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"The Win-Win-Win Papakonstantinidis Model": Bargaining Possibilities When there are Three Involved Parties on a Labour Market and two of them are Active Decision-Makers. –Cases Greece-Germany

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Abstract: That's a summary of our research in Greece and Germany as it concerns with their "labor market" We examine the 3-polar system in the labor market, State-Company-Citizen The aim of this paper is to show the bargaining possibilities when there are three involved parties on a labor market and two of them are active decision-makers. The third one is stakeholder who does not directly take part in the decision-making process. We will show possible solutions for increasing the benefit for all three parties. As introduction basic statistical data from Greece and Germany will be presented and structured. After this, the different behaviors of the parties in both countries will be regarded and their bargaining success will be illustrated.

Keywords: Labour Market, Bargaining Problem Decision Making, Stakeholders, Win-win-win, Profit maximization, the Equi-Harmony, New equilibrium, Sequences limit-up

1. Introduction

Many people study labor market, which is now in the center of the global interest: in one study[1], [...Organizations, governments and society are and will increasingly be confronted with considerations that are less related to business and more about work, people and society as such....The future of jobs: a digitization challenge for all Whether we like it or not: the road of ongoing automation can't be traveled with a purely micro-economic perspective alone. ....] This change is likely to continue in decades during the 21st century, directly combined with the "labor market."

Main Questions:

The continuous conflict between the three (3) main bargaining power poles i.e,

- State
- Company
- Citizen[2]

[1] The role and challenges of business process automation and digitization https://www.i-scoop.eu/role-challenges-business-process-automation-digitization/

[2] Spais-Papakonstantinidis LA –Papakonstantinidis Stavros An innovative bargaining solution analysis for vertical cooperative promotion management decisions Innovative Marketing, Volume 5, Issue 3, 2009: Analogous Application: In marketing Field, Dant and Schul (1992) stressed the need for a third-party intervention for conflict resolution processes in marketing/management The Papakonstantinidis conceptualization is approached as an alternative pricing and promotion strategy to fixed prices. Based on the empirical evidence that Buhalis (2000) presented us about the phenomena of conflict experienced in the distribution channel between hoteliers and tour operators in the Mediterranean summer/seaside resort context, we have decided to examine the case

at the local-state level Citizens, (and their interests lobbies), State and the Company, shapes the landscape of its management and operation. This conflict landscape is directly correlated with the development dynamical trends coming especially from the rapid rate of world urbanization: Market forces based on Instant Reflection Individual Mixed Strategies (IRIMS) between the three power poles i.e Business, Citizen and the Community (State) shape the labor market by a continuous dynamic evolution. This evolution positively influences the labor market towards its spatial integration:

(a) May the labor market be viewed as the result of a continuous conflict among interests' power poles' i.e Business-Citizen and the Community (State) for the domination over the labor market?
(b) Is the 3ple win involvement, able to create equilibrium point in a payoffs matrix coming from "best responses", of the three (3) stakeholders? How the 3-ple win equilibrium is different (if it is) from that of the 2-poles game?
(c) Is any possibility, the 3-win system to produce conflict Equilibria in a globalized and competitive world? What is the possibility ensuring the max profit for each of them ["Pareto efficiency"], so that none of the 3-win stakeholders have any interest to change his/her strategy, without losses for him/herself and for the others?
(d) Could, a 3-ple pole system influence the world economic and social system?
(e) Could the stakeholders' behavior of being changed resulting in the social welfare process' spillover feedback? Should, a 3-ple pole system influence the world economic and social system?
(f) Could the stakeholders' behavior of (locally) being changed resulting in the social "equilibrium[3] spillover feedback?

Research aim

The paper examines the applicability of the win-win-win papakonstantinidis conceptualization regarding to the bargaining games theory analyzing individual winning strategies, through the utilities/shares possible combinations among three "poles" in management decisions:

- State
- Company
- Citizen

Understanding the nature of the bargaining problem and the behavioral dimensions of dependence and cooperation in the Labor Market channels

In order to understand the nature of the bargaining problem many years ago, the term "win-win" was made popular in textbooks and seminars, as a business model in labor market and marketing channels (i.e. Lemeilleur and Tozanli, 2006; Drèze and Bell, 2003; Gummesson, 1997; Cespedes and Corey, 1990). The concept of both people in an agreement "winning" was, at the time, a forward-thinking way of doing business. However, in today's rapidly changing environment of labor market channels, "win-win" seems to be not enough (Klein, 2006).

of the Greek hotel Capsis in order to test the applicability of win-win-win papakonstantinidis bargaining solution for cooperative promotion management decisions. The importance of this try is arisen from the transfer of the pure trust theory to a tourism-marketing context, which can be achieved in order to analyze marketing phenomena of bargaining in tourism marketing alliances characterized by conflict and mistrust (Palmer and Bejou, 1995) and especially in cooperative promotion management decisions of hoteliers and tourism operators. Marketing phenomena related to the understanding of the bargaining problem resolutionand the types of negotiation in which the tourism operator and the hotelier dispute the price, which will be communicated and theexact nature of the transaction that will take place and eventually come to an agreement in terms of a promotion management strategy

[3] Papakonstantinidis LA (2019) "The win-win-win papakonstantinidis model: towards a new equilibrium?" LAMBERT Academic Publishing, January 2019: the suggested $h_{lp}^{*} \leq 1{,}888$ limit-end of the sensitization process

Entering a much more modern concept such as the "win-win-win" or "papakonstantinidis triple win" seems to address the missing factor in the "win-win" model. The old "win-win" model, while it worked exceptionally well in the past, only addresses the two parties entering an agreement, for example: (a) the Citizen and the State or (b)the Company and the State, or (c)The Company and the Citizens However, where is the Community or the Society Potential Profit, in relation with the Labor Market? Could be the missing link?

The paper examined the applicability of an extension of the win-win-win papakonstantinidis conceptualization, as an innovative bargaining solution[4] This study examines the bargaining possibilities when there are three involved parties on a labor market and two of them are active decision-makers. Especially, it focuses on when the social welfare development and the ethical economics could be realized better by the Community (State) participation in the socialization process and investigate the potential evolutions and research challenges on the total Economy and even more in straightening human relations based on the proposed "win-win-win papakonstantinidis model] We are regarding the three poles "state", "employee of job center" and "unemployed person". We came to a possible solution of Labor Market. If we have the win-win-win (Papakonstantinidis) model with the following three poles:

-State –Company -Citizen in the background of DIGITALISATION and AUTOMATISATION we saw the following:1. Three kinds of business interactions: - In former times (and still sometimes today) business was always an interaction of a human with a human. (Examples: local food markets; craftsmen-service, ...).

-The second step is the interaction of humans with machines. (Examples: Self-service cash register at IKEA and other stores; online-shopping; self-driving taxis; e-law (automized juridical support for consumers);).

-The last step is an interaction of machines with machines. (Examples: ETFs (index-fonds which are not managed by persons but algorithms decide and buy alone on the stock market); cameras inside the fridge give information to a computer who orders new food by the internet; a search engine that does not just inform me, when a flight is cheap but buys it.

2. Timeline:Human-To-Human interaction is getting less and less. The importance of the last two kinds of business is growing hand in hand with the progress of digitalization and automatization.

Examples: Quantity of foto-studios, travelling agencies (in Germany 2002: 14.235, 2014: 9829), video libraries (in Germany 2005: 4273, 2017: 601), bank branches (in Germany 2004: 14.989; 2017: 9004) are getting less or even disappear. There is a significant loss of workplaces. These are examples for business linked to consumers. Big parts of the business do not have direct linkage to the consumers. (For example in the contracting department of insurances and electricity companies in former times where people working who are getting replaced by automated systems).

3. Consequences: a) Many workers are losing their jobs, because of computers - do it cheaper (no salary, no wage labor costs) - do not request for holidays - are never ill- work 24/7 - don't

[4] Spais-Papakonstantinidis LA –Papakonstantinidis Stavros An innovative bargaining solution analysis for vertical cooperative promotion management decisions Innovative Marketing, Volume 5, Issue 3, 2009

go on strikes- are (mostly) faster b) The rising unemployment rate will lead to less consumption (of the broad mass) and accumulation of wealth at few people: big data analysts and other (IT-) specialists will have good jobs. And the wealth of the owners of the companies is exploding (see the big 5: Amazon, Apple, Microsoft, Google, Facebook) A possible solution can be drawn using the 3ple win Papakonstantinidis-model:4. Interests of the three poles:a) Company: Growth (perhaps "Maximize Profit" is an expression that companies deny) and contracting employees only they are cheaper/better than computers.b) Employee: Offer work capacity on the labor market if it brings significantly more money (or another benefit like reputation) than staying at homec) State: It should be satisfaction for the people and not the wealth of the nation (a good example is Bhutan where the Gross National Happiness is a goal in the constitution).For achieving this, the State has to interact on the labor market. Possible solutions are: - financial transaction tax (for taking part in the profit from the companies)- universal basic income (for supporting the unemployed people and increasing their consumption possibilities, this increases the companies benefit).

2. The Situation for Unemployed People in Greece

In October 2018 the unemployment rate is at about 18,9 %5. The employment rate is 57,8%[6]. After a maximum of one year the Unemployment benefit which is 359,97 €[7] for a single person, will end.[8] After this, a long-term unemployment benefit [9] will be paid for a maximum of 12 further months[10]. Then the only aid is the family. Greece has a high quantity of long-term unemployed people. In Greece the situation for long-term unemployed people is fatal. Without family there is no possibility to survive. Karantinos writes[11] [...Greece has been facing a protracted recession since 2008. Prior to the crisis, Greece had done rather well with economic growth. Real volume GDP increased by 5.5% in 2006 and by 3.5% in 2007.The crisis hit Greece in late 2008 and since then the economy is in recession. The economic situation deteriorated further in the following years, with sharp contractions of 3.1% (2009), 4.9% (2010), and 7.1% (2011) of GDP. In 2012, the overall contraction of the economy reached 6.4 percent.

The effects of the global economic recession on the Greek economy reached a crisis point in early 2010, when the country was found to be on the brink of bankruptcy. Greece was granted financial aid amounting to €110 billion from the European Commission, the European Central Bank and the IMF. In exchange, Greece agreed to implement a structural reform programme in terms of economic, fiscal, financial and labor market policies. Based on the reforms provided for by the aid agreement, laws were passed in 2010 and in 2011 that made radical changes to employment relationships and were aimed mainly at making the labor market more flexible and at minimizing labor costs (Karantinos. 2011a). The measures included cutting the pay of civil servants, freezing pensions, raising State revenue by increasing taxes, including VAT, and overhauling pension and employment rules. In private sector labor relations, the austerity measures envisaged various policy reforms impacting minimum salaries, redundancies, collective bargaining arbitration and severance pay cuts. New legislation provided for a reduction in pay rates for overtime work and enhanced flexibility in the management of working

[5] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Unemployment_statistics
[6] https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=t2020_10&plugin=1
[7] http://livingingreece.gr/2007/03/17/who-can-collect-unemployment-payments-in-greece/
[8] https://www.a-kasser.dk/unemployment-insurance-in-europe/greece/
[9] http://www.oaed.gr/sychnes-eroteseis-epidomata-paroches (translated with google translate)
[10] https://www.handelsblatt.com/politik/international/grundsicherung-in-europa-und-den-usa-hartz-iv-auf-griechisch/10968098-all.html
[11] Dimitris Karantinos "An evaluation of the social and employment aspects and challenges in Greece" DIRECTORATE GENERAL FOR INTERNAL POLICIES ECONOMIC GOVERNANCE SUPPORT UNIT (EGOV) - National Centre for Social Research (EKKE) http://www.europarl.europa.eu/RegData/etudes/note/join/2014/497760/IPOL-JOIN_NT(2014)497760_EN

time (Karantinos 2011a). The arbitration system also changed, so that both parties can now resort to arbitration if they disagree with the proposal of the mediator. Legislation on minimum wages was also adopted, that introduced sub-minima for groups at risk such as the young and long-term unemployed, and put measures in place to guarantee that current minimum wages remain fixed in nominal terms for three years. New rules extended the probationary period for new jobs to one year, reduced the overall level of severance payments and ensured that the same severance payment conditions apply to blue- and white-collar workers (Karantinos 2012). The first financing programme was followed by a second one, designed to cover the country's debt servicing needs until 2014 and put Greece on a sustainable path. The second financing programme totals €130 billion, plus €34.4 billion of the undisbursed remainder of the first programme. The second package aimed to cut the national debt to 120.5 % of GDP by 2020. As part of the "prior actions" which Greece was to take in order to secure its second bailout, the government was forced to introduce low wage, pension and healthcare cuts in early 2012. In the area of labor market policy, the Government adopted an ambitious set of labor market measures, complementing the reforms passed in 2010 and 2011. In short, the most important of the reforms entailed: a/ a new type of firm-level wage agreement, allowing employers and employees to agree on wages that are less favourable than those stipulated in sectoral agreements, b/ a reduction in minimum wages in the private sector and a modification of wage-setting procedures, including the rules on the expiration of collective agreements and the arbitration of wage disputes, c/ measures to boost part-time work and facilitate more flexible work time, and d/ the introduction of non-subsidised sub-minimum wages for youths (Karantinos 2012)[12]….]

1.a GREECE: Manpower Employment Organisation (OAED)

OAED has been created in 1981 when the Social Party (PASOK) gain the elections Manpower Employment Organization (OAED, the Greek Public Employment Service). Since at least 2000, OAED is undergoing a major organizational change, whose aim is to modernize the provision of employment services. In response to recommendations by the Commission, the new OAED is implementing, among others, the preventive approach to unemployment and the use of personalized assistance. OAED is also undergoing organizational change, including the frequent reshaping of the active labor market measures (Karantinos 2011a). Recently, OAED launched a 6 These reports are available at: http://www.ypakp.gr/ PE 497.760 18 Eures-type portal enabling the efficient matching of the demand and supply of labor. Starting also in 2014, OAED is called upon to develop an implementation plan for the so called Youth Guarantee. According to the EU Council Recommendation of April 2013, establishing a Youth Guarantee, the scheme would ensure that every person under 25 gets a quality offer of a job, continued education, training, apprenticeship or traineeship within 4 months of leaving school or becoming unemployed. Current reform efforts focus on the "re-engineering of the OAED": this project, which is backed by the European Social Fund, envisages a plethora of actions and measures to be implemented in the course of the next two years.

The reform of the OAED is clearly of critical importance for Greece, since the problem of the record high unemployment can only be effectively addressed by a modern and efficient organization. In this respect, improving job matching capacity requires special attention. In implementing the reform, there are three issues that deserve to be classified as "items to watch". The first point relates to human resources.[13] According to the re-engineering plan, since the start of the crisis, OAED has lost approximately 50% of its employees, even though unemployment has reached record levels. As in the case of SEPE, OAED must be strengthened with additional, specialized personnel, adequately trained and well remunerated. The second

[12] Dimitris Karantinos "An evaluation of the social and employment aspects and challenges in Greece" DIRECTORATE GENERAL FOR INTERNAL POLICIES ECONOMIC GOVERNANCE SUPPORT UNIT (EGOV) - National Centre for Social Research (EKKE) http://www.europarl.europa.eu/RegData/etudes/note/join/2014/497760/IPOL-JOIN_NT(2014)497760_EN

[13] Papakonstantinidis LA (2018) The win-win-win model- theoretical aspects, RG, 2018

point relates to three groups of the population, namely young people, older workers and immigrants which are grossly underrepresented among the registered unemployed (Karantinos 2011). It should be noted that these three groups were among the groups most hardly hit by the recession. For reasons of fairness, OAED must make an effort to address underrepresentation, and in this frame a number of policy options are available. These include changes in unemployment compensation and networking with education establishments and NGOs for the young, the design of employment and training courses aimed exclusively at older workers and information campaigns and training of PES staff for third-country nationals (Karantinos 2011). The final point relates to the issue of collaboration with other mediating structures. The scale of the unemployment problem is such that requires a lot to be done in this direction. With a few exceptions, OAED still holds a monopoly in job brokerage and continues to this day to be the main agency responsible for the integration of the unemployed, although there is now much more variety as regards providers of active measures. By now, it is generally accepted that private placement agencies (PRES) should coexist with the PES, and ILO Convention No. 181, 1997 revised Convention No. 96, 1949 in this direction. This Convention balances the recognition of the productive role that can be played by PRES in the delivery of specific labor market services with the need to ensure that basic rights of workers covered by this Convention are protected. The Greek government must determine whether or not PRES can operate as businesses, and, if so, under what conditions will they operate. In developing collaboration ties with other mediating structures, it is evident that a new regulatory framework, providing a common code of practice, setting rules for collaboration and exploiting synergies, is clearly needed.

In October 2018 the unemployment rate is at about 3,3 %[14]. The employment rate is at 79,2%[15]. Every employee takes part on the mandatory unemployment insurance and pays 2,5% (starting from 1st of January 2019, before it was 3%)[16] of his salary for being protected against unemployment. In the first year the unemployment benefit for a single person is 60% of the last net salary.[17] After one year of unemployment the unemployed person gets social aid if he is needy and has no assets over a certain limit.

This basic social aid is up to € 424[18] per month plus the required money for the flat. The unemployed person must make himself available for the labor market, otherwise, his social aid can be reduced.

Games

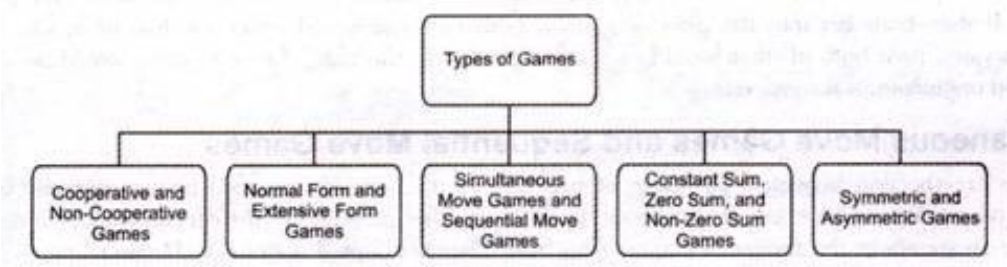


Figure-1: Types of Games

The different types of games (as shown in Figure-1) are explained below:

[14] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Unemployment_statistics
[15] https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=t2020_10&plugin=1
[16] https://sozialversicherung-kompetent.de/sozialversicherung/zahlen-werte/867-beitragssatz-arbeitslosenversicherung-2019.html
[17] https://www.arbeitsagentur.de/arbeitslos-arbeit-finden/anspruch-hoehe-dauer-arbeitslosengeld

[18] https://www.hartziv.org/news/20180912-hartz-iv-erhoehung-kommt-mehr-geld-ab-2019.html

1. Cooperative and Non-Cooperative Games:

Cooperative games are the one in which players are convinced to adopt a particular strategy through negotiations and agreements between players. Let us take the example cited in prisoner's dilemma to understand the concept of cooperative games. In case, John and Mac had been able to contact each other, then they must have decided to remain silent. Therefore, their negotiation would have helped in solving out the problem.

Another example can be cited for pan masala organizations. Suppose pan masala organizations have high ad-expenditure that they want to reduce. However, they are not sure whether other organizations would follow them or not.

Cases: Greece-Germany

Table 1

	Unemployment rate in October 2018	Employment rate in 2017	Unemployment benefit per month	Monthly social aid (after end of unemployment benefit)
Greece	18,9	57,8	359,97 € (first year)	0 (after 2 years)
Germany	3,3	79,2	About 60% of net salary	424€/month (after one year)

Bargaining in Greece

In Greece, the unemployment rate is the highest of all EU countries. In the same time, Greece has the highest rate of the black economy: 20,8[19] of the gross domestic product (GDP). Further 30%[20] of the Greek population admit that they pay for undeclared work in the last 12 months.

These two numbers (20,8% and 30%) must not be confounded, for several reasons. Some of them are:

- There are people who do not admit that they pay for undeclared work.
- Some people even do not know that they pay for undeclared work.
- The rate of the black economy can only be estimated.
- The participation of the consumers on the black economy is not constant. Some consumers buy many products/services on the black market and some only few.
- The participation of the retailer on the black market is also individual. Some offer only some extra hours/products on the black market. Others are working illegal full-time.

High taxes and social security contributions do not serve as an explication for the high acceptance of undeclared work. The taxes and security contributions are lower in Greece (40,2%) than in Germany (49,4%).[21]

In legal business we have the three bargainers:

[19] https://de.statista.com/statistik/daten/studie/163720/umfrage/schattenwirtschaft-in-der-oecd-2010/
[20] http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_402_en.pdf, page 18
[21] http://www.spiegel.de/wirtschaft/soziales/steuern-deutschland-ist-vizemeister-bei-der-abgabenlast-a-1142772.html

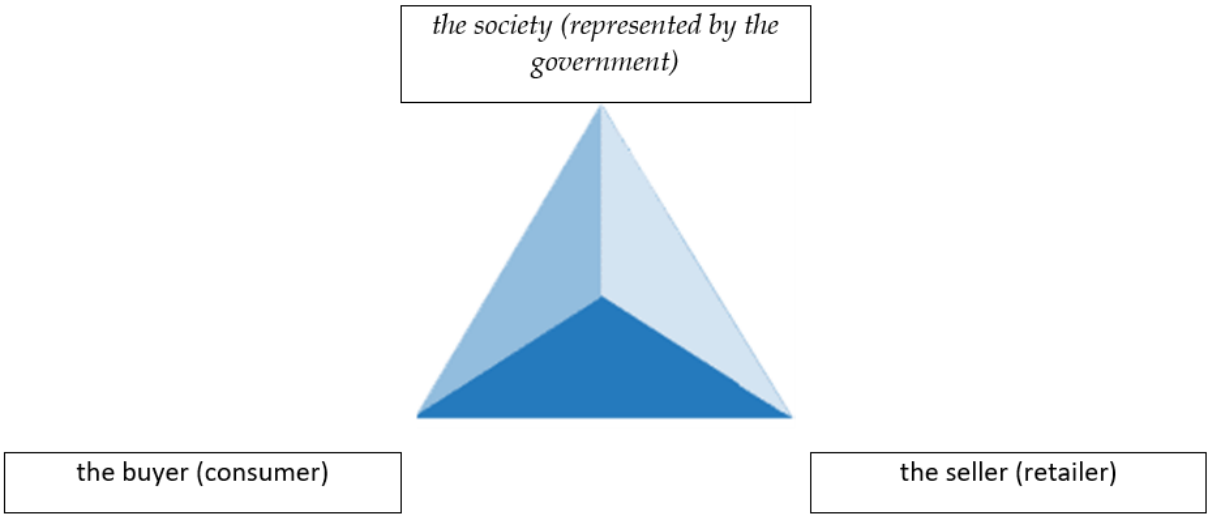


Figure 2: 3-pole-model – the three bargainers in Greek legal business

As we have the two decision-makers consumer and retailer, there are four cases to consider:

1. The consumer and the retailer want to work legally. The consumer pays 100 for a product or service and the retailer earns 60 because he must pay 40 for the state (taxes and social security).
2. The consumer wants to work legally and the retailer illegal. Often in this case, the consumer does not know that the retailer is working illegal. So, he pays 100 and the retailer earns 100. It can happen, that he is taking part on the black economy without wanting.
3. A retailer is an honest person, but the consumer is asking for illegal work: No job will be done.
4. Both decide to cheat the state and divide the money that should be paid for taxes and social security. The consumer pays 75 and the retailer earns 75. The state earns nothing. This case is not usual in small business, like supermarkets and restaurants, but it is common for bigger jobs like car repairing.

There are two possible main reasons for the people working in undeclared jobs, because they cannot find legal jobs, or their intention is to avoid taxes. Finding an answer on this question does not change the behavior of the people. For changing their behavior there exist three possibilities, which we can see in the following three-level model which highlights the payoff of the three involved parties depending on the decision of the consumer and retailer.

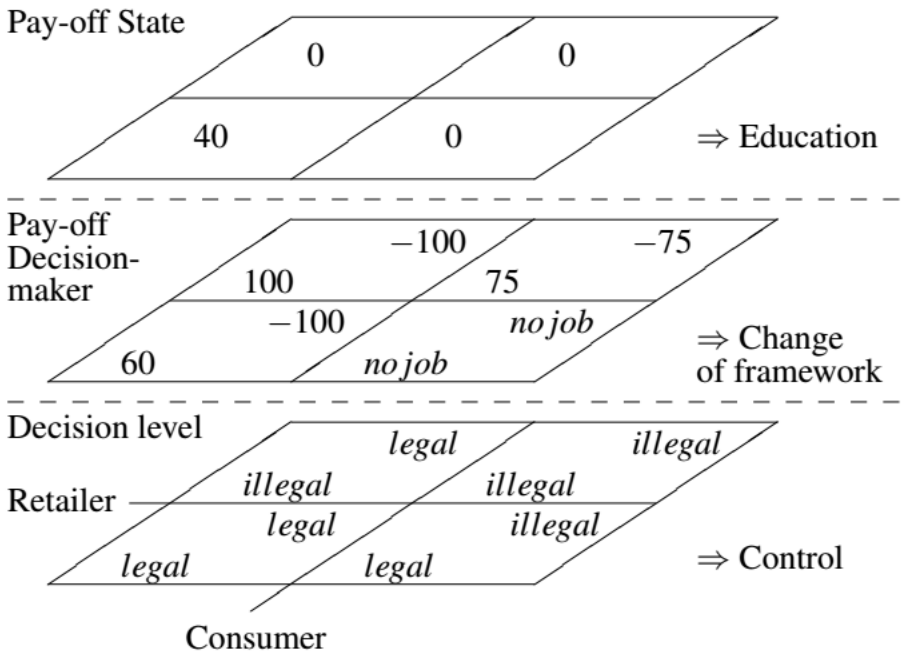


Figure 3: 3-pole model with payoffs – Greek economy

The State has the three possibilities to influence on the to decision-makers: Control them, change the framework and educate them.

A. Control

In 2013 the Greek government launched the law, that restaurants only must be paid if receipts are handed out[22] This reduces frauds, but does not completely avoid them, because the consumer has no benefit in asking for a receipt.
In the future with the growing popularity of electronic cash, it will be even easier to control the way of the money and avoid frauds.

B. Change of framework

In 2017 the Greek tax lottery was launched.[23] This lottery is a big success in Brazil since 2007.[24] It gives a strong motivation for the consumer to ask for legal service/products. "Tax authority's one million euros lottery boosts card use in Greece**)[25]**
This is a change of framework because the rules of the "game" changed. Before, the motivation for the consumer to force the retailer to work legally was 0. Now it is a lottery coupon.
Notes:

- As the black economy in Greece is often (but not always) related to foreign tourists who cannot take profit of the lottery, an expansion of the lottery would be a help for increasing its benefit.
- The big national companies like banks and petrol companies have much more "difficulties" in participating on the black economy than the small retailers and restaurant owners. For them, a consumer who asks for legal service/products does not change anything, because all service and products are legal.

[22] https://greece.greekreporter.com/2012/10/26/tax-evasion-plan-no-receipt-no-pay/
[23] https://www.naftemporiki.gr/story/1300421/tax-receipt-lottery-finally-debuts-in-greece-on-thur
[24] http://www.agora.uol.com.br/grana/ult10105u791442.shtml
[25] https://www.tomosnews.gr/en/greek-news/economy/28581-tax-authority-s-one-million-euros-lottery-boosts-card-use-in-greece.html

C. Education

In 2018-2019 triple basic reforms, were voted as laws from the Greek Parliament:

a. Strengthen the role of the High School in the National Educational System
b. Change the way of entrance from the High School to the Public Universities
c. Merging Universities and Technological Educational Institutes, so to reduce their number in terms of their scientific fields

[Now, there is a conflict between SYRIZA political party (Government) and the "New Democracy" Party (Official Opposition) on the Private Universities(Article 16 of the Constitutional Law) and the "students loans"].

Results

In 2013 the unemployment rate in Greece was 27.5% and now is below 19%.[26] This is a reduction of almost 50% of unemployment. The black economy is reduced by the above-mentioned methods (and others). Perhaps not all the published growth of economy of 1,35%[27] in 2017 is a real growth but a shift from the black economy to official economy. In 2018 the estimated growth of about 2,02% [28] is also partly based on this shift. Nevertheless, such a shift to "white" economy is right against the society and its fair members.

We see, that the Papakonstantinidis 3ple win-win-win-model creates added value for all three poles:

- The government earns more taxes and pays less for social aid.
- The consumers have the benefit of the lottery, They also can have good conscience on participating on something good.

They can have the same good conscience like the consumers. The retailers on long term will have to pay less for social security and taxes, because if more retailers pay, the rates can be reduced. For example in Germany the unemployment security contribution was reduced from 3% to 2,5% on 1st of January 2019, due the low unemployment rate.

3. Bargaining in Germany

In Germany, the situation is completely different from Greece. There the economy is almost under full employment. It is hard to reduce any more the unemployment rate of currently 3,3%. The economy demands for professionals and the government is planning a Fachkräfteeinwanderungsgesetz[29] (immigration law for professionals). Therefore, in Germany a reduction of black economy cannot increase the legal market significantly.

In Germany another bargaining is interesting to highlight:
The unemployed people are administrated by the "Bundesagentur für Arbeit" (BfA) (employment agency), which has about 95.000 employees[30].
In 2014 about 1.7 million unemployed people found their (new) job without the employment agency. The employees of the employment agency found regular 271.000 jobs for unemployed people in Germany[31]. This is a ratio of less than 3 jobs per employee of the employment agency.
The same source[32] informs, that after one year only 57% of the people who found their job with the aid of the BfA are working and covered by social insurance ("sozialversicherungspflichtig"). This reveals that 43% of the of the work of the BfA had no

[26] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Unemployment_statistics#Longer-term_unemployment_trends
[27] https://de.statista.com/statistik/daten/studie/14538/umfrage/wachstum-des-bruttoinlandsprodukts-in-griechenland/
[28] https://de.statista.com/statistik/daten/studie/14538/umfrage/wachstum-des-bruttoinlandsprodukts-in-griechenland/
[29] https://www.bmi.bund.de/SharedDocs/gesetzgebungsverfahren/DE/fachkraefteeinwanderung.html
[30] https://con.arbeitsagentur.de/prod/apok/ct/dam/download/documents/Geschaeftsbericht-2017_ba017197.pdf
[31] http://dip21.bundestag.de/dip21/btd/18/040/1804073.pdf
[32] http://dip21.bundestag.de/dip21/btd/18/040/1804073.pdf

long-term benefit and reduces the rate to 1.6 long-term jobs arranged per employee of the agency.

This ratio seems to be very low. This has several reasons:

- The employment agency is not only responsible for the unemployed people. It has much more jobs. For example, it administrates and pays the child benefit ("Kindergeld").
- Often the job researchers of the employment agency only get in touch with the unemployed people, who are not able or willing to find a job on their own.

There is almost full employment, with about 820.000[33] long-term unemployed people and 95.000 workers at the BfA. In the same time there about 795.000[34] vacant jobs in Germany registered at the BfA. Of course, not all these long-term unemployed people have the necessary qualification and geographic flexibility to these jobs, but it is obvious, that not all of them are interested and/or able to work in a regular job. This is highlighted by the fact, that 43% of the job-arrangements of the BfA are cancelled within less than one year.

We have the following three bargainers:

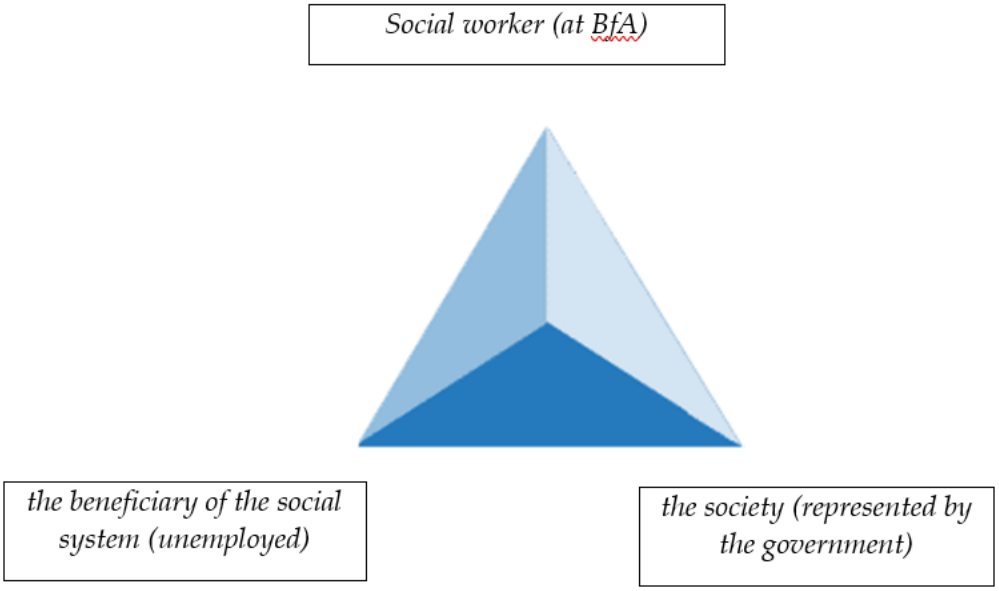


Figure-4: 3-pole model of German job-agency

There are again four possibilities:

1. The unemployed person is really **searching** for a job and the worker at the BfA is **searching**, too. **Both have hope** for having success in searching and if they have success, there will be profit for both and even for the state (taxes of the new employee, and fewer costs for the social system). This can lead to a **possible profit** for the state, because if they are successful, the expenditures for social aid will be reduced and the taxes will rise.
2. Both know about the little probability of finding a job at the BfA. Both decide that passive **management** is the most convenient situation for them. This means, that the required papers for getting the social aid are fulfilled correctly and both spend their time with goals which promise more benefit that searching a job for this unemployed

[33] https://de.statista.com/statistik/daten/studie/666199/umfrage/anzahl-der-langzeitarbeitslosen-in-deutschland/
[34] https://de.statista.com/statistik/daten/studie/2903/umfrage/jahresdurchschnittswerte-des-bestands-an-offenen-arbeitsstellen/

person. This **resignation** constellation does not bring benefit for the society, but it is still **cheaper** for the government than the last two options.

3. The worker at the BfA is motivated to help his customer and invests time in **searching** for a job. But the unemployed do not expect much help from the BfA. He knows that the worker in the BfA will not be a big help for finding a job that fits him. In 85% of the cases, he will find a job without the BfA and the jobs offered by the BfA are mostly not so good and lead to a dropout rate of 43%. Therefore he prefers passive **management** of the BfA. Both are **stressed**, because of non-congruent expectations. This is **expensive** for the government who pays the worker at the BfA.
4. The unemployed person is expecting help for his job-**search**, but the worker at the BfA knows that their probability to find a job without him is more than 6 times higher, than with him. Therefore (and perhaps of the high workload) he only is doing passive **management** of his customer. We have the same **stress**-situation as before which is again **expensive** for the government.

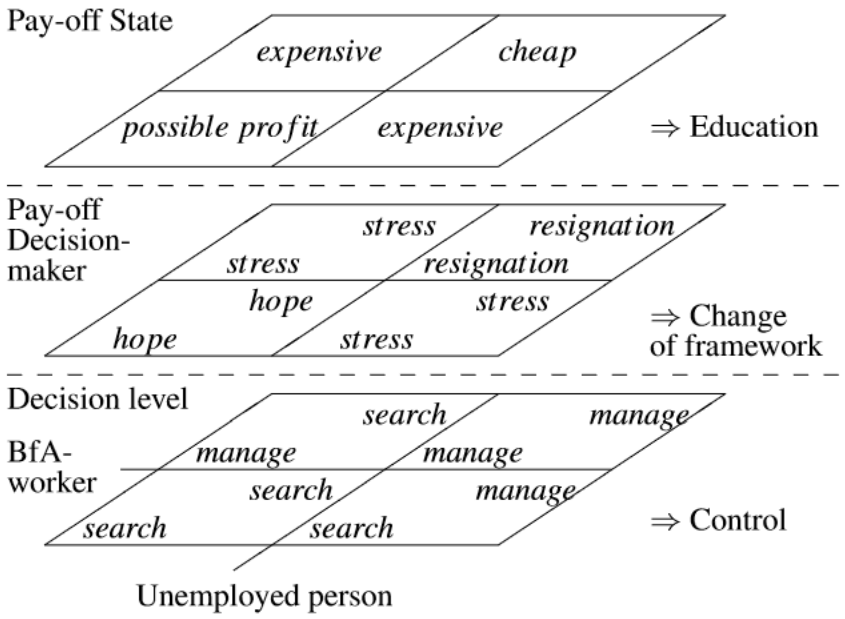


Figure 5: 3-pole model of German job agency with payoffs

In this visualization, we can see, that the best situation is when both decision-makers are searching and having hope. The government shall support them on this way by educating them, controlling them and motivating them with an adequate pay-off. Currently, the BfA use these three keys to influence on the two decision-makers.

If case 1 does not lead to a job in an appropriate time, at least one of the two bargainers will lose hope, and this will lead to one of the other cases. In case 2 and 3, probably there is a high-stress level, because of the (unspoken) different expectations. In the last case, both parties have arranged with the situation and know that administrating the situation is the causes the smallest conflicts.

After a certain time at least, one will lose hope. After reaching this point of no return, the government has only costs, if it keeps forcing the two decision-makers in searching for a job, because senseless trainings are done and the worker at the BfA cannot care on more promising candidates. This means that the government shall not force the employees of the BfA to work longer than a certain time on one case and that (after a time) there shall not be a punishment

for the unemployed person if he rejects a job. This leads to the "basic income" which is an unconditional income for every citizen. This idea is often discussed, and its economic and social benefits are now highlighted with the 3ple win-win-win model. Which in this case has no winner, but the loss can be minimized.

4. Data Analysis and Interpretation

We have two completely different situations for bargaining, but in both cases clever bargaining leads to a more sustainable economy because expensive resources are not misdirected to the black market or inefficient work.
The 3d-visualizations (Figures 2 and 4) show, how a certain profit can guarantee for all three parties: For the two decision-makers and the society as well. It also shows which are the three handles of the society to influence on the decision-makers: control, change framework and education.

The two chosen examples help to understand the broad usability of the win-win-win Papakonstantinidis model. It unifies the advantages of the stakeholder model and the classical game-theory because, like the stakeholder model it shows whom to consider, but it eliminates the big weakness of the stakeholder model, that does not allow forecasts. With the new model, it is possible to predict the behavior of the bargainers like in the classical game theory.

Social worker (at BfA)

the beneficiary of the social system (unemployed)

the society (represented by the government)

Greece	30%	20,8 %	40,2 %
Germany	7%	9,5 %	49,4 %
	Consumer	Worker	State

The situation in the in the regarded countries is completely different.
In Germany, there is a long-term social aid with (weak) control and (little) sanctions if the unemployed people are not willing to work.

In the win-win-win-papakonstantinidis model the three bargainers are winning.
This will be the next step to be illustrated.
German system:
Possible solutions are:

- Taking away (from the employment agency) the work that has nothing to do with unemployment à transfer it to organizations which are specialized
- Taking away the job search ☐ transfer it to private companies who do it better
- Improve the efficiency of administrating unemployed people for
- Automatisation of processes (?)

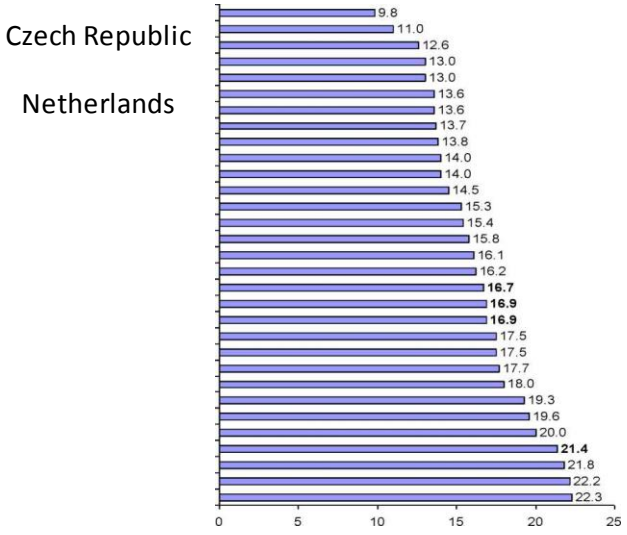
Short:
A: The beneficiary of the social system can cooperate with the system and the social worker or he can refuse cooperation.
B: The social worker faces two kinds of unemployed people:
a) The one who is cooperating and really searching for a job
b) The one who is refusing cooperation and only wants the money from the system
Cooperation with type a) is a Papakonstantinidis win-win-win situation.
Cooperation with type b) can be b1) pushing and pulling or b2) simply giving him (a reduced) aid
C: The society has the three possible levers for influencing on the two decision makers:
- Education
- Adaption of the framework
- Control

The outlook can include two aspects:
1. Ideas if the recommendations for the unemployment benefits can be adapted to other parts of the welfare system (health care, crime evasion).
2. Effects of the unemployment benefits on the other parts of the welfare system[35]

Greece-Data

1. Poverty-unemployment

In Greece the situation for long-term unemployed people is fatal. Without family, there is no possibility to survive.
It is interesting to see, that the unemployment rate is proportional to the undeclared work. The linkage is evident.
Besides, there is the undeclared work reduces the unemployment rate.
Graph 1. Poverty rates in EU countries: 2011



Source: Eurostat (EU-SILC).[36]

GREECE

[35] see for example https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4318319/
[36] *NOTE: GREECE, 2015 unemployment: 27%.... In the ages 25-45 is about 60% (2011-2017)*

Figure 6: Inter-temporal trends in poverty rate

In absolute terms, i.e. when the poverty threshold remains stable over time in real terms, the poverty rate during this period has been significantly reduced. For example, the at-risk-of-poverty rate for the year 2010 (20.1%), calculated using the poverty threshold for the year 2005 (60% of the median income for 2005 expressed in 2010 prices, on the basis of the harmonized index of consumer prices) would be only 16.0%, i.e. 4.1 percentage points lower. In other words, 16% of the population in 2010 would be considered as being at risk of poverty under the conditions prevailing in 2005. However, the corresponding poverty rate for the following year (2011) climbed to 22.9%, suggesting that in only a single year in the current crisis the poverty rate in absolute terms increased by 6.9 percentage point (or by 43.1%). Moreover, people living in households with very low work intensity (none is working or works less than 3 months in total per year) amounted to 837,300 persons while in the previous year (2010) they were 544,800 persons, ie an increase of 53.7% compared to the previous year. Individuals living in households with very low work intensity, aged 18-59 years old, are estimated at 13.2% for the total population, 11.9% for men and 14.5% for women.

Poverty in Greece in recent years seems to have shifted away from the elderly towards younger couples with children and young workers. In particular, the percentage of children up to 15 years living in households which are below the relative poverty threshold rose to 23.3% in 2011 (EU-27: 20.3%), from 19.3% in 2005 which is about two percentage points higher than the corresponding percentage for the whole population. By contrast, the poverty rate among the elderly (aged 65 years or over) fell down sharply, to 23.6% in 2011 (EU-27: 16.0%) from 27.9% in 2005 (Graph 3). Moreover, the low and declining poverty rate in the case of temporary employment (2011: 8.9%) as well as in the case of part-time employment (2011Q 21.4%), means that the recent flexible forms of employment do reduce poverty[37] Greece has a poor ranking among EU countries also in terms of income inequality. According to Gini coefficient values presented in Graph 4, Greece together with Latvia, Bulgaria, Portugal and Spain ranks among the five EU countries with the higher rates of inequality. In particular, the EU-SILC 2011 survey indicates Gini coefficient 33.6 (incomes of 2010) for Greece instead of 30.7 for the average of EU-27 countries. Moreover, the wealthiest 20% of the country's population has a 6.0 (2009: 5.6) times higher income share than the income of the poorest 20% of the population (S80/S20 indicator), while the value of this ratio is 5.1 (2009: 5.0) for EU-27 as a whole It should also be noted that the pay for male employees in Greece is 12.7% higher than the corresponding pay for women (7% in the public sector and 19.6% in the private sector). [you can keep what do you need]

[37] data : Mitrakos Theodore (2/2014) "Inequality, poverty and social welfare in Greece: distributional effects of austerity" BANK OF GREECE Economic Research Department - Special Studies Division

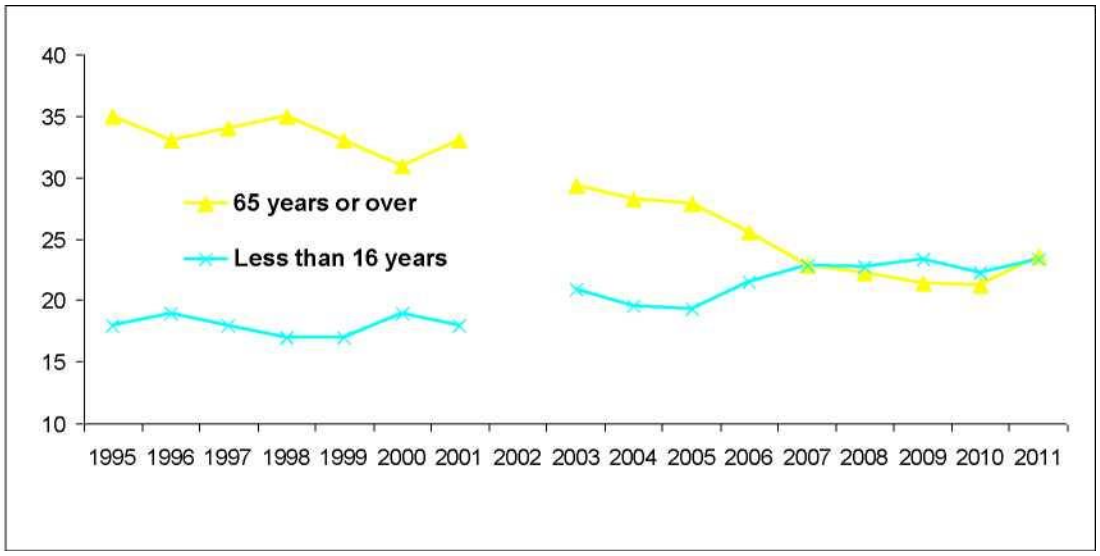


Figure 7

Besides, "..Fathers are digging recyclable in the tanks, homeless people look for rubbish and doctors warn of a humanitarian crisis in the middle of Europe: It is clear on the former industrial suburbs of Perama, Nicaea or Aspropyrgos west of Athens that the left-wing extremists of Syria they won this election - and what follows, a catalyst and a symptom of the economic decline of the whole country is: the lack of a security system. Because losing his job in Greece, the risk of slipping quickly into poverty. A basic security like Hartz IV, introduced in Germany ten years ago, or no social assistance in Greece...[38]

There has to be a certain difference between the minimum salary and social aid.

Game Theory: Tucker (1950) "Prisoner's dilemma[39]:
The prisoner's dilemma is a standard example of a game analyzed in game theory that shows why two completely rational individuals might not cooperate, even if it appears that it is in their best interests to do so. It was originally framed by Merrill Flood and Melvin Dresher while working at RAND in 1950. Albert W. Tucker formalized the game with prison sentence rewards and named it "prisoner's dilemma", table.

[38] handelsblatt.- https://www.handelsblatt.com/politik/international/grundsicherung-in-europa-und-den-usa-hartz-iv-auf-griechisch/10968098-all.html

[39] Two members of a criminal gang are arrested and imprisoned. Each prisoner is in solitary confinement with no means of communicating with the other. The prosecutors lack sufficient evidence to convict the pair on the principal charge, but they have enough to convict both on a lesser charge. Simultaneously, the prosecutors offer each prisoner a bargain. Each prisoner is given the opportunity either to betray the other by testifying that the other committed the crime, or to cooperate with the other by remaining silent. The offer is:

- If A and B each betray the other, each of them serves two years in prison
- If A betrays B but B remains silent, A will be set free and B will serve three years in prison (and vice versa)
- If A and B both remain silent, both of them will only serve one year in prison (on the lesser charge).

B A	B stays silent	B betrays
A stays silent	5 5	20 0
A betrays	0 20	1 1

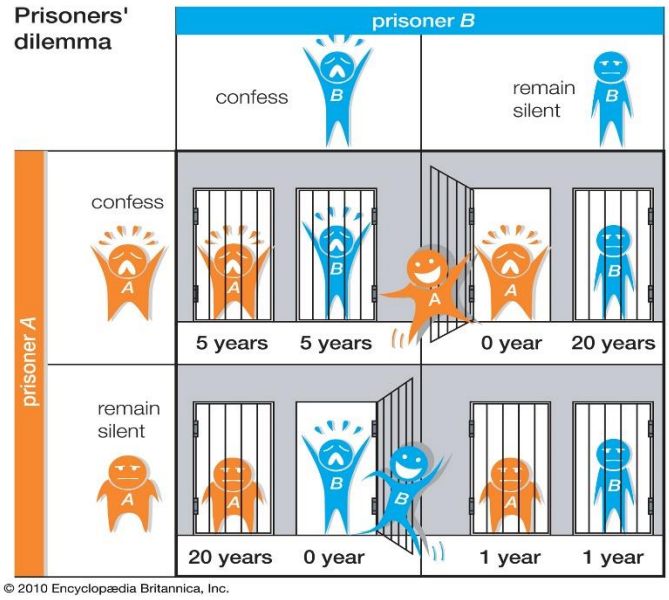


Figure 8

Source: Britanica

It is implied that the prisoners will have no opportunity to reward or punish their partner other than the prison sentences they get and that their decision will not affect their reputation in the future. Because betraying a partner offers a greater reward than cooperating with them, all purely rational self-interested prisoners will betray the other, meaning the only possible outcome for two purely rational prisoners is for them to betray each other. The interesting part of this result is that pursuing individual reward logically leads both of the prisoners to betray when they would get a better reward if they both kept silent. In reality, humans display a systemic bias towards cooperative behavior in this and similar games despite what is predicted by simple models of "rational" self-interested action.[40]

40

- Milovsky, Nicholas. "The Basics of Game Theory and Associated Games". Retrieved 11 February 2014.
- Fehr, Ernst; Fischbacher, Urs (Oct 23, 2003). "The Nature of human altruism" Retrieved February 27, 2013.
- Tversky, Amos; Shafir, Eldar (2004). Preference, belief, and similarity: selected writings (PDF). Massachusetts Institute of Technology Press. 2013.
- Toh-Kyeong, Ahn; Ostrom, Elinor; Walker, James (Sep 5, 2002)

HYPOTHESIS:

- The main hypothesis of this study is that labor market equilibrium may be sighted as the output of the bargaining trends, inside the community. From this point of view, Labor Market tables a number of questions, mainly concerned on conflict resolution between the three power poles State, Company, Citizen.

- As the three poles are in constant negotiations, then each of them should prevail over the other two, thus introducing in the bargaining problem. Bargaining behavior must, therefore, be defined. The "win-win-win papakonstantinidis" conceptualization tries to find ways for the 3-poles bargaining conceptual Equilibria, under conditions, thus maximizing expected utilities for all the involved parts in the Labor Market Practically, it may supports that public involvement (Community-State) -in terms of "knowledge creation" and "pure individual strategies" is concerned.

- This study focuses on the sensitization process as the reaction to give information, which influences the socio-economic behavior in the labor market Public participation presupposes that a methodological approach could be applied in the labor market by easy steps towards motivating local people and involving the Community. – see at the Arnstein Ladder

Table: Five steps towards **C**ommunity **C**ohesion's **C**ase **(C-C-C)**[41]

partnership
Involvement
Participation
sensitization
Information

The triple-win graphs: the equi-harmony point h_{lp}^{*}
Kronberger, Papakonstantinidis, 2019/02

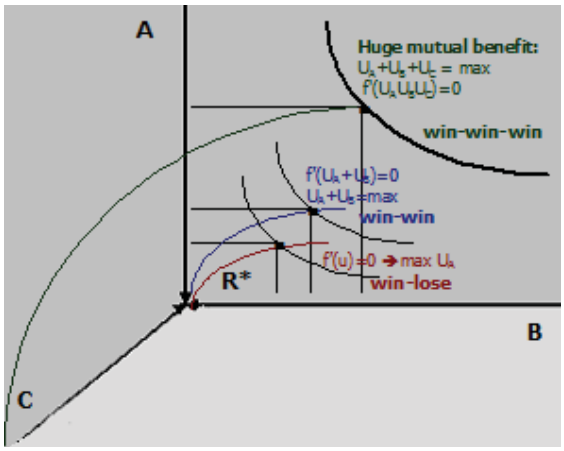


Figure 9

5. Methodology

Below, is a table, which aims to be proved and the relative methodological tools are described in:

Table

[41] Arnstein ladder , 1967

nr	Aims to be proved within the labor market	tools	%
1	Stakeholders' Bargaining Power	Kaldor-Hicks efficiency	20
2	Utility function –profit maximization	Marginal economics	25
3	Bargaining Behavior	Nash-Cournot Equilibrium	30
4	Measuring welfare	Calculus: Math sequences	25

Papakonstantinidis, 2019

Pareto efficiency or Pareto optimality, is a state of allocation of resources in which it is impossible to make any one individual better off without making at least one individual worse off.

$$\max..Utility..Function:...\max U(x_1...x_n)$$

$$\Sigma p_i x_i \le M,....x_i \ge 0,..\forall x_i \in \{1,2..n\}$$

Kaldor–Hicks improvement

1. A re-allocation is a Kaldor–Hicks improvement if those that are made better off could hypothetically compensate those that are made worse off and lead to a Pareto-improving outcome. The compensation does not have to occur (there is no presumption in favor of status-quo) and thus, a Kaldor–Hicks improvement can, in fact, leave some people worse off. A situation is said to be Kaldor–Hicks efficient, or equivalently is said to satisfy the Kaldor–Hicks criterion, if no potential Kaldor–Hicks improvement from that situation exists.

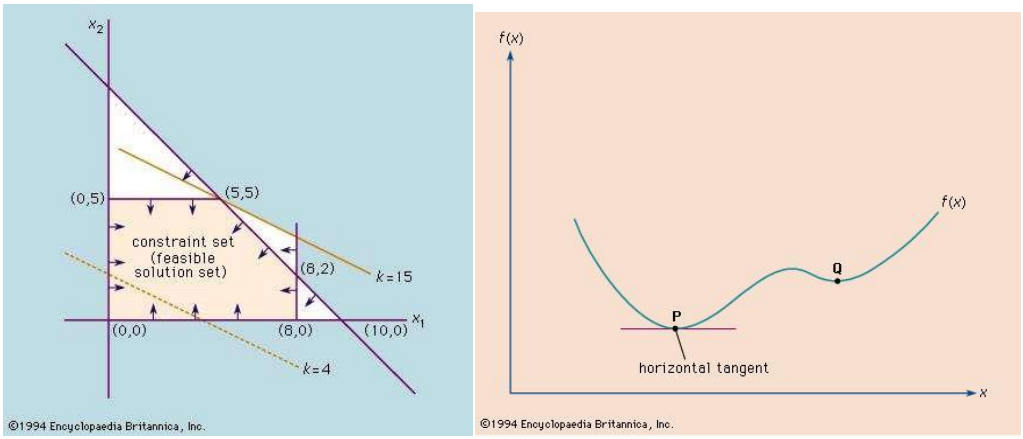
In particularly,

2. The study aims to highlight the existence and importance of a tri-polar process approach of science and practice - everyday thinking For this purpose develops individual objectives which reaches through the "thought experiment":
3. The "Impossibility Theorem (Kenneth Arrow (1951) , "Social Choice" does not exists: It is impossible and more persons to agree each-other: "If we exclude the possibility of interpersonal comparisons of utility, then the only methods of passing from individual tastes to social preferences which will be satisfactory and which will be defined for a wide range of sets of individual orderings are either imposed or dictatorial."
4. Pareto efficiency occurs where at least one party benefits and nobody is made worse off. Kaldor Hicks states that a decision can be more efficient – as long as there is a net gain to society – enabling any potential losers to be compensated from the net gain.
5. According to the Haldor-Hicks criteria, it would be efficient to go ahead because of the net gain and the fact that, in theory, the groups losing out could be compensated.
6. Under Kaldor Hicks, the key principle is the idea that, in theory, people could be compensated. This compensation doesn't actually have to occur. Whereas under Pareto efficiency, this compensation would have to occur through voluntary agreements between two parties
7. The Kaldor–Hicks criterion is widely applied in welfare economics and managerial economics. For example, it forms an underlying rationale for cost-benefit analysis. In cost-benefit analysis, a project (for example, a new airport) is evaluated by comparing the total costs, such as building costs and environmental costs, with the total benefits, such as airline profits and convenience for travelers. (However, as cost-benefit analysis may also assign different social welfare weights to different individuals, e.g. more to the poor, the compensation criterion is not always invoked by cost-benefit analysis.)

Now, our attempts are focused on finding a "new" "social welfare form…".. treating the community as a whole as an aggregate entity that participates in a social welfare game(Prof Creg Tovey, RG,2016)

Gödel vs Arrow

Gödel's incompleteness theorems are two theorems of mathematical logic that demonstrate the inherent limitations of every formal axiomatic system containing basic arithmetic. These results, published by Kurt Gödel in 1931, are important both in mathematical logic and in the philosophy of mathematics. Gödel's two incompleteness theorems concern the limits of provability in formal axiomatic theories:. The first incompleteness theorem states that in any consistent formal system F within which a certain amount of arithmetic can be carried out, there are statements of the language of F which can neither be proved nor disproved in F. According to the second incompleteness theorem, such a formal system cannot prove that the system itself is consistent (assuming it is indeed consistent).



..... Linear.....non-linear
(Constraint set bounded by the five linesx1 = 0, x2 = 0, x1 =…)

Figure 10

PART III: Suggestions: toward an new equilibrium?

The win-win-win papakonstantinidis model

Proposal: win-win-win/ utility max

Share A (%)	Share B (%)	Utility A	Utility B	Utility AXB	Share C (%)	Utility C	Utility AXBXC
90	4	1	71	71	6	1	71
80	13	2	70	140	7	2	280
70	22	5	68	340	8	3	1020
60	31	10	64	640	9	4	2560
50	40	16	60	960	10	5	4800 max
41	50	23	52	1196	9	4	4784
32	60	31	40	1240	8	3	3720
23	70	40	24	960	7	2	1920
14	80	50	12	600	6	1	600

Figure 11

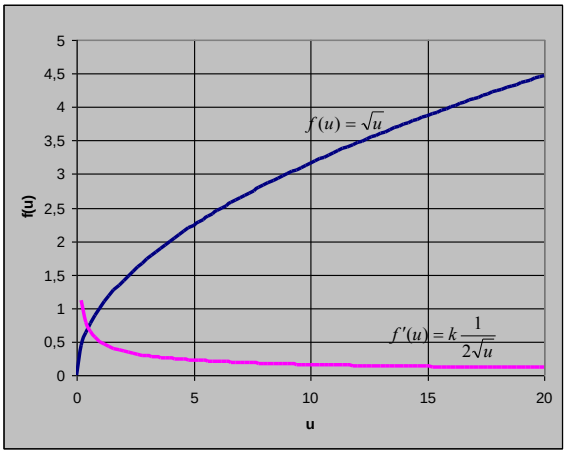


Figure 12

$$U_i = u_i \times p_i$$

$$U_A = u_A \times p_A$$

$$U_B = u_B \times p_B$$

$$U_C = u_C \times p_C$$

U = pleasant.experiance..according..to....a..strictly..personal..positive.list

u = individual...utils..(not..measuring)

p : probabilities, these..pleasant..experiance's..utils..to..occure..in..the...A.B.C...individuals

In a 3-win system, we have merely to maximize the profit –objective function; or, to minimize its first From this point of view, "payoffs" are the incentives, for which 2 bargainers start negotiations The final [agreement or not agreement] are the outcome.
In this proposed method, we recognize that (A-B and the COMMUNITY) negotiators pushed by expected payoffs

derivative: $MAX..f(x)=MAX\prod\rightarrow\frac{df(x)}{dx}=f'(x)=0$, - see the utility function and the marginal utility function, in the graph above: $in..x=20...f(x)=MAX,but..f'(x)\rightarrow 0$

U_A, U_B, U_C

when

$U_A = x$
$U_B = y$
$U_c = (100-x-y)$

$U_A \cap U_B \cap U_C = U_A \times U_B \times U_C = MAX \Leftrightarrow (U_A \times U_B \times U_C)' = 0$

$xy(100-xy)^n = MAX \Leftrightarrow [xy(100-x-y)^n]' = 0$

generally
$(f(x)*g(x))' = f'(x)*g(x)+f(x)*g''(x)$

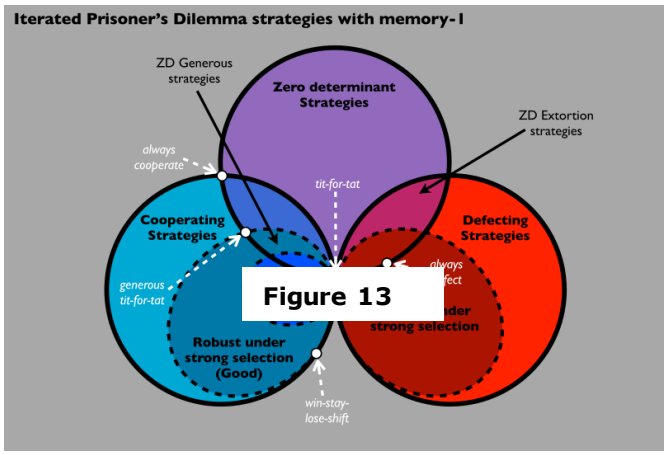


Figure 13

$$U_A \cap U_B \cap U_c = U_A * U_B * U_c = \max$$
$$(U_A * U_B * U_c)' = 0$$

$$u_i = f_i(s)$$

$$xy(100-x-y)^n = \max \rightarrow [xy(100-x-y)^n]' = 0$$

$$[xy(100-x-y)^n]' = x'y(100-x-y)^n + xy'(100-x-y)^n = xy[(100-x-y)^n]' = 0$$

$$xy(100-x-y)^n]' = y(100-x-y)^n + x(100-x-y)^n + nxy(100-x-y)^{n-1} = 0$$

$$(f(x) * g(x))' = f'(x) * g(x) + f(x) * g'(x)$$

$$[xy(100-x-y)^n]' =$$
$$y(100-x-y)^{n-1}(100-x-y) + x(100-x-y)^{n-1}(100-x-y) + nxy(100-x-y)^{n-1} = 0$$

$$It...must: .....xy(100-x-y)^n = \max \rightarrow \lim_{x\to\infty}[xy(100-x-y)^n] = 0$$
$$\sup ...that..(100-x-y) \neq 0$$
$$y(100-x-y) + x(100-x-y) + nxy * 1 = 0$$

$$(x+y)(100-x-y) + nxy = 0 \Rightarrow \left(\frac{x+y}{xy}\right)(100-x-y) = (-1)n..... .....by..putting,.... \frac{x+y}{xy} = \lambda \succ 0$$

$$\lambda(100-x-y) = (-1)n \Rightarrow (100-x-y) = \frac{-n}{\lambda} = (-n)\frac{1}{\lambda}$$

$$but,.....(100-x-y) = \%..Community.."\ share"..of...o..budget,..b = 1.....EXPECTED..payoff...from.."\ b = 1"$$

$$\%..Community...share = (-n)\frac{1}{\lambda}(b).....the..(-n)...denotes, , the..reduction$$

result...which..comes..from.the..Community.."\ reaction"..in..any..BARGAIN ,..(by...its..3rd...role,....i.e

as..an..Agent..of ..the..CITIZEN . – .PRINCIPALr elation,..Arbitrator, , , and..as..the..

Indepented.3rd..barty)..to..the..total..budget."\ b"...of ..the..BARGAIN

then,...the..i^{th}..player, s.best..mixed...strategy(probability = ..a..lottery..over..

a..trinomial...distribution), is..the..best..strategies. for..himself, as..well, as..the..best...STRATEGIES

..for..the..other..players, aswell..as..the..best..strategy..

for..the..Community..(the..common...welfare)

The hlp suggested Equilibrium

Approach: the 3 sequences, converging in: $\phi \le hlp \prec e$
The "win-win-win concept"

STATEMENT (Papakonstantinidis, 2018)
The NEW equilibrium may be formulated by the three (3) world constants, as limits of u_n, v_n, z_n :

$$\phi, e, \pi$$

ϕ, e, π could be considered by $\binom{3}{2}..different.ways$

$$\binom{n}{k} = \binom{n}{n-k},$$
$$\binom{n}{k} = \frac{n!}{k!(n-k)!},$$
$$\binom{n}{k} = \frac{n(n-1)(n-2)\cdots(n-k+1)}{k!}$$

$$\binom{n}{k} = \frac{n!}{k!(n-k)!} = \binom{3}{2} = \frac{3*2*1}{2*1(3-2)!} = \frac{6}{2*1} = 3..differend.ways$$

From this point of view each of the ϕ, e, π could be combined in three different ways

One of the them is: $$\frac{\varphi \times \pi}{e} = \frac{5.083}{2,7182818} \approx 1.888.. = hlp$$

$\phi = \frac{1+\sqrt{5}}{2} = 1,618..$

$\pi = \frac{22}{7} = 3.14159....$

$e = \left(1+\frac{1}{n}\right)^n = 2,7182818..$

φ =1,618033988749894848204.....

π=3,14159 26535 89793 23846 26433 83279 50288 41971 69399 37510……
e= 2, 7182818284590452353602874713527 ……..

In the 2nd phase, ϕ, e, π form a NEW sequence converging in:

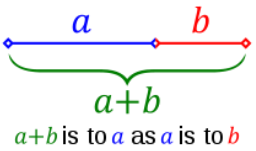
hlp

$W_n, ..so..that.. \lim_{n\to\infty} W_n = hlp = 1{,}888..$ such that[42]:

$$\ell n2 \prec \phi = 1{,}618.. \le hlp = 1{,}888.. \le e = 2{,}7182818.$$

The number φ

$$\frac{a+b}{a} = \frac{a}{b} \stackrel{\text{def}}{=} \varphi, \varphi = \frac{1+\sqrt{5}}{2} = 1.61803\,39887\ldots \varphi = \frac{1-\sqrt{5}}{2} = -0.6180\,339887\ldots$$



$a+b$ is to a as a is to b

$$x_n = \frac{F_n}{F_n + F_{n-1}} = \frac{1}{1+x_{n-1}}$$

$$\lim_{n\to\infty} \frac{f_n}{f_{n+1}} = \frac{1}{\phi}, ..\phi = \frac{f_{n+1}}{f_n}, convergent.to..1{,}618.....$$

$$\phi = \frac{1+\sqrt{5}}{2} = 1{,}6180339888..... .....$$

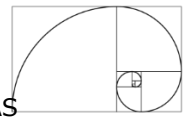
According to Ramzi Suleiman(2017) [...while a harmony point is not an equilibrium in the formal definition referred to above, it constitutes a critically stable state. The first player can increase her utility by keeping a larger portion of the total amount than the one prescribed by the harmony point, but this will result in decreasing the satisfaction level of the second player, who might reject the unfair offer...].[43]. ..Instead of assigning the monetary pay-off, x, as the argument of the utility function, we assign as an argument the variable x/a, where a is the individual's aspired pay-off in the interaction. As such, the proposed utility function is a measure of the player's level of satisfaction, Ramzi Suleiman(2017) showed that the proposed theory yields excellent predictions of the offers observed in ultimatum bargaining and the

[42] We use ln2 and e to "describe" the W_n as a sequence bounded up and down, by ln2 and the e sequeses

[43] Ramzi Suleiman(2017) "On gamesmen and fair men: explaining fairness in non-cooperative bargaining games, rsos, 2017

requests in the sequential common pool resource (CPR) dilemma game. His solution also predicts several unexplained findings,. Strikingly, he found that the predicted opening demand in the alternating offers game is also equal to the Golden Ratio.

From all these notions, the two approaches- Souleiman-Papakonstantinidis[44] converge in the note that Bargaining Equilibrium (the Market Side) is no longer accepted definitely. Maybe "Harmony" (Ramzi Suleiman 2017) could be considered to be the important factor in a bargain Our concept includes both (the Nash Equilibrium and the Suleiman "Harmony", under a NEW word "EQUI-HARMONY"= hlp =1,888….

them to converge on 1,618…= φ …..phi, from FIDIAS 

The number e is a mathematical constant that is the base of the natural logarithm: the unique number whose natural logarithm is equal to one. It is approximately equal to 2.71828 and is the limit of (1 + 1/n)n as n approaches infinity, an expression that arises in the study of compound interest. It can also be calculated as the sum of the infinite series[The number e [45] constant or Euler's number is a mathematical constant. The e constant is real and irrational number

$$e = \lim_{n\to\infty}\left(1+\frac{1}{n}\right)^n = 2.7182818.....$$

$$e = \sum_{n\to\infty}\frac{1}{n!} = 1+\frac{1}{1\times 1}+\frac{1}{1\times 2}+\frac{1}{1\times 2\times 3}+\ldots\ldots\ldots = 2.7182818284\ldots$$

We, now, suppose that, MEASURING "WELFARE"[46], towards its "win-win-win" ideal situation, as the deviation (%) from "equi-harmony[47]" hlp which is given from:

$$\ell n2 \le \phi \le hlp \le e$$

$$1.618.. \approx \varphi \le h_{lp}^{*} \le e = 2.718..$$

$$\ldots\ldots\ldots\ldots\ldots h_{lp}^{*} \approx 1.888...$$

6. Conclusion

[44] The 888 triangular approach: The "win-win-win papakonstantinidis model (2002/8/14) VISBY , SW summer-school

[45] $f(2) = \ell n(2) = \log_e 2 = x = 0{,}6931471805...$ *ensuring*:

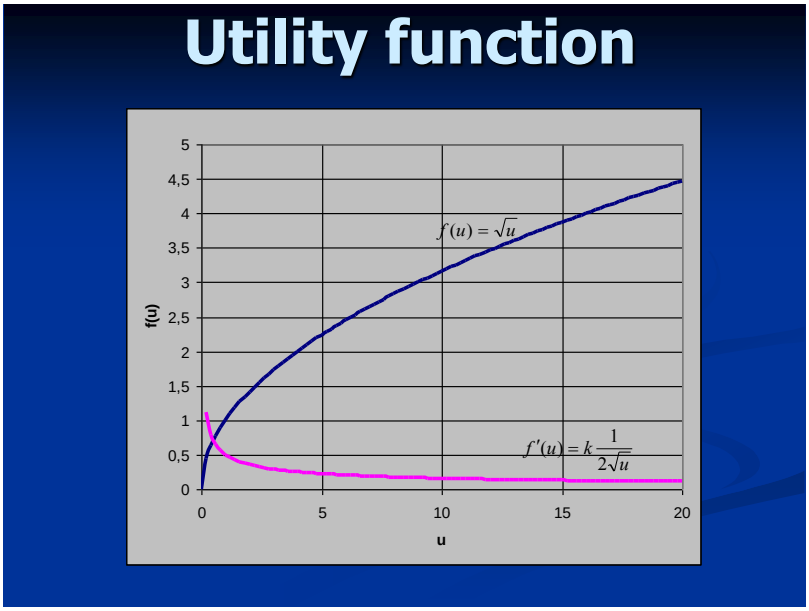
$$e = 2{,}718281828^{0{,}693147180\ldots} = 2{,}00046..... \approx 2{,}000$$

[46] *As a deviation from the* h_{lp}^{*} *equilibrium*

[47] "EQUI-HARMONY" : Equilibrium (the market side) and harmony (the socio-ethical side) of any bargain

1. A previous[48] research showed that :
   A triangular form (a) State, (b) Company, (c) Customers is possible under the above onditions can co-exist with the capital system: each of us has both: rationality and evolution co-exist: Individual Profit is combined with the NEW, in market

2. The product of individual ordinal utilities becomes maximum when the product of marginal utilities tends or is equal to zero, as there is nothing else to be added such as to increase personal or individual satisfaction beyond the existing level



3. Papakonstantinidis Ia (2000)

The product of individual ordinal utilities becomes maximum when the product of marginal utilities tends or is equal to zero, as there is nothing else to be added such as to increase personal or individual satisfaction beyond the existing level.

4. A new equilibrium, the "equi-harmony" h Ip between the 'market equilibrium"(NE) and the "economic harmony" (Souleiman,2018) is suggested.

5. The "win-win-win papakonstantinidis model" is a "tool of consent" useful in socio-economic human (and not only) relations using this tool, but a decent answer can also be given to Arrow's impossibility theorem.

6. The "win-win-win papakonstantinidis model" (2002, August, SW) may, thus, transform individual winning –instant reflection –strategies (the win-win Nash Theory) in a NEW – three poles-equilibrium point, including the COMMUNITY (Environmental Protection, Value Systems, Ethic etc), which is the "absolute cooperation" limit point in the bargain between two.

[48] Leonidas Papakonstantinidis Thomas Kronberger(2019) "Applying the Papakonstantinidis 3-ple-win-model on the social welfare system of the labor markets in Greece and Germany"

Proposal

We could construct a matrix with payoffs; that are the minimum of CLAIMS that each of "bargainers" could accept in a 3-polar bargain between them, in the labor market.

Bargainers in labor market	**Strategies**
State	**in a 3-ple pillars' strategies' (decisions) in the labor maket:**
Company	$S_C = STRATEGY...COST$
Citizen[49]	$S_P = STRATEGY..EXPECTED..PROFIT$

LEGAL (STATE) FRAMEWORK CHANGES

	S_P1	S_P2
S_C1	(25,75)	**(62,38)**
S_C2	(45,55)	(50,50)

CITIZENS DECISIONS

	S_P1	S_P2
S_e1	(50,70)	(50,75)
S_e2	**(50,50)**	(0,0)

COMPANIES DECISIONS

	S_P1	S_P2
S_C1	(30,70)	(25,75)
S_C2	(20,80)	**(55,45)**

Papakonstantinidis LA (2019)

Payoffs coloured: Ideal points

[49] Spais-Papakonstantinidis LA –Papakonstantinidis Stavros An innovative bargaining solution analysis for vertical cooperative promotion management decisions Innovative Marketing, Volume 5, Issue 3, 2009: Analogous Application: In marketing Field, Dant and Schul (1992) stressed the need for a third-party intervention for conflict resolution processes in marketing/management The Papakonstantinidis conceptualization is approached as an alternative pricing and promotion strategy to fixed prices. Based on the empirical evidence that Buhalis (2000) presented us about the phenomena of conflict experienced in the distribution channel between hoteliers and tour operators in the Mediterranean summer/seaside resort context, we have decided to examine the case of the Greek hotel Capsis in order to test the applicability of win-win-win papakonstantinidis bargaining solution for cooperative promotion management decisions. The importance of this try is arisen from the transfer of the pure trust theory to a tourism-marketing context, which can be achieved in order to analyze marketing phenomena of bargaining in tourism marketing alliances characterized by conflict and mistrust (Palmer and Bejou, 1995) and especially in cooperative promotion management decisions of hoteliers and tourism operators. Marketing phenomena related to the understanding of the bargaining problem resolutionand the types of negotiation in which the tourism operator and the hotelier dispute the price, which will be communicated and theexact nature of the transaction that will take place and eventually come to an agreement in terms of a promotion management strategy

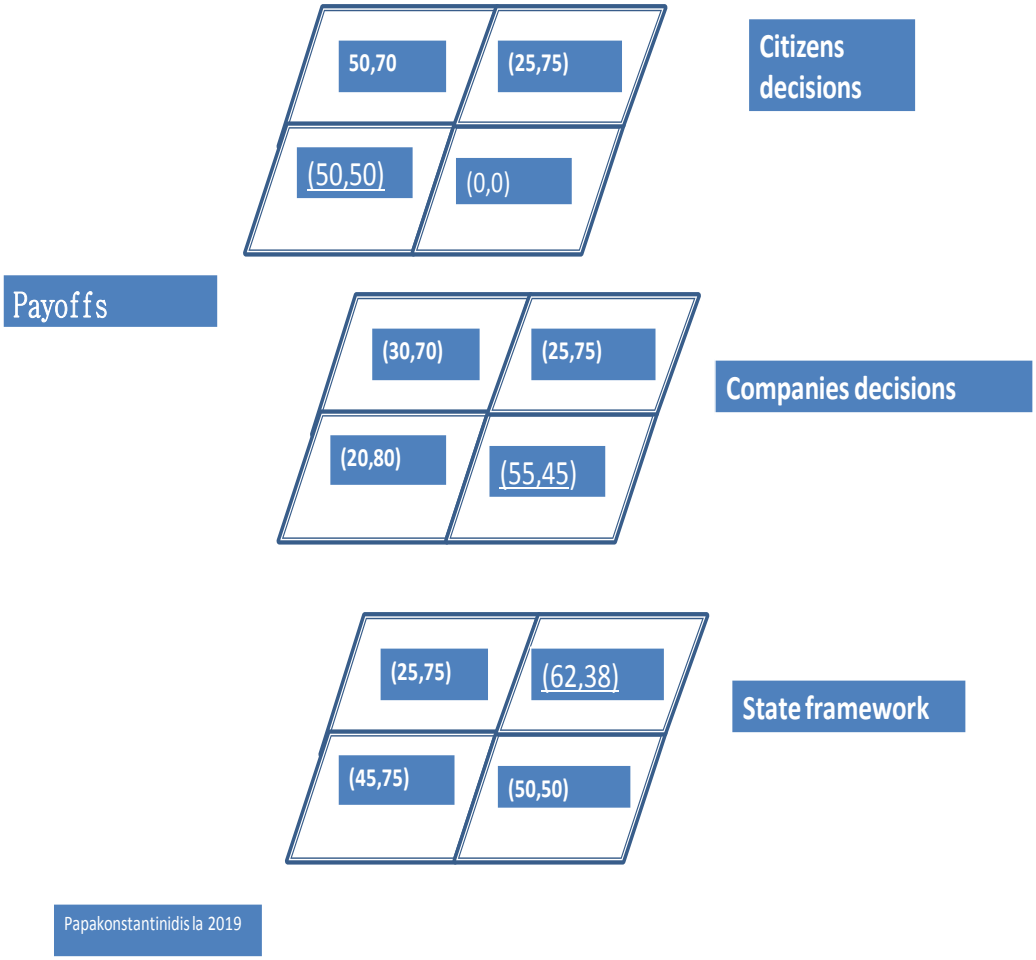


Figure 14

All that form the 3-ple "win-win-win papakonstantinidis" decision matrix, as for each of them, each pair of numbers represents the minimum payoffs which any bargainer in labor market could accept in a possible agreement =100

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