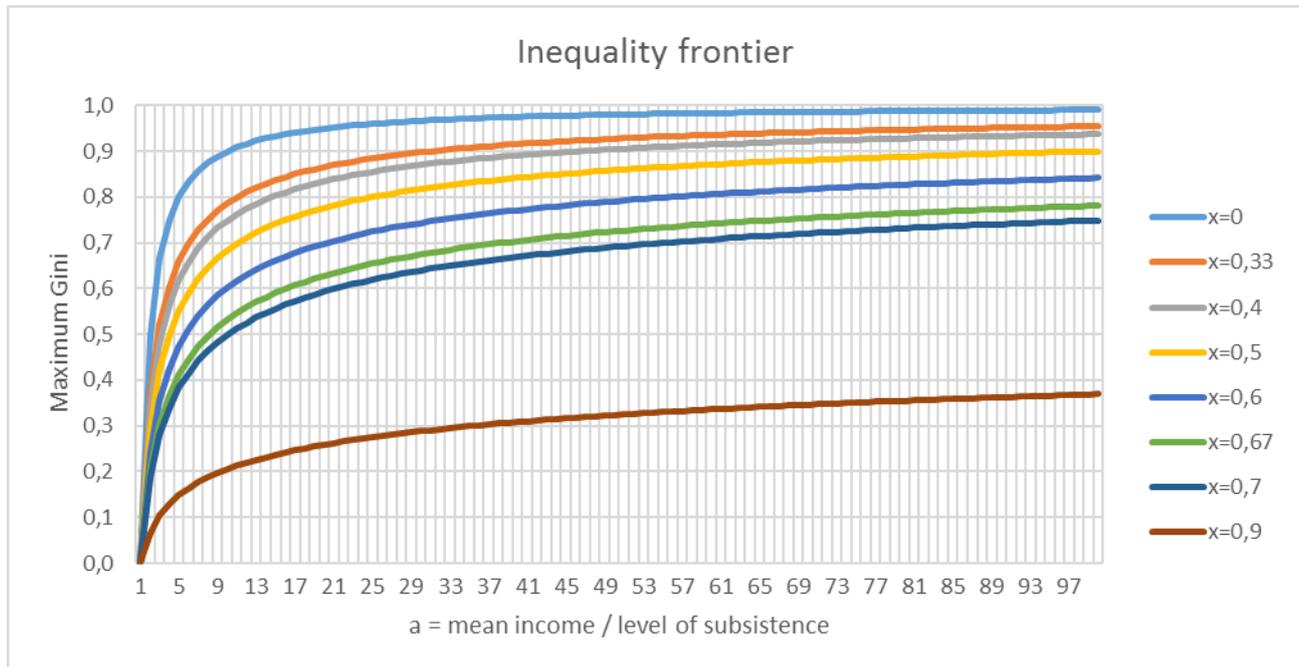
A more affluent society requires a higher social minimum.

We must consider that the definition of poverty is not limited to the inability to satisfy basic needs, but should take into consideration the capability to operate without shame in a society: this definition can be found in the works of several scholars throughout the centuries, the most recent one are Amartya Sen and Ravallion.

The social minimum  $S_0$  can be defined as

$$S_0 = s a^x$$

Where x is the elasticity



The elasticity<sup>vi</sup> of the social minimum compared to the mean income<sup>vii</sup> is a number between 0 and 1, that is to say that its increase is less than proportional to the increase of the mean income.

According to Chen and Ravallion the elasticity of the official poverty line with respect to the mean income is 0.33.

However, taking into consideration that the socially accepted minimum (subjective poverty) is well above the poverty line, a more reasonable value of the elasticity, seems to be in the range from 0,40 to 0,70 (Flik, van der Praag)

Milanovic has calculated a general expression that links the maximum feasible Gini, the average income and the elasticity of the minimum with respect to the average income.

$$G = 1 - (1/a) a^x$$

- If the elasticity  $b=1$ , it means that the social minimum increases as the average income, namely that to all members of the community has to be guaranteed the mean income. Gini is equal to zero.
- If the elasticity  $b=0$ , the social minimum is corresponding to the subsistence level, Gini can be close to 1
- If  $b=0,5$ , a reasonable value, the social minimum has an increase of 50% of the increase of the mean income. This is one among the definitions used for relative poverty level<sup>viii</sup>

Useless to say, the real problem when trying calculations on real data is the correct identification of the purchase power parity coefficient.

As far as the relationship between equitable payment and social inequality is concerned, it has been understood that a high "general income" (that is can be identified with the arithmetic mean or with the median income) allows for higher "differential incomes", that, as far as work income is concerned, can be identified with the wage differential ratio.

According to Jaques, the fundamentals of that are to be found in the relationship between fair pay and fair expenditure capacity, for a person whose potential capability of work be congruent with the work he's actually doing.

A similar relationship between the PPP pro capite and the maximum Gini has been found by Paolo Malanima in his historical research on the development of Italy.

## **7 Proposal for self-employed people, professionals and their certification**

It's quite difficult to define something equivalent to the time span of discretion for self-employed people as well as for professionals, this is due to the lack of any statistic research about. However, the self-employed as well as professional works are related to time more or less in the same way as identified for executive hierarchy, with the difference that the relationship of the employee to the manager and to the second level manager should be replaced

- At first level, with the relationship with the client or, to be more precise, with the relationship to the referee in the client's, to be considered approximately as the same level, like a coordinator
- At second level, with the relationship to the higher level manager that decides when assume a consultant and whom assume

Then we could probably define the time span of discretion for professionals at least in terms of stratum. A further research could define a criterion for equitable payment, at least for those professionals whose payment is based on time.

## **8 Conclusions**

1. Time span of discretion is the focus of an extensive research conducted over a period of 50 years by Elliott Jaques and others. The concept allows understanding and measuring several elements related to the complexity of a task, complexity of a role and the capability of a person.
2. It is defined as "the length of time that a person can work, into the future, without direction, using their own discretionary judgment."
3. Then the time span of a delegated task can be defined as the elapsed time between the task handing off and the completion of the task itself. Time span can be used to measure the complexity of a task: the shorter the time span, the more certain are its elements and its outcome, the longer the time span, the less certain are its elements and its outcome (the precise definition has more details).
4. The time span of discretion can be used as a guideline to create a system of ranks in order to divide rank from role as well as to compare roles and then working levels and related payment in different organisations. This is quite normal in major organisations; reference can easily be made to the military structure.
5. Each person at a certain time of his life is able to work at a certain individual time span of discretion corresponding to his level of culture, experience, and professional capacity as well as of psychological maturity. The individual time span of discretion increases with the age, the time span corresponding to 55 years of age is defined "nominal time span of discretion".
6. The use of this measuring method, besides allowing comparisons between roles in different organisations and dimensioning of the payment system, allows to compare the individual capacity to the job assigned as well as to make some assumption with regards to the potential capacity. The individual capacity should be congruent with the role and with the payment.

7. The differential payment that is considered equitable increases with the increasing of the general level of the economic system

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<sup>i</sup> Or “time span of discretionality”

<sup>ii</sup> PPA (potential progress assessment) index

<sup>iii</sup> The table is taken from Josephine Jordan, Classification of jobs into level of work (with some integration)

<sup>iv</sup> Quoted from Elliot Jaques – Taking Time Seriously in Evaluating Jobs – Harvard Business Review, September 1979

<sup>v</sup> A correlation coefficient is a coefficient that illustrates a quantitative measure of some type of correlation and dependence, meaning statistical relationships between two or more random variables or observed data values.(from Wikipedia)

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<sup>vi</sup> Elasticity can be defined correctly in term of differential equations. However a simplified definition is “ the ratio of the percentage change in one variable to the percentage change in another variable, when the latter variable has a causal influence on the former”. The correct definition of elasticity of the function  $y=f(x)$  in point  $x$  is

$$e=(dy/dx)/(y/x)=y' x/y$$

<sup>vii</sup> Median income is the amount that divides the income distribution into two equal groups, half having income above that amount, and half having income below that amount. Mean income (average) is the amount obtained by dividing the total aggregate income of a group by the number of units in that group.

<sup>viii</sup> The relative poverty level is calculated as 50% or 33% of the mean income. According to other scholars, it should be 50% of the median income.