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Facilitating integrative agreements through fostering trust in negotiations between labour and management

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Facilitating Integrative Agreements through Fostering Trust in Negotiations between Labour and Management

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Summary

Negotiations in real life are generally perceived as distributive tasks that produce winners and losers. Nevertheless, in almost all cases there is an opportunity to expand the joint outcome through cooperation; reaching a win-win agreement. The aforementioned characteristic of the negotiation task is similar with what is observed in a social dilemma, situations where individual self-interesting behaviour leads to inferior collective results. Therefore, elements from both phenomena can be used in order to advance the state of art on how to achieve win-win agreements in Labour-Management disputes. An important factor that can be seen as a necessary condition in order to achieve cooperation between parties is the existence of some level of trust.

By adopting a deductive approach, a number of variables which influence negotiations between labour and management were isolated. These variables served as the elements for constructing a proposed theory that through a Decision Support System (DSS) will facilitate integrative agreements by fostering trust between the negotiators. In order to test the validity of the proposed theory, two research questions have been addressed aiming to verify; a) the set of variables used in the proposed theory and b) the facilitation of integrative agreements through fostering trust.

The proposed research questions were tested through: i) a survey that was distributed in three countries, ii) a numerical experimentation with all possible outcomes and iii) by a set of interviews that aimed to provide deeper insight in the problems under examination.

The results from the survey questionnaire and the information elicited by interviewing experts worked as confirmatory evidence in order to verify the validity of the set of variables. The numerical experimentation, combined with statements by the experts that participated in the interviews revealed confirmatory evidence for the ability of the proposed theory to foster trust and, thus, facilitate integrative results.

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1. Introduction

1.1 Motivation

1.1.1 Practical Motivation

In real life, the common perception towards negotiations is the distributive logic upon the negotiating outcomes. This attitude, perceiving the negotiation task as being at war with the other party, prevails among economic agents. Thus, there is a prejudiced attitude that hinders cooperation among parties; cooperation that would create rather than distribute value. This practical problem generates inefficient outcomes in many economic activities that include negotiation tasks. Bazerman (1983) argues that most negotiators have an inherit intuition to interpret the interests of the other party as directly opposing; thus behaving as win-lose situations.

Integrative bargaining can promote agreements that can increase the joint outcome of the two parties and as a consequence increase the outcome of each player. Here, it is essential to address that a distributive trait will always be present in the negotiations, arising in the final division of the gains even if an integrative solution is achieved. It is obvious, that there must be elements from both cooperation and competition in a negotiation task in order to achieve an agreement. As a matter of fact, both elements of cooperation and competition should appear in a negotiation task in order to achieve an integrative agreement.

This is known in the literature as the mixed-motive characteristic of negotiations (Thompson, 2012). Thus, what hinders integrative agreements is dominance of the competitive motives among economic agents.

The solution to this problem, not allowing the distributive forces of non-cooperation to prevail over the cooperative ones, has not been defined through the existing research in the field of negotiation analysis.

The problem that was described is similar with the notion of 'social dilemmas' that is a well-known concept in economics and social sciences. 'Social dilemmas' describe situations

where individual self-interested behaviour leads to inferior collective outcomes compared with what could be achieved if the agents were behaving cooperatively (Kollock, 1998). The intriguing concept of 'Social Dilemmas' has been the subject of a vast amount of studies. Most prominent example is the famous two-player social dilemma known as the 'Prisoner's Dilemma' (PD). The PD is a simple 2x2 game where the dominant strategy of the participants, to behave non-cooperative and according to rationality, leads to a prize considerably less than the one that could be achieved when cooperating. The problem is that each individual has an incentive to follow a non-cooperative strategy when the other player cooperates. The aforementioned strategy offers the best outcome to the non-cooperative player. This situation resembles in a great level the motives that are present in a negotiation task, especially if we interpret the cooperative result of the PD as an integrative agreement.

Player 2 / Player 1	Cooperation	Non-Cooperation
Cooperation	3 3	0 4
Non-Cooperation	4 0	1 1

Table 1: Prisoner's Dilemma Matrix

In the above matrix a classic PD game is presented. For each of the players there are two strategies called Cooperation and Non-Cooperation. Each cell represents a strategy combination and inside it the payoffs of the each player are given. The first number is the payoff of the first player and the second number is the payoff of the second player.

Both players have a dominant strategy not to cooperate. If player 2 makes the choice to cooperate then player 1 has an incentive to choose the strategy of non-cooperation. With this choice player 1 will get 4 instead of 3. If player 2 makes the choice not to cooperate then

player 1 has an incentive to choose the again not to cooperate. With this choice player 1 will get 1 instead of 0. Thus, they end up through the logic of rationality to the cell that depicts a strategy combination of Non-Cooperation by both players. This result gives a joint (and personal) payoff that is less that the joint (and personal) payoff that these players could have achieved if they had managed to Cooperate. This creates a paradox as the rational economic behaviour leads individuals to an inferior outcome in terms of Pareto efficiency.

A thorough examination of the PD game from many scholars resulted in a number of conditions that might ease the solution of the problem (see Literature review section 2.4). One of these conditions is the existence of a level of trust among the players. Similarly, trust is extremely important for achieving integrative solutions in negotiation tasks.

1.1.2 Academic Motivation

Our academic motivation is derived mainly from two important studies relevant with the PD and decision making. According to Leibenstein's (1982) paper in the American Economic Review the PD problem was resolved through conventions that existed between agents. These conventions had the form of a shared identity prevalent between all co-workers. In his work, he found differences in the level of productivity that was achieved by two identical plants that have been located in different countries. He argued that this difference was apparent due to existing conventions that prevailed in the more productive plant. These conventions worked as a facilitator which altered the payoffs of a hypothetical matrix offering extra incentives which eased a solution in a PD game. The findings of this work influenced this endeavour on addressing the importance of conventions and institutions as a method to solve the 'social dilemmas' in industrial relations.

Another important work that influenced the conceptualization of this endeavour was John Broome's (1989) article in Economics of Philosophy. Broome's theoretical work had an important influence on the way the proposed theory presented its outcomes. A deviation from rationality and the classic assumptions of Game Theory was the main finding of Broome (1989) which influenced this work.

It was argued by Broome (1989) that no certain assumption can be made that all participants of in a game will assign the same probability in all possible events in a payoff matrix. So there can be two players that might play the same game but make different predictions about the future outcome.

This finding influenced the way the outcomes of the proposed theory of this study are designed. Different estimation on the appearance of same outcome might be given by two negotiators that are facing the same conditions.

Therefore, this study supports that probabilities can be assigned in the cells of the matrix deviating from the rational prescriptions.

1.2 Objectives

Taking into account all the aforementioned concepts **the aim of this research** can be defined as the follows:

> To propose a theoretical framework that would achieve, with the help of a 'Decision Support System' and by assessing the relations among the most important variables that influence negotiations on Labour-Management disputes, to foster trust among negotiators

In order to achieve the abovementioned aim the **specific objectives** of this research can be summarized as follows:

- To identify a set of input variables that may be influential in a negotiation task relevant to Labour-Management disputes

- To identify an output space that will depict all possible outcomes that can result from a negotiation task among employers and employees resembling a two-person social dilemma

- To define a set of rules (system) that will govern the interaction of the set of variables according to the values these variables may acquire

- To define specific quantified outcomes, according to each scenario of the system, which will represent prediction on whether the final agreement will be a combination of cooperative strategies or not

- To create a Decision Support System that its application will foster trust among negotiators by elucidating a common ground in order to achieve cooperation

- All the above objectives will create the necessary conditions in order to foster trust among negotiators that, in turn, will facilitate the achievement of integrative outcomes in negotiation task between labour and management.

1.2.1 The Road to Achieve the Objectives

Following a deductive approach, a set of variables, which have been characterized as important on Labour-Management disputes, was isolated from the relevant literature. Moreover, a set of rules has been created that governs the relationship among these variables. Taking into account the values of the variables of the theory and the set of rules that govern their relationship quantified outcomes have been assigned in each scenario. The quantified outcomes were predictions (P1, P2, P3, and P4) on a payoff matrix that resamples a PD game. According to these estimations, predictions about which strategies will be adopted from the negotiators are made.

Moreover, this leads to an assessment of the nature of the agreement as cells indicate specific kinds of agreement (C-C: Integrative and NC-NC: Distributive, see Table 2: Output Matrix of the Proposed Theory
).

Management Labor	C	NC
C	P1	P2
NC	P3	P4

Table 2: Output Matrix of the Proposed Theory

The application of the proposed theory through the employment of a Decision Support System will foster trust that will be built on a 'anchoring effect', only when the prevailing values of the variables favour such an 'positive' anchoring effect to emerge. The positive anchoring will have as an aim to influence both negotiators in order to make them focus on possibility that an integrative agreement might be possible. Providing them the hint that this is possible, both negotiators may work harder in order to achieve it.

As consequence, two research questions derived that upon which the proposed theory and its results were tested for their validity:

RQ1: Which are the most important variables that influence negotiators in negotiation tasks between Labour and Management?

RQ2: Does the proposed theory via the use of a 'Decision Support System' foster trust between negotiators in Labour-Management disputes, facilitating integrative agreements?

In order to test these two research questions a number of methods have been employed. The methods used were the following; a survey questionnaire, a 'numerical experimentation' of all the possible combinations generated from the proposed theory and a set of interviews with experts on employment affairs and negotiations.

The method of an electronic Survey questionnaire was adopted in order to confirm the validity of the variables that have been incorporated in the proposed theory (RQ1). The questionnaire was distributed in a pool of academics that were based in three European countries (the UK, Greece, and Sweden) and had expertise in relevant subjects. Moreover, confirmatory questions to check the validity of the concepts that have been used in order to resemble the negotiations process or for the construction of the rules have been incorporated in the system.

The 'Numerical Experimentation' was employed in order to check the validity of the proposed theory to foster trust. All possible combinations that can be generated by a user were calculated. As a matter of fact, the results have been signalling a positive anchoring on the side of the cell that depicts the integrative agreement. The numerical analysis revealed that through a slightly overshoot of the estimation probability that represents the integrative agreement, the common ground, necessary for a level of trust to emerge, can be created especially when the proposed theory assesses a favourable setting according to the input variables assigned by the expert-user.

Finally, a set of interviews was the last method that was employed in this research in order to elicit deeper insight on the various aspects of negotiation. The interviews were conducted with high-ranked experts who had participated in key governmental positions relevant to employment affairs. These interviews, offered some broader findings in order to check the validity of the proposed theory and tackle the research questions. The current general trends that prevail in wage-bargaining processes have been addressed by the experts, giving valuable insights about wider issues that might influence a negotiation task. In addition, questions for suggesting other variables that could be incorporated into the proposed theory were asked. As a result, another way for validating the importance of the variables that were part of the system took place. In addition, experts were asked to verify if the institutional frameworks that have been used as a building block in the proposed theory were of great

importance. Moreover, confirmation about the fact that the PD could resemble the negotiation process accurately was sought.

In the following section a detailed description of the outline of each chapter is given.

1.3 Preview of the Following Chapters

Chapter 2 presents a critical review of the literature in which this research is positioned. It will be demonstrated that this research is borrowing elements from different interrelated fields that are having as an aim to tackle negotiation tasks. As a result, the literature review will commence with a demonstration of the relevant streams to our study and will carry on with a review of the general concepts that will be used in the proposed theory of chapter 4. By presenting the overview of the relevant literature, the key points of each field will be addressed. Moreover, any deficiencies stemming from these fields and could hinder a similar research quest like the one addressed in this thesis will be underlined. At the end of this chapter the research questions that this thesis will attempt to tackle are going to be presented.

Chapter 3 presents the philosophical positioning and methodological approach that is adopted in this research. By introducing the paradigm that is used in this research, the methodological approach in order to tackle the research questions is stated. Thereafter, the criteria to identify who is a real expert in order to validate theoretical issues are addressed. Finally, the three methods, Survey, Numerical Experimentation, and Interviews, which have been employed in order to tackle the research questions, are discussed.

Chapter 4 introduces the proposed theory that was constructed from elements collected from the literature in alignment with the principals of the deductive approach as addressed in the previous chapter. After describing the main elements of the proposed theory and the conceptual framework employed, the basic relations that govern the proposed theory are described. After depicting these relations, final quantified outcomes that the aforementioned sets of rules generated in each scenario, are provided adding the final point for the coherence of the proposed theory.

Chapter 5 is concerned with presenting the process with which the Decision Support System was constructed. Initially an overview is presented of how the input and the variable rules are conceptualized in the context of the system. Then, the interface of the actual system is presented with the help of visual elements (pictures). Finally, the construction of one simple rule is presented in order to demonstrate the process of editing the system.

Chapter 6 initially presents some general aspects of the survey that was conducted in three countries (the UK, Greece, and Sweden) in order to validate the input variables of the system. After stressing the confirmatory importance of this method, a thorough description of the sorting procedure, in order to isolate the experts that would participate in these surveys, is made.

Chapter 7 contains the numerical experimentation that can be generated from the developed system. In the beginning of the chapter histograms that contain the distributions of all results that are encountered for all four estimations (cells) are demonstrated. Then, a number of descriptive statistics are presented providing an overall picture of the generated results. Moreover, specific match-ups between cells are addressed. This chapter is concluded by analysing specific scenarios generated by the system and offering interesting insights into its operation.

Chapter 8 reviews the information that was elicited by a set of interviews conducted with the help of high-ranked experts. Initially the positive attributes of this method are addressed. Then the most important facts relevant to the aspects of this research are presented. Firstly, the most important general comments that have been addressed by the experts are discussed in order to present the valuable insight on negotiations elicited by this method. In what follows, evidence that confirms the validity of proposed theory is provided. Moreover, important information, connected with the verification of the ability of the tool to foster trust, is cited. In turn, all the answers, given by experts to questions related to the general ideas employed in the research, are presented; providing confirmatory evidence to the building blocks of the proposed theory.

Chapter 9 includes the discussion over the most important aspects of this research. The evidence that was collected throughout this research and can be considered as a stable pillar

to support the theoretical proposition, which have been addressed through the research questions, is presented in the chapter.

Finally, chapter 10 addresses the conclusions that derived from this thesis, the relevant limitations and a number of suggestions which should be the next step of this research quest.

2. Literature Review

2.1 Introduction

Negotiations as a task are of significant importance in almost all organizational settings, even in aspects of everyday life. People often encounter challenging situation were negotiating skills are necessary in order to achieve their goals as the negotiation task is a mixed-motive process that has both elements of cooperation and competition (Thompson, 2012). Despite, the importance of the negotiation task as a goal achieving instrument, it was not until the 1980s that the academic community showed some interest on negotiations as an independent field. Until then, negotiations as an academic subject were incorporated into relevant fields such as Decision Sciences, Game Theory, and Behavioural Psychology. Of course, it is essential to address that, there are some issues that might hinder researchers to conduct empirical research on this field.

The prominent problems that emerge from the fact that negotiations as encountered in real life cannot be amend to field study (Greenhalgh & Neslin, 1983), are mainly three:

1. It is a private procedure that included issues that are undeclared and personal with subjective meaning for at least one of the parties; classic observational studies are not the appropriate tool to handle it.

2. Negotiations incorporate several issues that are interrelated; thus, it is extremely difficult for the researcher to unravel the relative importance of each issue.

3. Relative power is an important component of negations, and situational power attributed to each party is not easy to measure; as it is mixed with negotiation skills and preferences.

(Greenhalgh & Neslin, 1983)

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However, after the publication of the seminal work of Raffia in 1984 with the title 'The Art and Science of Negotiation' the subject started to get some degree of independence. Many applications into different aspects of life were incorporated into studies that could be defined under the greater term 'Negotiation Analysis'. Nevertheless, many facets of the negotiation task are still unexplored, and a lot of effort needs to be made in order to shed light on these areas. Little research exists on how to tackle negotiation tasks that represent 'social dilemmas'. As a result, the purpose of the following literature review is to address the main concepts of negotiations and review the main studies that are examining 'social dilemmas' connected with negotiation problems.

The literature review will examine the findings relevant to this thesis, which are incorporated in Negotiation Analysis, Game Theory and New Institutionalism.

More precisely, the main findings of literature relevant to 'Integrative Bargaining' and 'Distributive Bargaining' will be examined.

In the next section, elements of Game Theory connected with bargaining and 'Social Dilemmas' will be reviewed in order to present the solutions of the problem as found in a relevant but distinct field.

As the notion of 'Trust' is a key concept of this thesis, it will constitute the subject of the next section. 'Trust' is an important notion addressed by all the aforementioned fields as it can have a crucial role for facilitating a solution to social dilemmas.

The final section incorporates a review of the literature relevant to institutions. As Institutions have gained an important role in contemporary economics, as they often govern the economic transactions, the last section of the literature analyses different approaches towards institutions from different fields of social sciences.

Figure 1: The Literature Review Tree

2.2 Distributive Bargaining

Distributive bargaining is a method of negotiating as described by Walton and McKersie (1965), which is related with claiming value or to stated it differently "dividing the pie". Distributive bargaining has its own share on the negotiation literature as any negotiation process can either be seen as a pure distributive task or that inevitably it will contain elements of distributive bargaining (Lax & Sebenius, 1986). As it was already mentioned negotiations is a mixed-motive process that contains both aspect of creating and claiming value (Thompson, 2012).

As long as there is a positive bargaining zone, the reservation points of the seller and the buyer have an overlapping space; a joint beneficial agreement can become a reality (Walton & McKersie, 1965; Raiffa, 1982; Lax and & Sebenius, 1986). A bargaining zone might be positive or negative (Lax & Sebenius, 1986; Thompson, 2012). An overlapping of the zones offers the opportunity to gain through the agreement. A dead-end in the in the negotiation process leaves the agents with their best alternative that is by definition a second best otherwise they would not be negotiating for a mutual agreement in the positive bargaining zone (Thompson, 2012). However, a positive zone is not always there in order to offer an

opportunity for advancing their position further from the Best Alternative to a Negotiated Agreement (BATNA) that they could get without any agreement (Fisher & Ury, 1981).

A negative bargaining zone does not provide an opportunity to gain something from the negotiation, therefore, it is wiser, in terms of time-related cost, to abandon the negotiation process as soon as possible and rely on the BATNA (Bazerman & Neale, 1993; Thompson, 2012).

Therefore if the negotiators realize that they have a positive bargaining zone between their reservation points, they should understand that the best possible outcome is to reach an agreement; then a round of offers and counteroffers has to take place in order to reach the final agreement which is known as the 'negotiation dance' (Raiffa, 1982). The agreement that derives from this process will be a point somewhere between the reservation points of the two negotiators, as long as they have a positive bargaining zone (Lax & Sebenius, 1986).

In order to refer to the size of the positive bargaining zone often scholars use the terminology "bargaining surplus" or the famous term "pie" (Bazerman & Neale, 1993; Thompson, 2012). It is the measure of the possible joint value that the negotiators have available to divide, therefore, it represents the excess value over the non-agreement alternative. Each negotiator has as a target to get as near as possible to the reservation point of the counterpart (Bazerman & Neale, 1993). So the share of each negotiator, which can be defined as the difference between the agreement and the negotiator's reservation point, is named negotiator's surplus (Thompson, 2012). It is obvious that the negotiators want to claim as much as possible surplus they can; nevertheless they have to show some signs of minimum cooperation in order to get the final agreement (Bazerman & Neale, 1993; Thompson, 2012). Therefore, it is essential for them to weigh all the benefits from the value they claim and all potential losses from a possible impasse when they become too assertive (Samuelson, 1980)

Negotiators set as a target to claim the largest share out of the bargaining surplus. In order to do so agents have to extract information about the counterpart's reservation points, or the actual reservation point, that we have already defined as quantified BATNA (Thompson, 2012). Even though this information might be extracted, the reliability of the truthfulness of the facts is still under debate. Often negotiators in the process of the bargaining task threat and bluff something that it is called "cheap talk" and usually have a considerable influence in

the outcome (Croson, et al., 2003; Bazerman et al., 1998; Farrel & Gibbons, 1989). Nevertheless, ethical and practical consideration call for, at least, factual credibility as "cheap talk" might have the reverse results from its original purpose. For example, giving wrong signals about reservation point may jeopardize the whole negotiation process and lead to an impasse as the mislead counterpart may think that has a better outcome through the no-agreement alternative (Farrell & Gibbons, 1989). Wrong signalling is not a recommended strategy for prudent negotiations especially if negotiators aim for a prolonged relationship. Therefore, it is valid to argue that bluffing and threats can either lead to lose potential deals that would exceed the gain from the no-agreement alternative or aggravate the tendency that some negotiators have to agree on inferior agreements than their BATNA (Kennan &Wilson, 1993; Roth, 1993; Cohen et al., 2010).

The credibility of the proposals and the integrity of his personality is invaluable assets that a negotiator has in his or her possession (Deutsch, 1961). The term that is widely used in negotiation analysis is 'face', which is 'the value a person places on his or her public image, reputation, and status vis-à-vis other people in the negotiation' (Thompson, 2012, p.72). Preserving the integrity of this "face" is one of the most important aspects in negotiation analysis, therefore, in the presence of third parties negotiators often might adopt an ambitious strategy that might result in an inferior outcome (Argyris, 1999). When people are negotiating it is for the benefit of the negotiation result not to push things too far and have counterparts in the edge of "losing face". As Tynan (2005) argues this 'face threat sensitivity' of negotiators has a pivotal role in order to understand the effectiveness of communication between them. Problems of trust among the agents arise. Further studies revealed that people with high levels of 'face threat sensitivity' had been experiencing frequent problems of misbehaviour that usually impeded them from achieving integrative deals (White et al., 2004).

In order to claim a larger slice from the pie, many pathways have been proposed through the literature. Nevertheless, these strategies are not a panacea as it depends from the opponent's stands and the context in which the negotiation takes place.

Negotiators should work on improving their BATNA as it represents a negotiators reservation point; thus a point that defines the size of the bargaining zone (Thompson & Leonardelli, 2004; Bazerman & Neale, 1993; Thompson, 2012). Even though the main task of a negotiator

is to improve his or her alternative to the negotiation agreement, it has to remain concealed during the process of bargaining as it would be catastrophic to reveal it (Thompson, 2012; Bazerman & Neale, 1993). However, some scholars suggest that at the very end of the negotiations or if your BATNA is extremely advantageous for you then a negotiator can proceed and announce his or her BATNA (Thompson, 2012). Revealing your BATNA does not help fostering an expansion of the pie but a division of it and such a kind of strategy is a disadvantage for the negotiator (Thompson, 2012). To misrepresent your BATNA, as discussed above, creates wrong perception about the bargaining zone and therefore the dead end in the negotiations is more possible (Farrell & Gibbons, 1989). Conversely, it for the benefit of a negotiator to gather information in order to estimate or even reveal the BATNA of the other party (Thompson & Leonardelli, 2004). As we have already addressed there is not only a straightforward outcome if following this prudent negotiation strategies. Pease and Gilin (2000) showed that when one of the parties reveals its BATNA in an early stage, the other negotiator often becomes less demanding, shares more useful information and achieves inferior outcomes in terms of profit than in a scenario where the opponent conceals its BATNA.

The reservation and aspiration points of the negotiators have a vital role for determining the final outcome of the negotiation. These points determine most of the times the first offer that consequently serves as an anchor point in the process (Bazerman & Neale, 1983, Northcraft & Neale, 1987; Kray et al., 2001; Galinsky & Mussweiler, 2001). As a consequence, of the aforementioned event negotiators have to inflate their aspirations points as it is a factor that exerts some influence on the final outcome. However, it is worth mentioning that the final outcome as addressed by Raiffa (1982) is somewhere in the middle between the two initial offers. As long as there is some credibility in the previous finding it is not wise for a negotiator to have aspiration points that do not correspond to the reality. The first offer creates a perception about the aspirations of the party that is making the proposal, therefore an opening offer that is far away from reality might jeopardize the resolution of a conflict (Kray et al., (2001). This may result to the 'chilling effect' that leads to an escalation of the conflict with fewer concessions thus damaging the relationship (Pruitt. 1981). As Samuelson (1980) argues it is important for the agents to follow a primary principle when negotiating, to weigh the potential benefits from an excessive claim and the losses from possible impasse as a result from this behaviour. Negotiators have to take into account this principle especially for the first offers.

It is important to address that the negotiators have not to be pessimistic towards their expectations about their outcome of the negotiation process. As there are studies that show aspirations points influence final claims of the negotiators more than their reservation points (Thompson, 1995). As a consequence negotiators, who set high aspiration points, in a realistic frame, often get more bargaining surplus. Empirical studies showed that the negotiator that has the greater aspiration point in the dyad is the one that gets the bigger slice of the pie (Chen et al., 2003). More precisely the negotiators set their demands according to their aspiration points independently if the reservation point is favourable or not. Therefore, it might be profitable to set optimistic aspirational points. When defining optimistic, we shall suggest something that is slightly lower or greater than the reservation point of the opponent (Thompson, 2012). People that set higher levels of aspirations and more challenging tasks is more likely to achieve greater personal gains than others that set lower or do not have aspiration points at all (Huber & Neale, 1986, 1987; Northcraft et al., 1994; Thompson, 1995). In addition, higher levels of aspirations in conjunction with some minimal efforts for cooperation result to more integrative agreements (Huber & Neale, 1986).

Studies revealed that negotiators that enter the table for bargaining having as a main goal to satisfy their aspiration point achieve better final outcomes (Galinsky et al., 2002; Galinsky & Mussweiler, 2001). As was argued by Galinksy and Mussweiler (2001) negotiators that target the higher end of bargaining surplus achieve better results compared with those who aim for an outcome that could be classified as the minimum they could get.

This is related with the optimistic stance that we analysed earlier. Agents that have a high level of hope that they will achieve a great outcome near their aspiration point usually claim a greater slice than agents that are afraid negative outcomes and therefore they manage to keep their economic levels constant (Galinksy et al. 2005). Of course, a relation can be seen with the notions of framing the negotiations (Neale & Bazerman, 1985a); and cognitive behavioural theories such as prospect theory (Kahneman & Tversky 1979, Tversky & Kahneman 1981).

It is worth mentioning a paradox that emerges from the focus points that negotiators pursue during a negotiation process. Even though negotiators who target on their aspiration points often achieve better outcomes in terms of profits, they do not feel as satisfied as the

negotiators who achieve lower outcomes but have focused on their reservation points (Thompson, 1995). This awkward results, that cannot be justified in terms of personal outcome is known as the 'paradox of goal-setting' (Freshman & Guthrie, 2009). Focusing on the reservation point might produce inferior outcomes nevertheless it is connected with greater levels of happiness. As Galinksy et al. (2002) argue negotiators that compare the final results with their reservation point, are more satisfied about their performance and feel better with their choices.

It is widely perceived that making the first offer in the negotiation table is a poor strategy. Nevertheless, studies about anchoring showed that the first offer has a great magnitude to the final outcome (Galinsky et al. 2002) thus, it cannot be seen as a bad strategy overall. Because of this reason, negotiators have to be ready and not be influenced by the anchoring effect that a first offer might produce. It is obvious that the anchoring effect might distort the final result (Lovallo & Kahneman, 2003). Nonetheless, on the one hand agents are most of the times worried that their opening offer might reduce their bargaining power as they might relinquish too much and too early. On the other hand they might give the impression that they are too aggressive and as a result offend the counterpart (Thompson, 2012). This has to be taken into account in addition with the false perception people have that often they push too hard for their positions even if the other party does not realize such an excessive assertion (Ames, 2008). Moreover, negotiators that want to make the first offer should have work hard in order to prepare this offer taking into account the possible reservation points that their opponent might have. A good preparation before each negotiation task is extremely important in order to avoid the inconvenient scenario to have the first offer accepted, a scenario known as the "Winner's curse" (Bazerman & Neale, 1993). Accepting the first offer without any bargaining often creates counterfactual thoughts to the negotiators, about how they could handle the situation differently, and this leads them to be less happy with their performance (Galinksy et al., 2002).

The best response strategy to an outrageous first offer that has, as already stated, an intention to work as an anchor is to immediately re-anchor by making a counteroffer (Thompson & Leonardelli, 2004). An immediate counteroffer serves as a countervailing anchoring power to the initial offer of the other party and in addition it signals the motive of the negotiator to negotiation (Thompson, 2012).

It is important for a negotiator, except from the initial offer, to have previously worked on his or her strategy on concessions. As it is argued by Thomson (2012, p.67) 'Concessions are the reductions that a negotiator makes during the course of a negotiation.' Seigal and Fouraker (1960) argued that people who make fewer and smaller concessions usually achieve better outcomes compared to those that have a pattern that consists of greater and more frequent concessions. The former establishes the conditions for the effect of reciprocity to take place; a universal norm that leads to back-and-forth exchange. In the same line is the pattern proposed by Osgood (1962) and is called 'gradual reduction of the tension'. In this process, the magnitude of the offers is another important issue. Negotiators who transform from hard to soft characters during a negotiation process often achieve greater results than negotiator that follow the opposite strategy (Hilty & Carnevale, 1993). The success of the aforementioned strategy lays on the favourable transformation from hard into soft, something very attractive in the eyes of the other side.

Timing is another important factor that is related with the notion of concession. When addressing timing usually scholars divide concessions to *immediate, gradual or delayed* (Kwon & Weingart, 2004). As we have already mentioned instant acceptance of an offer usually causes inconvenience to the party that saw its offer being accepted so fast; creating doubts over the success of the agreement (Kwon & Weingart, 2004). O'Connor and Adams (1999) interpret this dissatisfaction as a result of the deviation from the traditional negotiation path that agents have in their mind. Gradual concessions generate greater satisfaction to a negotiator (Kwon & Weingart, 2004). This is due to the fact that gradual concessions follow the traditional path of negotiation (O'Connor & Adams, 1999) satisfying the need of a buyer for haggling over the value with the seller (Komorita & Esser, 1975). Delayed concessions are the source of controversial emotions of satisfaction. Negotiators are happy about the value they achieved by a late concession; however the buyer usually is not willing to cooperate again in the future with the seller (Kwon & Weingart, 2004).

It is very important to each offer that is proposed in the bargaining table to be accompanied by reasoning that will support the offer (Thompson, 2012). The way an offer is presented has a significant role in its consequent fate in the negotiation process. Rules of equity, equality and fairness have to be mobilized in order to serve offers in the negotiation table in a more attractive and legitimate way (Loewenstein et al., 1989). Demands that are accompanied with a justification whether it is important or minor have a better rate of success

Fairness principles can be very useful to in facilitating mutually acceptable outcomes; however manipulated application of these principles might promote outcomes that are more favourable to one side.

Different rules of fairness can be applied to the division of a surplus and frequently these rules used as a mean from negotiators to fulfil their interests (Deutsch, 1985; Lowenstein et al., 1989). Because fairness is a notion open to different interpretations, when it is deployed as a strategy from the counterpart the negotiator must be ready to propose back a different offer that will serve his or her interests and will be in accordance with fairness (Thompson, 2012). According to Deutsch (1985) there are three widely used methods for fairly slicing the pie- equality rule (equal shares for all), equity rule (proportionality according to contributions) and Needs-based rules (higher needs bigger slice). These rules are applied in accordance with what each situation prescribes (Schwinger, 1980). The vast amount of literature that is dealing with ultimatum games showed that people are not concerned only about their economic output (Sebenius, 2001). It is crucial to understand that in real life, there are many other things besides economic benefits that people value.

The most important criteria that often indicate which rules of fairness should apply in order to divide the pie are the ultimate interests and the kind of relationship between negotiators. The goals of the decision makers are important in order to legitimize which rule of fair division is applied (Mikula, 1980). If the ultimate goal is solidarity between the member the best method is equality (Berkovitz, 1972). If the main aim is to create a motive to advance performance equity is the most appropriate rule (Deutsch, 1953).

The kind of relationships that are highly respected such as friendship or neighbouring, the norm of fairness that prevails is the equality norm (Austin, 1980). On the contrary, in business relations the exchange character of the relationship calls each negotiator to maximize their own interest (Loewenstein et al., 1989). Nevertheless, often people are not only concerned about their payoffs but they take in account the payoffs of the counterpart too. In such an event, it is argued that people have a "social utility" too that determines their level of utility (Loewestein et al., 1989). It is reported that people may decline unequal shares for inferior joint agreement that provides equal shares to the negotiators (McClelland & Rohrbaugh, 1978; Messick, 1983b).

However, there are findings which reveal that people in relationships apply different rules of fairness according to the kind of situation they confront (Steil & Makowski, 1989). Equality is always connected with more favourable feelings about the whole context and the counterpart (Thompson, 2012).

The egocentric bias has an important effect on the selection of the method of fairness (Thompson, 2012). Agents have the tendency to value greater their effort than they value the effort of another person who accomplishes the same goal (Messick & Sentis, 1979). Moreover, on the one hand people usually call for the application of equality rules when they have contributed the less on the accomplishment of a task and on the other hand they demand equity when their effort was great (Van Avermaet, 1974). Therefore it is valid to argue that negotiators try to favour their side with applying the most favourable rule of fairness. The difficulty that arises with the existence of the egocentric bias is that it hinders the resolution of the conflict (Thompson, 2012). There are many examples from the corporate world to international relations that show when egocentric bias enters the negotiation is very difficult to derive to a resolution. It is worth mentioning that the most mainstream approaches to limit the effect of a bias, such as sharing information or understanding the interests of the other party are rendered incapable as the perception of fairness are rooted deep into the parties consciously or subconsciously (Babcock et al. 1995). Human cognitive processes enhance the egocentric bias (Thompson, 2012). Selective encoding and memory helps agents to have cues of retrieval that favour them towards the others (Thompson, 2012). However, this is not the only source of egocentricim as agents egocentrism can emerge even after the processing of all facts under neutral conditions.

The differential retrieval is another source of egocentric biases. People that are assigned a responsibility often recall events that help them to build a correlation between their responsibility and their efforts (Kahneman & Tversky, 1982a; 1982b; Ross & Sicoly 1979). Nevertheless, when there is external guidance to recall the help of their counterparts in a joint task the levels of the egocentric bias decline (Caruso et al., 2006). Nevertheless, the aforementioned method can lead to unpleasant results promoting egocentric behaviour (Epley et al., 2006). Another source of egocentrism might be the informational disparity that agents confront (Thompson & Loewenstein, 1991; Camerer & Loewenstein, 1993). However, empirical evidence suggest that when information is a common good for both parties but their

goals are different self-interesting behaviours emerge giving a rise in the egocentric bias (Thompson & Loewenstein, 1992) rendering information not a pure source of this bias (Camerer, & Loewenstein, 1993). However, information even if it is common for both parties might be different interpreted and lead to undesirable self-interest behaviour from the parties.

Sometimes it is difficult to establish equality due to its multi-dimensional character (Harrys & Joyce, 1980). This is further backed up with studies that showed that equality is more frequently used in situations where the pie could easily be divided into equal pieces, than in situations where deploying the equal distribution would add another challenge to the bargaining table (Allison & Messick, 1990).

It is worth mentioning here are the different stands people take, in terms of fairness, when dealing with gains and losses. People more often use rules of blind justice in order to allocate benefits, however in order to split burdens they mobilize proportionality (equity) (Sondak et al., 1995). In the same lines, Ohtsubo and Kameda (1998) experiment to divide an amount that once represented a loss and wants a benefit showed that subjects were more demanding when negotiating the division of a loss and the equal split deal was accomplished fewer times than in the division of profits.

Thompson (2012) argues that even the tactic of 'equal split' that is often proposed by negotiators, that seems fair, actually it is not. Negotiators have to take into account the path dependence of lead to the final value points that the equal split will apply on, because the magnitude of the concession from the initial offers might not be equal at all. In addition, even if the magnitude was the same it does not guarantee fairness.

Last but not least, we should always bear in mind the arbitrary character of fairness. As we already mentioned, agents that have to take a decision for dividing a surplus may support different kind of fairness methods. Subjects are prone to support any unequal but advantageous shares that have been allocated to them although they would not chose this allocation if they were the allocators (Diekman et al., 1997)

These have been the main principles that are encountered in the literature and should be taken into account when studying a distributive bargaining process.

2.3 Integrative Bargaining

According to Walton and McKersie (1965) another important type of bargaining that has as its main characteristic value-creation, is called Integrative bargaining. This mutually beneficial agreement improves the outcomes of both players and is also known as win-win agreement or variable sum game (Sebenius, 1992a).

In a variable sum game there are not just winners and losers like the zero sum game but both agents can have a positive share. Taking this into account theorists developed the well-established argument why nations should trade.

According to Thompson, Valley and Kramer (1995) warn that perceptions of equality or satisfaction do not necessary mean that the outcome is a win-win situation. A truly integrative agreement does not leave money on the table (Bazerman & Neale, 1993). As a matter of fact, all available resources must be used in order to achieve total utilization (Thompson, 2012).

The notion of joint gains is well explained by an example given by Lax and Sebenius (1986). As vividly described by Lax and Sebenius (1986) negotiations have a twofold aim, on the one hand the settle of an agreement on the positive bargaining zone and on the other to advance this obvious agreement into something that will add value for both counterparts.

Taking into account the aforementioned argument, we can allege that the outcome of a negotiation can be seen as a variable-sum game that there are no just winners and losers (Walton & McKersie, 1965). The classic example to describe integrative bargaining is the one by Follett (1940) about the two sisters that wish to divide an orange. More precisely, instead of rushing and just splitting the orange into two pieces the two sisters should initiate a dialogue and understand that the one needs only the juice and the other is interested only for the peel to make a cake (Thompson, 1990). It is obvious that mobilizing a different 50-50 split will yield a total utilization of the resources (orange).

Another example for integrative agreements, that may be more relevant to a complicated negotiation process, is provided by Pruitt (1986) referring to a couple fighting about the

destination of their vacation. Mixing different preferences and tastes might generate an integrative solution of the problem leaving both satisfied.

According to Thompson (2012), integrative bargaining can be divided into three categories that represent different levels of integration into an agreement. In his (Thompson, 2012) point of view, the first stage agreements represent a mutual agreement within the bargaining zone that is better than the no agreement alternative, the second stage constitutes an agreement that is superior to any straightforward outcome that might have already been agreed, and in the final stage there are all the settlements that represent Pareto optimal results.

As long as the negotiation task is defined as a mixed-motive process many authors come to the conclusion that most of the negotiations are integrative in nature (Pruitt & Rubin, 1986; Raiffa, 1982; Walton & McKesie, 1965, Lax & Sebenius, 1986; Thompson 2012).

Existence of differences in the priorities and the valuation of different aspects of the negotiations there is always some space to produce integrative outcomes (Raffia, 1982). The existence of a relatively large number of situations that an integrative agreement was the outcome of a negotiation process is an extra argument to support that integration can be the norm (Lax & Sebenius, 1986). Cooperation by both parties is necessary in order achieve such a kind of outcome (Walton & McKersie, 1965; Fisher & Ury 1981; Raiffa, 1982; Pruitt & Rubin, 1986; Thompson, 2012; Neale & Bazerman, 1992)

Negotiators have to investigate about opportunities to increase of the joint outcome by following a cooperative strategy but at the same time to compete with each other in order to achieve a greater slice in the pie (Lax & Sebenius, 1986).

Integrative Bargaining is usually is hindered by biases that lead negotiators to focus on the minimum division of the value that is at stake (Winkeren, 1974; Adams, 1979). From an early age, individuals get used to a situation where distributive bargaining prevails, as a result, they often assign a 'competitive outlook' in the world they live (Bazerman & Neale, 1992). In turn, they interpret most situations under distributive terms. Nevertheless, their distributive skills are not flawless, as often negotiators settle for a resolution that is even worse that their best alternative to the negotiated agreement (Raiffa, 1982; Pruit & Rubin, 1986)

The problem of "mythical fixed pies", which prescribes that people see only in distributional terms a negotiation process, is one he most prominent biases, which impedes greater joint outcomes (Thompson, 2012). People that participate in negotiations, and they are consistent with this error, judging their opponent as an enemy, most of the times agree on inferior agreements (Thompson & Hastie 1990). Therefore, as discussed below it is crucial to have a true judgement about the intentions of your counterpart. Judgement accuracy about that is very important for finding win-win resolutions (Thompson, 1990a, 1990b).

O'connor and Adams (1999), on their research on novice, negotiators addressed the most common mistakes observed in their behaviour, including a highly distributive perception, biased to incompatibility of interests, prone to non-agreements, and negotiating issues one by one. All the previous mistakes impede the dyads to accomplish a win-win resolution of the conflict.

Even when negotiators are not novices they might encounter the same problems. There are studies that argue that it is very difficult to overcome the 'fixed-pie' bias and that experience is not enough (Thompson, 1990a, 1990b, 1991). In other studies, that provided feedback to the subjects about their counterparts could not accomplish a complete elimination of the 'fixed-pie' bias (Thompson & DeHarpport, 1994). Prejudice over the behaviour of the counterpart which leads to inferior results is often apparent (Bazerman & Carrol, 1987)

It is obvious that there is a perception of 'false conflict' as people believe that their interests are definitely adverse with that of their counterparts (Walton & McKersie, 1965; Balke, Hammond & Meyer, 1973, Bazerman & Neale 1983; Thompson & Hastie 1990).

Empirical evidence showed that people often do not realize that their interests may be compatible, even when objectively they are, and thus, they fall prey to the 'lose-lose' effect-not to reap gains from compatibility of interests (Thompson & Hrebec, 1996). This false perception about their counterparts usually leads to inferior outcomes (Bazerman & Carroll, 1987; Thompson 1990a).

There are some studies that argue that during a negotiation process there is often no great exchange of information among the negotiators (Pruit & Lewis, 1975; Carnevale et al., 1981;

Schlutz & Pruitt, 1978). Moreover, more pessimistic findings about the role of information sharing state that the action of sharing information is not relevant with the quality of the bargaining resolution (Pruitt, 1981).

Nevertheless, Thompson (1991) alleged some objections about the aforementioned results as she criticizes the way that there was a manipulation of the information shared rather than measuring information sharing. Moreover, she accuses the previous studies for an attempt to measure the results of opportunity for information sharing rather than the actual information sharing that took place between the bargaining dyad and as a result affected their negotiation behaviour (Thompson, 1991)

However, the dispiriting findings can be interpreted through the fixed-pie error (Bazerman & Neale, 1983). Taking this into account, we can argue that by definition agents will not easily start to exchange valuable information. This fact is related with the debate that if the opportunity to have some information shared leads to actual information sharing (Thompson, 1991).

This bias, leads to a suspicious behaviour that creates a norm of behaviour for the negotiators called "reactively devalue" to any concessionary proposal made by the opponents (Oskamp, 1965; Stillinger & Ross, 1991; Ross, 1995) There is a tendency from negotiators to interpret cooperation as a method to comprise, and this leads to lose-lose situations (Thompson, 2012). Nevertheless, according to Deutsch (1973) only a few conflicts of interest do not leave some space for a win-win agreement. The fixed-pie error is not a true depiction of the reality according to some scholars (Raiffa, 1982; Walton & McKersie, 1965).

The outcomes may reach a higher level of integration, according to Sebenius (1992), if the negotiators are influenced by the following factors:

(i)   all agents in a negotiation have the same interests on the matter

(ii)   There is an incentive to exploit economies of scale, and

(iii)   Combining differences that can be the vantage point to create value by weighing the relative importance of them and make trade-offs according players' needs.

Thompson (2012) warns the negotiators that not all strategies, which at first sight might seem as facilitators of integration, will generate the expected results. Thompson (2012, pp. 95-96) argues that particular strategies, such as 'commitment to reaching a win-win deal, compromise, focusing on long-term relationships, adopting a cooperative orientation, and taking extra time to negotiate' do not have often expected integrative results.

All this strategies do not guarantee a successful integrative agreement even though they might create the illusion for succeeding in that. Too many and early concessions can be the flaws of strategies as commitment for an integrative agreement and compromise.
 Focusing on a long-term relationship might be the key in achieving a greater outcome; however a long-term relationship per se does not guarantee the achievement of win-win result.

Adopting a cooperative orientation might make negotiators vulnerable to the 'relational accommodation' (Thompson, 2012, p. 95) an effect that leads to Pareto inferior outcomes. In Curhan, Elfenbein, and Kilduff (2009) provide greater insight the aforementioned effect, arguing that contexts that are based on hierarchy outperform the ones that rely on values of equity.

Critics about extra time needed in order to derive in an integrative agreement address that agents usually tend to adjust their productivity on the given time span (McGrath, Kelly & Machatka 1984). Therefore the results might be the same, independently the allocated time. Stated differently, we should expect a difference between the results of a negotiation process that lasted three hours to another that lasted four.

According to some scholars (Thompson, 2012, Bazerman & Neale, 1982) there are some strategies that might promote a win-win bargaining outcome if used in a wise manner. Nevertheless, the type of the counterpart is a crucial factor in deciding which of the following strategies should be deployed.

The first, and one of the most important, is the 'perspective taking' strategy, which calls the negotiators to stare ate the problem through their counterpart's point of view (Galinsky et al., 2005; Galinsky, et al., 2008).

Following this strategy, leads to increased effectiveness on solving negotiating problems from the part of the negotiators and therefore achieving integrated settlements becomes more common (Richardson, et al., 1994; Thompson, 2012). Moreover, Perspective taking gives negotiators the advantage to understand the issues where the counterpart is most interested in, and thus, increase the value-claiming ability in the issues that the counterpart does not bother (Bazerman & Neale, 1982). Both motives (value-claiming and value-creating) that are characteristics the negotiations can advance through his or her strategy.

Implementing this strategy can help a negotiator identify more easily any anchoring strategies deployed from the counterpart in order to distort his own perception (Galisnky & Mussweiler, 2001).

It is worth mentioning here that a distinction between "perspective taking" and an emotional connection has to be made. Even though in both conditions there is an attempt to understand and sympathize the counterpart the results of the resolution of a conflict are quite different (Galinsky et al., 2008). An emotional relationship with the counterpart is called empathy (Galinksy et al., 2008). When negotiators are affected by empathy they deviate from rational or cognitive prescriptions and make it less possible to reach and integrative outcome. In order to achieve win-win settlements negotiators have to utilize their cognitive abilities (Thompson, 2012).

It is better to try to understand the strategies of the opponent and his or her cognitive intentions rather than aim to understand his heart because you will start making discounts for the sake of the relationship (Crotty & Thompson, 2009, Galisky et al., 2008).

Secondly, a strategy that is useful in order to extract the right information, in order to reach an integrative agreement is to ask the relevant and accurate questions in order to extract the information needed (Thompson, 2012; Bazerman & Neale, 1993).

Questions about priority issues and preferences reveal valuable information that can be used as the raw material in order to build towards an integrative outcome (Thompson, 1991). Diagnostic questions about where the actual interests and the values of a negotiator lay might increase the understanding with each other. The medium of communication might also have a great impact on the effectiveness of these questions, with face to face communication being the best way to overcome coordination problems and mistrust. Thus, the diagnostic questions can be a tool to help the counterpart to reveal what he or she values and what are his or her real interests, achieving the necessary level of openness that is needed in order to derive into a win-win result (Thompson, 2012). Nevertheless, asking questions that are not suitable might be dangerous as it could generate the adverse results from the ones originally expected by using this strategy. Receiving the wrong kind of information might hinder the path that leads to a win-win agreement as negotiators feel inconvenient and thus, more prone to bring the process to an end (Wiltermuth & Neale, 2011).

There are some particular motivations that might lead a negotiator to ask the right questions about the counterparts needs. People who showed interest about the counterpart's perspective by asking questions are usually in a better position in order to understand his needs (Thompson, 2012). A thorough preparation of just a set of questions for the counterpart is enough to lead to a constructive dialogue characterized by openness (Chen et al., 2010). Besides good preparation, agents that are characterized by high levels of 'epistemic motivation' have an inherent tendency to ask more often the right kind of questions that will lead the counterparts to an integrative agreement (Ten Veldem et al., 2010). Moreover, these people tend to add more issues in the negotiation table (Ten Velden et al., 2010) something that facilitates win-win outcomes (Lax and Sebenius, 1986, Ten Velden et al. 2010; Bazerman & Neale 1992)

Thirdly, revealing information about your own party can be seen as an additional strategy for reaching win-win agreements. Honesty is something that people expect from a negotiator especially when referring to facts (Thompson, 2012). However, there are studies arguing that people who are straightforward, most of the times are more concessionary and thus, get inferior outcomes in terms of profits (DeRue et al., 2009). It is false to have the impression that a successful negotiator should not reveal any information about his or her interests (Bazerman & Neale, 1993). It follows that the important issue is to understand what kind of information you have to reveal (Thompson, 2012). In particular, if you are able to

disseminate the right kind of information you increase the probabilities to reach an integrative agreement (Thompson, 1991). Other studies argue that negotiators can reveal six types of information (reservation point, position, underlying interest, priorities, key facts, and substantiation) which an experienced negotiator has to be able to recognize and analyse (Thompson, 2012). Of course, negotiators have to be selective in revealing information and chose carefully from the aforementioned categories. It is better to talk about their priorities rather than their reservation points (Thompson, 2012; Bazerman & Neale, 1993; Lax & Sebenius, 1986). The former might facilitate openness and understanding thus integrative bargaining, however the later will make the negotiator vulnerable to distributive terms.

Information sharing follows a particular bandwidth path during a negotiation that can be characterized by a unique time course (Thompson, 2012). For example, Adair and Brett (2005) break the negotiation into four time-parts: in the first people deploy influential strategies, in the second both parties start revealing information about their priorities, in the third offers and counteroffers make their appearance and in the last negotiators try to get into an agreement based on the other's offers.

Of course revealing information is not such an easy task. Problems arise because negotiators might have the impression that they reveal information that is straightforward however, the counterpart might not be able to understand them (Thompson, 2012).

This misrepresentation is based on an effect called 'illusion of transparency' described by Gilovich, Savitsky and Medvec (1998) which appears when negotiators believe that they are disseminating more information than they do in reality. Results from a study asking subjects to assess if a third person could really understand their goals revealed overestimations on their beliefs about their own transparency (Vorauer & Claude, 1998). Stated differently, and with a more generalizable notion Lowenstein and Moore (2004) argue that information that is vague and easily misinterpret lead to stalemates and misleading expectations.

Fourthly, it is important to unravel the issues that are in stake in the bargaining table. This strategy calls negotiators on the one hand to abandon the perception of the distributive bargaining and on the other hand to have a more holistic approach on the negotiation process that will accommodate win-win agreements (Bazerman & Neale, 1992; Lax & Sebenius, 1987; Thompson, 2012). Negotiators usually start to negotiate over single issues separately

without giving the chance to incorporate different issues with an ultimate goal to make trade-offs between issues (Thompson, 2012).

Fifthly, it is more prosper in integrative terms to make offers and discuss over multi-issue deals (aka package deals) (Thompson, 2012). In order to reap the most out of an agreement there is a need to compare issues and debate over trade-offs (Sebenius, 1992a). In addition, if the space for an agreement is too short and trade-offs are necessary in order to reach an agreement it will be more possible to reach a dead-end.

Sixthly, there is another strategy that should be deployed if extracting information from the counterpart is not an easy and effective task. The strategy entails the proposal of different package deals that each of them has equal value to and can trigger a haggle of trade-offs where information about priorities might emerge (Kelley & Schenitzki 1972; Kelley, 1966; Thompson, 2012; Bazerman & Neale 1992;).

The benefits from the 'multiple offer strategy' are threefold incorporating the following advantages:

- The multiple dimension allows to avoid haggling over a single issue

- A variety of alternative solutions as there are many options, and

- Offers all the alternatives at once calling the other party to provide a collaborative response (Thompson, 2012).

The latter signals to the counterpart that the various issues on the table are not separate and he/she cannot act in an a la carte mode (cherry-picking). The strategy tries to create the illusion that all issues have to be solved even if this is not the real case (Schatzki & Coffey, 1981).

According to various studies negotiators who follow the aforementioned strategy foster a cooperative atmosphere that might facilitate trust (Leonardelli et al., 2008) and as a consequence they succeed in achieving integrative agreements with higher joint outcomes

(Huder et al., 2000; Leonardielli et al., 2008). To conclude, we can argue that there is a change of attitude among the negotiators on how to handle the negotiation task.

Moreover, offering a package that incorporates many offers is one of the most effective ways to avoid exhausting and ineffective negotiating handling dealing with each issue in a one-to-one basis (Thompson, et al., 1988; Weingart et al., 1993). This inferior negotiating style often leads to polarization between negotiators through to substantiation (Weingart et al., 1996). Substantiation is one kind of information people might disseminate during a negotiation process and actually leads them to adopt rhetoric that either supports with zeal their own position or blame the position of the counterpart (Thompson, 2012, Weingart et al., 1998).

The multiple offer strategy has as a target to promote an integrative solution through building the best conditions for achieving it.

Overall, negotiators that follow the strategy of multiple-offers seek to gain an advantage by eliciting information from their counterpart, by standing firmly on their offers, by informing the other person about their priority-issues, by creating an anchoring effect for their own benefit, and, by inducing the other party to a concession strategy (Medvec & Galisnky, 2005).

Here is the similarity with the literature of game theory on the solutions in Social Dilemmas or more precisely the Prisoner's Dilemma. The agents of the dyad would achieve a greater joint outcome advancing social welfare, but probably their individual welfare too, by being more cooperative rather than just seeking their personal gain (Dawes, 1980; Kamorita & Park 1995; Van Lange et al., 1992).

Bazerman, Gibbons, Thompson and Valley (1998) mentioned real-life examples where negotiators reach agreements that are mutual beneficial for both parties and outperform the proposed game theoretic solutions.
In integrative bargaining situation, the gains of one party do not represent equal sacrifices by the other.

Thompson and Hastie (1990) argue that by identifying the issues where negotiators have some common ground, but also which issues are important for the counterpart, will facilitate

the process in order to achieve an integrative outcome. Of course negotiators have to follow the 'logrolling' method, make trade-offs in those issues, in order to derive into an integrative agreement (Froman & Cohen, 1970). It is not only the difference in the underlying preferences that make negotiators to have a conflict but sometimes that they view the world differently and in fact all these difference can add the available space for manoeuvre in order to find integrative solutions (Lax & Sebenius, 1986).

The integrative agreements can be seen as better outcome in terms of efficiency and Pareto optimality (Thompson, 1990).

However, a plain calculation of joint profits is not a sophisticated measure in terms of sensitivity therefore Lax and Sebenious (1987) introduced the 'integrative quotient' a measurement of the distance from the Pareto optimal frontier. Findings following this method showed the existence of strong ties between integrative quotient and other measures of joint profits (Weingart et al. 1990).

Sebenius (1992) illustrates a simplistic approach of the notion of a perceived Pareto frontier, where both agents do not share a common view about the actual location of this frontier. Any movement of the frontier upwards can be justified with the introduction of any integrative suggestion. According to the later, it can be argued that elimination to the "conflict of interest" as described in Axelrod's (1970) book might emerge.

As Pruitt and Rubin (1986) argue, integrative agreements are perceived as facilitators of agreements that incorporate greater utility, facilitate bonds between agents, promote stable solutions and advance the broader prosperity of the broader society.

Risk taking and expectation about the future is another difference that might help them to achieve a win-win solution (Lax & Sebenius, 1986).

Different approach toward risk has great impact on human behaviour according to Tversky and Kahneman (1981). Therefore is valid to argue that framing the process of the negotiation either as gain or a loss will have different impact on the agreement (Neale & Bazerman, 1985; Bazerman & Neale, 1992; Thompson 2012; Kray et al 2008, Tversky & Kahneman, 1981, Kahneman & Tversky, 1979; Thaler, 1980; Bazerman 1984). According to the findings

of this literature agents are risk-averse preferring a sure-thing over another outcome that might have a high degree of uncertainty. Moreover, it is important address that prospect theory (Kahneman & Tversky, 1979) relates future gains and losses with the effects that they might have on the current income of the players.

A risk-seeking attitude that evaluates the deal under a future-losses perspective will generally lead to more impasses than, a risk-averse attitude that results from taking into account future gains and as a consequence increases the likelihood to achieve an agreement (Farber & Katz, 1979).

These, finding is very important because it is showing that expected utility used in economics suffers from a serious deficiency (Neale & Bazerman, 1985).

Bazerman and Neale (1983) addressed that changing the framing in the same problem resulted in very different outcomes in a labour-employer dispute. Similarly, another study (Neale & Bazerman, 1985) argues that adopting a positive outlook on the problem made subjects to achieve better outcomes and are more concessionary than other subjects with negative frame. In a context of buyers and sellers studies derived in the same conclusion; participants with positive frame were more successful (Bazerman et al., 1985).

Negotiators that have a positive-frame towards the process (gain-frame) often deploy more effective strategies and settle to integrative agreements; conversely, negotiators that are pessimistic and adopt a loss-frame are more risk seeking and are prone to wrong choices and accept inferior outcomes such as contingent agreements (Kray et al., 2008). Contingent agreements are a special category of agreements that are characterized with some drawbacks (Thompson, 2012). I assigned the term inferior to them because as Bazerman and Gillespie (2009) argued, contingent agreements emerge on processes that would be differently an impasse.

In a similar manner, negotiators aspirations about their ultimate targets can influence the bargaining outcome. People that set higher aspirations and more challenging tasks are more likely to search thoroughly for an integrative agreement than others that set lower or no aspiration points (Huber & Neale, 1986).

Anchoring and adjustment heuristic can be seen as an impediment that affects decision making of agents. According to this heuristic a random reference point called anchor might influence the estimation of the true value of a variable (Tversky & Kahneman, 1974, Northcraft & Neale 1987). Moreover any further adjustments of the ill-informed estimations will be in comparison with the anchor (Slovic & Lichtenstein, 1971). Empirical evidence from laboratories and real-world settings reveal that anchoring and adjustment heuristics affect the estimations, of both experts and novices, on true values of variables (Northcraft & Neale, 1987). The first offer in a bargaining table from any of the counterparts may play the role of the anchor in the negotiation process. When there are high degrees of uncertainty on the issues at stake negotiators showed to be more influenced by the initial offers (Yukl, 1974b) than the concessionary path that has been followed by the opponent afterwards (Liebert et al., 1968). However, people that were properly prepared and well informed about their options and interests have not been influence by the initial offer of their counterpart (Liebert et al., 1968).

Another bias that hinders the ability of the negotiators to reach an agreement is the availability heuristic (Neale & Bazerman, 1985; Bazerman & Neale 1992). Having a direct impact on getting to an agreement or not, this heuristic has an influence the quality of the result. This heuristic is connected with the false perception that sometimes people develop when judging events and tasks as long as they do not use the most relevant information but the more vivid or easily remembered (Tverksy & Kahneman 1973; Bazerman & Neale 1992). As a result if there is information that is characterized as emotionally stimulating or image producing it will be more vivid and therefore might start influencing the decision maker (Tversky & Kahneman 1974; Neale & Bazerman 1985). As a result, information that has a direct effect on the negotiators, because it is more provocative or familiar to them, will result in initiating the availability bias which in turn will a blur the decision makers ability to evaluate their options (Neale & Bazerman, 1985). According to Tversky and Kanhman (1974) the false application of availability heuristic accrues from three sources:

- Irrelevant information which is easily retrievable by the subjects

- Bias on search effectiveness

- False correlation of information, because of its vividness, with irrelevant tasks.

Therefore, due all the aforementioned biases negotiators might be misled and not succeed to achieve an agreement at all. As Nisbett and Ross (1980) address the impact of events or information that occur more often, as they are recalled easier and therefore agents assign greater probability to these events or information that might happen again in the future. Similarly, 'focal points' are facts and salient information that seem to be true but do not have any validity in reality (Thompson, 2012).

Studies on focal points, address that people tend to remember and combine irrelevant information just only because it was arbitrary offered to them (Lovallo and Kahenamn 2003).

Another distorting factor that might affect negatively the decisions of negotiators is the tendency of overconfidence, which negotiators show in the evaluations of their judgements (Neale & Bazerman, 1985). A vast amount of literature addresses, some even showing experimental evidence, that negotiators often exhibit overconfidence (Eihorn & Hogarth, 1978; 1981; Lichtenstein et al., 1977; Fischoff, 1982; Bazerman & Neale 1992; Neale & Bazerman 1983; Bazerman & Neale 1982; Neale & Bazerman, 1985).

Einhorn and Hogarth (1978) addressed that often agents seem to be overconfident in inaccurate judgements they have made. Fishoff (1982) argues that even in judgements that the subjects were sure (confident 100 percent) about their accuracy, the actual percentage was below that (85 percent). Similar results have been demonstrated when people should assign confidence intervals for their judgements (Bazerman & Neale, 1983). The same stands for judgements about their probabilities to be successful in their task (Eihorn & Hogarth, 1978, 1981; Lichtenstein et al., 1982).

This bias is highly important when there is a clause for arbitration if the two negotiators do not reach an agreement. People will tend to stick on their demands, even if they are outrageous, as they might strongly believe that they will be the winners under the arbitration process (Neale & Bazerman, 1985). Taking this into account, it is valid to argue that negotiators that are overconfident will not act according to rational prescriptions and therefore might not be able to work towards an integrative agreement. Overconfidence

characterizes negotiators that are not ready to actively investigate for information that might falsify their judgements (Wason, 1960)

Overconfidence distorts the fair evaluation of the positions that one party has towards its counterpart; an evaluation crucial to allow successful bargaining strategies to emerge (Seigal & Fouraker, 1960). Therefore, it is valid to argue that agents that suffer from the overconfidence bias are less concessionary and underestimate the necessity to have some level of compromise in order to reach a resolution or more successful outcomes (Neale & Bazerman, 1985).

The faulty perception, a negotiator has, about the interests of their counterparts is another crucial factor that might hinder a mutually beneficial agreement (Thompson & DeHapport, 1994). Similar studies showed that negotiators had a real difficulty to understand both their and the counterparts interest (Balke et al., 1973).

As we have already mentioned people have strong misperceptions and wrong biases, believing to a competitive nature of negotiators and the fixed-pie distributive bargaining process (Bazerman & Neale, 1985a; Thompson & Hastie; 1990). As Kelley and Stahelski (1970) argued competitive characters create the tendency to a cooperative character that exists in the same society to change his nature into a competitive one, especially when facing problems like the Prisoner's Dilemma.

Moreover, an initial faulty judgement about the opponent's interests is not abandoned easily even when neutral facts advocate towards the opposite direction (Ball et al., 1991). There is a tendency for agents to focus only to the information that is relevant with the expectations that they have already developed erasing the disconfirming evidence (Higgins & Bargh, 1987; Fiske & Taylor, 1991; Ross & Nisbett, 1991). In addition, we should address the work of Heider (1946, 1958) who argues that people tend to align their counterpart's interests with the inherent perception that they have to perceive an opponent as an enemy. Balke, Hammond and Meyer (1973) argue that human judgement suffers from the inherent errors, blurring judgemental procedures, creating ominous conditions which increase conflict and mistrust among negotiators. The aforementioned deficiencies of human judgement lead agents to face difficulties when they want to predict their counterpart's behaviour.

Taking into account, the inability to share the right kind of information during the negotiation process, it is straightforward why misperceptions about the opponents are so durable (Thompson, 1991).

We should expect that experienced negotiators would have a greater ability to understand the intentions of their opponent, as in behavioural decision making (Einhorn & Hogarth, 1978; Hogarth, 1981). However, this is not the always the case. Often negotiators are captured by the aforementioned biases and cannot clearly understand the interests of their opponents, and therefore they cannot reach win-win agreements (Thompson & Hastie, 1990).

Thompson and DeHapport (1994) addressed that feedback is an important factor which can benefit social judgement. Balzer, Doherty and O'Connor (1989) make a distinction between outcome feedback that reveals only the outcome achieved by counterpart and cognitive feedback addresses informational cues and relations that exist in the context.

Empirical evidence shows that outcome feedback does not improve judgemental abilities of negotiators about their counterparts and that is not facilitating the integrative agreements (Brehmer, 1980; Einhorn & Hogarth. 1981; Thompson & DeHapport, 1994). Nevertheless cognitive feedback is helping negotiators to understand better the interests and the needs of their counterparts (Balzer et al., 1989) thus, facilitating integrative agreements (Thompson & Hastie 1990; Thompson & DeHapport, 1994).

It is also important to mention that the importance of the task for each negotiator may influence the quality of the agreement. In an interdepend task such as a bargaining process (Hammer & Harnett 1974; Siegel and Fouraker 1960) the outcome can be influenced by the importance of goals (Huber and Neale, 1987).

The literature illustrates that win-win solutions are most often the result of a dyad with challenging goals for each agent, as this fosters the right conditions to search for compatible issues (Bazerman et al. 1985; Kimmel Pruitt et al. 1980; Locke et al. 1981; Huber and Neale 1987). The personal performance was better when negotiators had to confront a moderate challenging task on terms of aspiration goals rather than an easier one.

Specificity of goals can be seen as crucial factor (Pruitt, 1983) that affects negotiators ability to derive into integrative outcomes (Huber & Neale, 1987). A mixture of good cooperation and aspiring goals leads to the relative better outcomes (Halpert et al., 2010). Taking all this

into account, results indicate that 'if aspirations of negotiators are too high, too easy, or nonspecific, the likelihood of an integrative win-win solution decreases dramatically' (Huber & Neale, 1987, p. 203).

Generally the aspiration levels of a negotiator can be affected by the magnitude of the concessions made by the counterpart, the time constraints imposed on the process and if he/she is informed about the payoffs of the opponent (Yukl, 1974).

About the aspiration levels and their manipulations from the opponents concessions there are three alternative approaches. Firstly, the "aspirations hypothesis" that calls for negative relations between the magnitude of concessions of two negotiators (Siegel & Fouraker, 1960). Secondly, the "reciprocity" hypothesis that supports the opposite relationship from the aforementioned and thirdly, the "independent action" hypothesis that argues that negotiators have predetermined strategy that is not influenced by the concessions of the counterpart (Yukl, 1974). The reciprocity norm is believed to be one of the most effective strategies in negotiations in order to achieve an integrative outcome.

The history of success or failure of negotiators in past bargaining processes is another factor that may affect the result in a negotiation process (O'Connor et al., 2005; Kray et al. 2008). Negotiations with previous successful cases were more prone to accept the right amount of risk (strategic risk) in order to share information and potential issues for trade-offs. (Kray et al., 2008).

It is important to distinguish between the types of risk that might exist in a mixed motive process. Although not all researchers follow this distinction it is important in order to understand what kind of risk negotiators should undertake during the process of a negotiation. Strategic risk is related with the uncertainty negotiators experience when they share information about their preferences (Roth, 1977). Such an exposure entails the danger to get exploited by a counterpart that follows a distributive tactic (Pruitt & Rubin 1986). However, negotiators that are able to take this kind of risk are more effective in creating joint value and achieve win-win agreements (Thompson, 1991).

On the other hand, contractual risk is associated with the risk that negotiators deal with when there is no certainty about future events (Bottom, 1998). According to Ring and Van de Ven (1994) there are two sources for contractual risk- the first one is connected with the fact that

the value of the agreement might be unknown during the negotiation process and the second concerns the distrust that might exist on the face of the counterpart on actually honouring the agreement.

Even though most scholars argue that strategic risk is necessary to promote integrative agreements, there are researchers that argue the contrary (Bazerman and Gillespie 1990).

To sum up, negotiators should be trained in order to avoid falling pray of these biases that we analysed in this chapter. Just the awareness is not going to help as the influence from biases in decision making is not just a characteristic of the novice (Tversky & Kahnemann, 1974). If negotiators are trained with a contemporary method they will be able not only to avoid but also to use this strategic information in order to take advantage against less advanced negotiators (Neale & Bazerman, 1985).

If negotiators, after sufficient training, are able to identify the biases that are vulnerable on, clarify actual losses and gains from fake perceptions and understand that the opponent may use similar framing strategies in order to manipulate her or his perception then they may succeeded in negotiations (Neale & Bazerman, 1985)

2.4 Game Theory

Analysing joint decision making under condition of conflict can be a difficult task. There are different views in the literature about how to tackle this problem. One of the most prominent and ambitious fields that examines this problem is Game Theory. Game theory can 'be defined as the study of mathematical models of conflict and cooperation between intelligent rational decision-makers' (Myerson, 1997; p.1).

Myerson (1991) argues that decision making analysis is not the appropriate approach in order to examine conflicts when all perceptions of all parties are being taken into account. He suggested that classic game theoretic approaches with standard Nash equilibrium solutions are more effective to handle the aforementioned conflicts. On the contrary, other scholars as Sebenius (1992) defends the decision making analysis and negotiations analysis arguing that rationality is not guaranteed for both players and the notion of subjective perceptions on the

distribution of the outcomes facilitates the ability to work on multiple concepts, with multiple equilibria.

Game theory as a scientific field has an important position in the theory of decision making (Raiffa et al., 2007; Davis, 1997). The approach that game theory has towards negotiation is a purely normative approach based on refined assumptions about rational self-interested agents. However, in the premises of the negotiation analysis 'game theory' most of the times serves as a valuable source of insight as it is used with some degree of deviation from the rigor assumptions (Raiffa et al.,2007). The agents in Game theory behave rationally without making mistakes about his or her own preferences and goals. As it is argued by Myerson (1997, p.2) 'a decision maker is rational if he makes decisions consistently in pursuit of his own objectives.' The idea of maximizing the expected utility by any decision maker was formalized by Von Neuman and Morgenstein (1947) in their seminal book 'Theory of Games and Economic Behavior'. Introducing the concept of utility and using a number of assumptions the theorem of expected utility maximization was established calling any 'rational decision maker' that has assigned in each outcome some utility to select the one that will offer him or her the maximum expected utility (Myerson, 1997). The preferences of the players are expressed through a utility function (Luce & Raiffa, 1957).

 In order to introduce a utility function some assumptions have to be made:

1. Any individual can decide between two offers which one is more preferable or to be indifferent between these two; all objects are comparable

2. Transitivity in preferences and indifference: if V is better than X and X is better than Z then V is better than Z. If a player is indifferent between v and X, and X and Z then, he or she should be indifferent in a comparison of V and Z.

3. An individual is indifferent between lotteries when equal prizes are substituted; if the player is indifferent between the substituted prizes he or she will be indifferent between the old and new lottery.

4. A player will always accept a bet if the odds are favourable; if V is better than X and X is better than Z then if there is a probability combination of V and Z with a probability p between zero and 1 that will make will make a lottery as desirable as X.

5. The better the probability to get the preferred prize, the better the lottery; between two lotteries I and II that will offer V and Z as in (2) then I is preferred than II because the probability to get Z is greater and vice versa.

6. Individuals are indifferent to participate in compound lotteries (lotteries that the prizes are tickets for other lotteries).

<div align="right">(Nash, 1950; Luce & Raiffa, 1957)</div>

2.4.1 Strategy, Players and Payoffs.

The main concepts in a game are the players, the strategies and the payoffs (Davis, 1997 p.6).

Players are the participants in the game. There might be only two players in the game or multi-player games. These players that have to select their strategy in a game have to 'assess the extent to which his or her goals match or clash with the goals of others to decide whether to cooperate or compete with all or some of them' (Davis, 1997, p.xiv).

These kinds of games, that have both cooperative and competitive motives are often more complex and are the ones that are more regularly encountered in real life (Davis, 1997). As we already seen in the previous section of the chapter negotiations are a mixed-motive situation where both parties have competing but also cooperative interests.

In general, strategies are just the variety of choice that a player can take (Dixit & Skeath, 2004). If a game has only one round that players move simultaneously then strategy can be just a choice as mentioned above. However, if there are many rounds in a game, the notion of strategy incorporates not only a player's mere choice in isolation from the other player, but it

reflects his or her reaction in the past choices of all the players of the game including himself-herself.

For any given strategy the outcome will offer the player some winnings or losses that are called 'payoffs' (Davis, 1997). In other words 'the number associated with each possible outcome will be called that player's payoff for that outcome' (Dixit & Skeath, 2004 p. 28). According to the payoffs gained by each player another classification of the games can be made. The most well-known is the distinction between 'zero-sum' games and 'non-zero' sum games. The former called also 'Constant-sum' signal that the players have totally opposed interests as there is a fixed amount that is divided among the players. This means that a gain of one player is automatically a loss for the other. These games are purely competitive as your opponent's' worse outcome is your best. In Non-zero sum game this is not the case. Therefore both players might win from a specific combination of strategies. In this category of games a degree of cooperation is often needed in order to satisfy the players' interests. So one the one side of the continuum are the zero-sum games with a purely competitive nature and on the other side agents have only common interests, in between there are games with both competitive and cooperative elements (Davis, 1997).

The mixture of the key elements of game theory leads to the crucial notion of Equilibrium in a game. As find in the textbooks, equilibrium 'simply means that each player is using the strategy that is the best response to the strategies of the other players' (Dixit et al., 2004)

Nash equilibrium is called "any pair of strategies with the property that each player maximizes his or her payoff given what the other player does" (Ostrom et al, 1994, p. 54). A equilibrium is called 'Pareto' efficient when there is no other strategy combination will improve the payoffs of the players simultaneously (Dixit et al., 2004). There might be more than one equilibrium points in a game. Moreover, there is not a necessity in non-zero sum games these equilibria to have the same payoffs; some of these equilibria may be more attractive than other.

A very important category of games, can be seen these that describe the so called social dilemma or 'social trap'. The main characteristic of social dilemmas is as described by Kollock (1998, p. 183) 'individually reasonable behaviour leads to a situation in which everyone is worse off than they might have been otherwise.

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2.4.2 Rationality

The real-life experience, nevertheless, revealed us that most of the times people act differently than prescribed by the game-theoretic rules. People in their everyday life encounter problems that lead them to deviate from rationality. Moreover there are many situations that people do not act in order to maximize their utility. For example in Schwartz and Greebleaf (1978) study, the findings showed that wealth affects our attitude towards risk rather than the actual expected return. In addition many studies have demonstrated that people tend to participate in gambling games that offer a negative average payoff, which should be labelled unattractive under the game theory principles. As it was addressed quite early in a study of Markowitz (1952) people act not according some divine rules that prescribe behaviour but their income constraints; opting for the sure thing when the stakes went beyond their economic capacity was the norm. More precisely, when participants had to decide between a sure payment of a dollar or a bet that might offered then ten dollars the majority of them have opted for the bet. However, most of the participants settled for the sure payment when the amounts have been 1000 dollars or a gamble that would offer back ten thousands back.

It is valid to argue that 'we cannot make any general assumption about people's wants, because different people want different things' (Davis, 1997, p.63). Therefore, there are some critics about having the ability to use utility functions to depict the preferences of each individual.

It is important for rational decision making that the preferences of the players exhibit consistency, aligning with the assumptions that allow to introduce a utility function for the players. Nevertheless, this consistency is often breached. Kahneman and Tversky (1982) by conducting behavioural experiments showed that most times people do not act with consistency as they often make different decisions in equivalent situations that have just been articulated in a different way for experimental reasons. The same paradoxical behaviour was reported some years earlier by Savage (1954) who addressed the same inconsistency when purchasing a car with or without a radio.

In addition, decision makers have to exhibit some experience in order to be ready to show great consistency. These problems are very crucial especially in 'mixed-motive' games that combine cooperative and competitive characteristics.

There is distinction of social dilemmas according the number of players participating into the game. The two main categories are the one that are describing games played only by two players and the games that are played by multiple players (common dilemmas).

The most famous representation of this kind of game is the 'Prisoner's Dilemma' introduced by Albert Tucker in 1950. The example was the story of two criminals that have been arrested and have to combine their action in order to find out the consequences on them. If one confesses and the other remains silent the one that confessed goes 20 years in jail and other is free. If both confess they go in jail for 5 years and if both do not confess they go for one year in jail. If we follow the prescriptions of game theory then the best strategy for each player is to confess. However, the result is not the best that jointly could be achieved. In short, 'social dilemmas are situations in which individual rationality leads to collective irrationality' (Kollock, 1998, p. 183). The intriguing paradox lies in the fact that two players that do not have the super smart profile of the ideal rational player described by game theory will be able to achieve a better outcome than two players that would align with rationality (Davis, 1997). The irrationality will prevail through a rational way of thinking.

Even if the game is played for many rounds, if both players know when it is the last round, it is for their self-interest to defect in that final round. But because of the backward deduction of in game theory, this is anticipated from the other player so this player should defect in the earlier round before the final round. This sequential argumentation would lead to defection from the first round.

The multi-player social dilemmas can be classified according to the payoffs they offer into two categories; 'social fence' and 'social trap' (Croos & Guyer, 1980).

- The former refers to situations when your action will generate on the one hand a loss for yourself but on the other a benefit for the wider society; the scale of the fence is the prize each should 'pay' in order to overcome the dilemma

- The latter refers to an action that would generate a benefit instantly to the individual doing the action but this action would have a negative burden for the rest of the society. If everyone will decide to act according to prescription of the dilemma a real disaster might occur

(Kollock, 1998)

For example, it is widely known that the provision of public goods can be seen as a social fence and the 'tragedy of the commons' as a social trap.

All these, situations in economics are related with the notion of externalities that appear ' whenever the behaviour of a person affects the situation of other persons without the explicit agreement of that person or persons' (Buchanan, 1971, p. 7).

Nevertheless, it is important to address that people might be trapped in these paradoxes because of the time lag between action and negative effect (Messick & Brewer, 1983) and the different incentives that actors in a society have in relevance with a particular action (Marwell & Oliver, 1993).

These social traps have been observed in the society from many years ago by the political philosophers such as Aristotle and Hobbes who stated that a similar thing is anarchy in a society that might offer some individual benefits but the whole will lose. Luce and Raiffa (1957, p.97) have argued 'that some hold the view that one essential rule of government is to declare that the rules of social 'games' be changed whenever it is inherent in the game situation that the players, in pursuing their own ends, will be forced into a socially undesirable position'. The proposed solutions on the abovementioned problems oblige enforcing laws and governmental intervention in order to guarantee the provision of some public goods.

There is a vast amount of literature proposing different kinds of solutions which can be classified into three broad categories;

- *Motivational solutions* that relax the assumptions about purely self-interest players; assuming that agents take into account the outcome received by other party

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-   *Strategic solutions* assume self-interest agents and there is no important changes in the structure of the games

-   *Structural Solutions* that prescribe the change of rules that affect the game

(Kollock, 1998)

2.4.3 Motivational Solutions

There are many individuals that often value not only their payoffs but their partner's payoffs too (Dawes, 1980). Therefore it is valid to argue that there are solutions that might arise by the perceptions that individuals have towards the welfare of their partners.

The main stream of theory that takes into account the individuals' perception on distributions of outcomes is 'Social value orientation' (McClintock & Liebrand. 1988).

There can be many 'social value orientations' that reveal the preferences for some specific distributions of outcomes compared with others (van Lange et al 1992). There are four prominent behavioural personalities, according to social value orientations, that reveal a specific preference for the distributions of the payoffs:

1. Cooperative orientation; according to which individuals that have this orientation have as an ultimate aim to maximize the joint outcome with their partner

2. Competitive orientation; according to which individuals will try to maximize the difference between their outcome and the one of their partners

3. Altruistic orientation; the individual is concerned with maximizing the outcome of their partner's without bothering for their own share

4. Individualistic orientation; the main aim of the individual is to maximize its own payoff

(Kollock, 1998)

Various studies have revealed that different social value orientations lead individuals to behave in different way when they have to cope with an identical problem (McClintock & Liebrand, 1988, Kramer et al., 1986, Liebrand, 1984).

There are only a few examples in real life where common knowledge is following the idea as perceived by Harsanay (1956). Therefore, different perceptions may lead to a different unfolding of the game as rules of interaction may be misinterpreted.

Aumann's (1976) perception that common knowledge is the milestone of game theory can be used here as a counterargument for studies of game theorists on negotiation and as an argument on behalf of negotiation analysis.

Moreover, differences on the level of trusting your partner exist among individuals, and this factor has an influence on finding cooperative solutions (Yamagishi, 1986). All these differences seem to be stable in time (Kuhlman et al., 1986). An important finding relevant with the social value orientations is that people that have a cooperative stance have higher levels of expectations that others will cooperate too (Orbell & Dawes, 1993).

In addition, other studies revealed that competitive orientations are formulated in earlier stages of childhood than cooperation and it varies among various countries (Toda et al., 1978; McClintock, 1974; McClintonk & Keil, 1983). In addition, other studies revealed relations among major studies and levels of cooperation (Marwell & Ames, 1981; Frank et al., 1993). Nevertheless, it is important to address that social value orientation is very helpful to explain cooperative behaviour as a tendency in order to explain high rates of cooperative behaviour than to use its explanatory power to find solutions in the dilemmas (Kollock, 1998).

Another study that took into account the perspectives of the players towards the society was the one of Lutzker (1960) that examined behaviour in the PD according the political attitudes of the players. The results revealed that extreme 'isolationists,' who are people with

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competitive views in global politics, cooperated less than extreme 'internationalists,' who believe in the in more cooperative views in the global arena (Lutzker, 1960).

Another personal trait which influences the strategy that participants followed in a PD game was the tendency of 'trustingness' and 'trustworthiness'. In experiments conducting by Deutsch (1960b) that resembled the PD game but there were two stages, in the first one subjected selected a strategy and in the second stage the other player selected a strategy after revealing the choice of the first player. 'Trustingness; was related with cooperation in the first stage and 'trustworthiness' with cooperation in the second stage. High levels of trustiness are related with high levels of trustworthiness and each is negative related with authoritarianism.
Another solution in this category is related with the environmental conditions that might affect how individuals perceive other's payoffs (Kollock, 1998).

The most important finding is that communication has a positive influence on achieving greater cooperative outcomes (Orbell et al., 1990; Liebrand, 1984; Dawes et al., 1977).

Some possible reasons that can serve as explanation behind this positive effect of communication on cooperation were given by Messick & Brewer (1983):

1. Agents become more informed about the choices of the other person

2. Communication might lead both players to make commitments about their choices

3. Communication might lead to moral persuasion of the other part

4. Communication can establish a group identity between the two parties

Nevertheless, some critics exist especially for 2nd reason mentioned above as there are doubts about the credible influence it exerts on cooperation (Orbell et al., 1990). Moreover, Deutsch (1960a) through experiments indicated that communication was advancing cooperation in the case of individualistic players; for cooperative and competitive players there was no great difference in the way they played.

Group identity is considered as another factor that can contribute to the solution of social traps. As it is described by Kollock (1998) this factor can affect all three, motivational, strategic and structural solutions. There is vast amount of studies that can recognize the effect of group identity on cooperation even when no communication is present (Kramer & Brewer, 1984; 1986; Brewer & Kramer 1986). More precisely, players were willing to restrain their personal gains just because they have been identified as members of the group. As other studies have showed the interpretation of social dilemmas was connected with the identity of the opponent; taking the form of a PD if the opponent was a member of another group and the form of Assurance game if the other party was from the in-group (Kollock, 1998a,b). There is number of studies that have addressed the importance of intergroup competition that lead to cooperation (Bornstein et al., 1990; Rapoport et al., 1989; Sherif et al., 1961).

In another broader category of solutions are the strategic solutions. One of most important strategic solutions is reciprocity and it is connected with iterated social dilemmas. This solution is the most well-known strategic solutions first addressed in the wide known work of Axelrod (1984) who investigated the PD through a series of tournaments conducted by computers. The famous strategy tit-for-tat was submitted by Rappaport and was the winner both competitions organized by Axelrod (Davis, 1997).

Axelrod addressed some important aspects that should be present in the environment in order to facilitate cooperation in the PD:

- The relationship between the two partners should have some future; if they were just meeting for one time they would defect, if they would meet again cooperation had a slight chance to emerge

- The players must be able to identify each other

- A record of the past interactions must be available, so the players will be able to find the right motivation that might justify a cooperative behaviour or not

(Axelrod, 1984)

The tit-for-tat strategy was the most simple strategy of all submitted in the competition. In the first round it cooperated and in the rest it followed the same strategy that the opponent followed in the previous round (Kollock, 1998). As was articulated by Yamagishi (1995) there was a transformation of the repeated PD to a repeated Assurance game.

The main body of literature suggests that in an iterated game of Prisoners dilemma reputation and future interaction may lead to cooperation (Morris et al. 1998). It is valid to support that in real-life under later conditions the best strategy, that maximizes the outcomes for an individual, is cooperation. Empirical work with prominent that of Axelord (1984) has dictated that in repeated games people tend to use cooperation as the best strategy in Prisoner's dilemma games (Bendor et al., 1991, Kreps et al., 1982). However, there is some literature that supports not a computational approach of optimization from human beings but the idea that individuals are guided from heuristics that guide them in such real life social dilemmas (Bazerman et al., 1998).

It is important to mention the rules of thumb that have been give my Axelrod (1984) after the examination of all the strategies that competed in the tournaments:

- The player must not be envious playing the PD as a zero-sum game; being ready to be less competitive

- Do not be the first to deviate from cooperation by choosing to defect

- Reciprocate in any signal taken by your opponent

- Do not be too smart

(Axelrod, 1984)

Sometimes, there can be cooperation in one off PD games (Orbell & Dawes, 1993; Hayashi et al., 1999).

Nevertheless, the above prescriptions assume perfect information. In real life, the condition of imperfect information is the most important flaw of tit-for-tat is that is ready to punish in the first mistake (Kollock, 1993).

Another important strategy is the selection of the partner. Having the opportunity to select the partners or exit some of the on-going relationships allowed to other strategies that have been more forgiving to yield greater results (Hayashi, 1993).

Another strategic solution can be the 'grim triggers' that refers especially in the multi-person dilemmas. 'Grim triggers' is the strategy according to which 'each individual agrees to cooperate only on the condition that all others in the group cooperate' (Kollock, 1998, p.198). With this strategy free-riding can be avoided. Nevertheless, studies revealed that participants in experiments usually are reluctant to adopt this strategy (Watabe & Yamagishi, 1994) and ethnographic studies did not revealed any groups that use this strategy in real life (Ostrom et al., 1994).

A totally different method to solve the problem of social dilemmas was introduced by Macy (1991, 1993), it was the process called social learning. In his models actors do not decide purely according to rules and rationality, but he promoted a theory of social learning that would facilitate the solution of the social dilemmas. The factors that his studies revealed as crucial were the tendency of agents to copy the behaviour of others around them and the presence of thresholds that may exhibit pressure in order to solve the problem.

The last strategic solution is group reciprocity. As it was already mentioned the inclusion in a specific group (group identity) sometimes is just enough to achieve greater levels of altruism in this group, nevertheless Karp et al (1993) found something different. The increased level of support between the members of the group was not just altruism from a categorization but from the expectation that the members had for getting some reciprocity from other member in any future interdependencies that might arise.

A future belief about reciprocity from other members in the group works as a motive for agents to behave cooperatively; this intergroup-reciprocity motivates our decision even if not necessary (Brewer, 1981; Jin & Yamagishi, 1997; Watabe et al., 1996).

2.4.4 Structural Solution

A Structural solution focuses on changing the 'structure' of the social dilemma into such a way that will facilitate the application of some of the strategic solutions.

For example, creating the conditions for on-going relationships or interactions, as was addressed by Axelrod (1984), can be seen as a way to increase the tendency for cooperation. Moreover, transparency about the actions of the partners can be seen as another way to increase the levels of cooperation (Kollock, 1998). In addition, identifiability of the partner can be seen as way to behave in the right manner if the reputation of that partner is decent; anonymity many times leads to less cooperation (Fox & Guyer, 1978).

Another structural change that might induce players to cooperate is the composition of the payoffs of each scenario. A vast amount of studies have shown, that if the amount of payoffs from cooperating are much greater than defecting then the rate for cooperation is much higher (Isaac & Walker, 1988; Kamorita et al., 1980; Kelley & Gzelak, 1972).

Moreover, the way the public good is distributed may affect strategies of the players. If the nature of the public good tends to be indivisible can be a factor that facilitates cooperation (Alfano & Marwell, 1980). The event that the public good will be indivisible worked as an incentive to foster a group identity between the members.

Another structural change that might have a great result on advancing more cooperative solutions is to increase the level of importance of each player for achieving the final goal. In short, as Kollock (1998) addressed 'if a dilemma is structured in such a way that individuals can have a noticeable effect on the outcome- that is, they can make an efficacious contribution- cooperation rates can be increased. A refine design that would inform the individuals that are near the threshold might convince them to carry the extra burden in order to achieve the provision of the public good (van de Kragt et al., 1983). Others changes in the game that would induce cooperation by introducing a step-level function (a threshold point) or a group identity (Kollock, 1998; Bornstein et al. 1990).

A study by Kerr (1992) revealed that cooperation for public goods is more likely when there is a great impact of the individual's action. If your contribution in charities follows the procedure of 'matching grants', being doubled by a sponsor, you might be more willing to contribute. Many studies have addressed that some perception of the efficacy of one's actions can be sufficient in order to achieve cooperative outcomes (Rapoport et al.., 1989; Mueller & Opp, 1986).

As it was addressed in earlier years by Olson (1965), the size of the group can affect the participation in the contribution of the provision of the public good. In the same lines, many studies of the social dilemmas have found a negative correlation between the size of the group and the levels of cooperation (Kamorita & Lapworth, 1982; Fox & Guyer, 1977). Nevertheless, there are studies that showed the opposite effect (Yamagishi & Cook, 1993; Isaac et al., 1994). However, other studies addressed that some specific factors in the group (Ledyard, 1995) or the level of heterogeneity among the members of the group (Glance & Huberman, 1994).

Another structural solution that would be able to help achieving the joint outcome is to interfere with the trait of non-excludability of a pubic good, imposing a kind of boundaries to access of the good (Kollock, 1998).

In the famous study of Hardin (1968) about the tragedy of the commons, who proposed the same solution, it is mentioned that an unfair distribution can be better than a complete disaster if things are left in their own fate.

A kind of boundary can be the selection of a leader that will be in charge of over choices made by the individuals. Studies showed that groups that have been over-exploiting the commons, made the decision to change the structure of the dilemma and vote for a leader that would be the manager of the commons (Samuelson & Messick, 1986a; Messick et al. 1983). There are different trends on how to select a leader (Samuelson et al 1984). However, in situations where the individuals that were examined could find another structural solution they did not elect a leader (Samuelson & Messick, 1986b; Rutte & Wilke, 1985).

Privatization can be seen as another solution of the problem that arises with 'tragedy of the commons' as individuals will be more willing to look after their property (Messick & McClelland, 1983). Nevertheless, many problems arise that may lead to the same results as

the one from the original problem (Bromley, 1991). Ostrom (1990) argued that the participation of local authorities can be the solution into the problem.

Another solution was proposed by Dawes (1980). He argued that the main problem of the multi-person dilemmas is that there is no force that might affect the individual in order to guide his or her behaviour. Therefore, he addressed that a system of rewards (for those that cooperate) and sanctions (for those that defect) could lead to a solution of the problem (Dawes, 1980). This conclusion is similar with the 'selective incentives' used by Olson (1965) in order to provide a solution that would encourage collective action. Selective incentive is a prize (or sanction negative selective incentives) given to an individual that works as a temptation in order to contribute to the provision of the public good (Olson, 1965). Selective incentives in the form of monetary awards are quite effective, influencing behaviour of individuals to contribute in the provision of public goods (Maki et al., 1978).

The same effects can be generated by the ability that individuals might have to punish any individual that has deviated from the obligation towards the commons (Komorita, 1987, Kollock, 1998). In this kind of incentives the target is individual that does not comply with the collective good.

This method (sanctions-rewards) has two important problems. First, there must be a very good monitoring system that will track the behaviour of all individuals and as a consequence this system of rewards and punishments might be very costly (Hechter, 1984; Kollock, 1998). Monitoring all agents can be, as described in many studies in economics, an expensive procedure. Rewards, as monetary payoffs, can be a burden themselves and sanctions may call for the creation of an institution (e.g. Police force) to accommodate and monitor this task (Kollock, 1998). Nevertheless, there are studies which argue that under the right institutional framework the system of monitoring-sanctioning can be a reality without great costs (Ostrom, 1990). The system that is described by Ostrom (1990) is very similar with the modern legal framework that exists in most modern societies.

The second problem that is relevant with the monitoring and punishment system is that these institutional frameworks that provide monitoring and sanctioning are public goods themselves as everyone can enjoy their service even without contributing for their existence (Kollock, 1998). The police force will continue to work even if I do not contribute my share through taxation. This called second order public good and there is a debate why should

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people be willing to contribute for the provision of such a public good (Yamagishi, 1988; 1992). The findings revealed that there are considerable differences on how people behave when facing a first order dilemma and then a second order dilemma.

Negotiation analysis can use the game theoretic models either to resemble a crisis, or to seek for some inside for descriptive and prescriptive reasons. Game theory in negotiation analysis is used in order to resemble the problem that parties are facing. There is no aim to employ the models and test their validity according to the deductive approach. For example, Snyder and Diesing (1977: p.87) address that game theory being used for such descriptive reasons, has 'the limited role… depicting the structure of a crisis.'

Therefore it is fair to argue that Game theory has provided useful insight in order to analyse decision-theory upon negotiations on classic archetypes such as games in 2x2 matrices (Rapoport, 1966, 1974; Brams, 1975).

Expect from the classical examples of prisoner's dilemma and collective action problems that lead to suboptimal outcomes many authors addressed that negotiating under incomplete information may give an ex-post Pareto inefficient solution (Chattererjee, 1982, 1985; Myerson, 1979; Myerson & Satterthgwaite, 1983). As it is argued by Sebenius (1992a; p. 349) 'the full set of actual and potential players, interests, beliefs, issues, rules, alternatives to agreement, and agreements is often only imperfectly known, and even the character of what is known by one party is not known by the others.'

Negotiation analysis not an alternative of game theory and this misunderstanding should not be made by any scholar. Integrative agreements have similar traits with the cooperative outcomes in observed in Game theory. The players of the dyad could achieve a greater joint outcome, advancing social welfare, but probably their individual welfare too, by being more cooperative instead of than just seeking their personal gain (Dawes, 1980; Komorita & Park 1995; Van Lange et al., 1992). Bazerman et al., (1998) mention real-life examples where negotiators reach agreements that are mutual beneficial for both parties and outperform the proposed game theoretic solutions. However, in such complex models that depict real-life problems it 'is virtually impossible to get an accurate quantitative expression that will reflect the payoffs' (Davis, 1997), and therefore it might be better to employ some general non-technical findings that attempt to grasp human interaction. It is worth to remember that even if complete information exists there are games where inefficient results arise (Shelling, 1960).

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Therefore the adoption of the PD framework can be seen as an interesting choice in order to resemble the mixed motive interaction that is present in wage negotiations; as Lax and Sebenius (1986) did in their model called Negotiator's Dilemma.

2.5 Trust

In order to achieve a coordinated action, that will generate the desirable results, trust between agents is necessary. There is a vast body of literature arguing in favour of the beneficial effect trust has on facilitating coordination problems in either an interpersonal level or an institutional one (Shapiro, 1987, 1990; Granovetter, 1985; Zucker, 1986; Pennings & Woiceshyn, 1987). The definition of trust given by Lewicki and Wiethoff (2000, p. 87) presents trust 'an individual's belief in, and willingness to act on the basis of, the words, actions, and decisions of another.'

March and Olsen (1989, p.38) define trust as 'a confidence that appropriate behaviour can be expected most of the time.' Luhmann (1979) argues that trust not only influences beliefs about others, but it is used a pivotal basin of knowledge that affects our actions.
Boon and Holmes (1991; p.194) 'a state involving confident positive expectations about another's motives with respect to oneself in situations involving risk.' Many scholars argue that trust is the milestone for cooperation (Beranrd, 1938; Blau, 1964; Zucker; 1986).
However, it is essential to address that the notion of trust, how it is functioning, and the way it is developed, is primary a theme of research in the field of psychology and sociology (Johnson-George & Swap, 1982; Rempel et al. 1985; Lewis and Wiegart, 1985; Shapiro 1990; Zucker, 1986)

Whenever there is a considerable amount of complexity or uncertainty, the necessary coordinated behaviour in order to achieve the mutual beneficial result is achieved through confidence and trust (Thompson, 1967). Therefore, it is necessary for managers and employees to develop a level of trust among them. Managers need to facilitate trust to their subordinates thus, is vital in order to run effectively an organization such as a firm (McAllister, 1995; Gabbaro, 1990; Sayles, 1979). Moreover, a widely accepted assumption about the role of relations that are based on trust is that it facilitates coordinated action (Arrow, 1974; Williamson, 1975).

Trust is crucial for agents that undertake tasks that entail a considerable amount of risk. For instance, in a perfect competitive world there is no need for advance levels of trust as agents have complete information without any external risks. Therefore, trust is needed in risk endeavours in order to avoid inconvenient situation that might lead to regret the task that has been undertaken (Porter et al., 1975; Deutsch, 1973)

Moreover, trust is highly connected with the personal traits of human personality such as reliability and responsibility (Cook & Wall, 1980; Barber, 1983; Shapiro, 1990). However, trust most of the times it is a notion that leads people to think about the others decisions. More precisely, they examine how the actions of the counterpart, will influence them rather than on if what these people are doing is correct according to the norms that prescribe their actions (McAllister, 1995). Moreover, the definition of trust is determined by the credibility agents assign on future actions of others with the help of knowledge (Luhmann, 1979). Thus, an decisive factor that influences the level of trust that will be achieved among negotiators is how much they focus on the future (Thompson, 2012).

It follows that the more the agents focus on the future the greater the trust that will be achieved among negotiators. Future interactions imply that people will be willing to approach the negotiation task with a friendlier mood. This will have as a consequence often the adoption of negotiation strategies that accommodate win-win solutions. More precisely, people that foresee future interaction are more prone to achieve mutual agreements and more often they align their expectations about the final outcomes of the negotiation process.

Relatively to the descriptive approach to negotiations we can classify trust in a relationship into three categories:

- Calculus-based trust

- Knowledge based trust and

- Identification-based trust

(Thompson, 2012)

The first type of trust is called 'deterrence-based trust' or 'calculus-based trust'. Trust in this situation has similar characteristics with the functional aims of transaction cost economics and principal agent theory; sanctions and rewards are the key drivers of its development. "Deterrence-based trust" is connected with legal binding clauses and monitoring in order to achieve a functional level of such a kind of trust (Thompson, 2012). In order to achieve a credible threat the potential losses from losing a relationship must be greater than the gains that the defector will enjoy by opting out from the relationship (Lewicki & Bunker, 1996).

As in principal-agent theory, the continuous productive of such a relationship is fragile because there are high monitoring costs and often monitoring can initiate the inverse results from the purpose originally adopted.

The response of agents that have to comply with the authoritative mandate may be in the counterproductive direction. This negative response is called 'reactance arousal,' and indicates that individuals show some resistance when their freedom is threatened or curtailed and even they may attempt to regain what was lost due to an authoritative mandate (Brehm, 1966; Brehm & Brehm 1966; Wicklund & Brehm, 1968, Brehm & Brehm, 1981).

As stated by Brehm and Brehm (1966), the higher level of the authority that dictates the mandate, the higher the reactance effect on the individual that has to comply with it. Of course, the latter is connected with the credibility of the threat. Evidence for supporting the existence of this effect emerge from experiments on vandalisms on walls that people commit under pressure from threat and authoritative dictates that call for not painting on them (Pennebaker & Sanders, 1976).

Calculus based trust is a deterrence based trust as it is not only concerned with punishment but also with the rewards for securing the existence of trust. More often it is connected with professional relationships and is driven not by self-fulfilment or personal satisfaction but due to job obligations. By the same token as with deterrence based trust, matters concerned with reputation are of extreme importance under this type of trust. Under 'calculus based trust', levels of trust are accumulated with low pace and are really fragile as this amount of trust can be easily lost by an abrupt irruption of the procedure by a mistake (Lewicki & Wiethoff, 2000). Controlling the behaviour of the agents is vital in order to foster Calculus-Based trust. A classic metaphor in order to explain growth of Calculus-based trust is as climbing

mountains where parties have to coordinate their actions and reveal their weaknesses to each other in order to achieve the desirable outcome (Lewicki & Bunker, 1996).

A second category on which trust can be classified is the one based on a considerable amount of information and credible evidence in order to understand or even predict future behaviour of your counterpart (Thompson, 2012; Lewicki & Bunker, 1996). This type of trust is known as 'knowledge based' trust. The, understanding between agents is fostered by iterative interactions, and communication that has as a result to strengthen the relationship between them (Lewicki & Bunker, 1996). Information collecting is the driving power of trust which in turn is assessed by common practices; taking always into account the context within the future actions will take place.

In order to have this kind of trust to flourish in a relationship a certain degree of uncertainty is necessary to be present on the task that the two counterparts are conducting (Thibaut & Kelley, 1959; Kollock, 1994). Trust, under this theme, is a necessary consequence of the market imperfection of the world that people are living in (Kollock, 1994; Granovetter, 1973). Thus, markets that are characterized by information asymmetry usually create the basis of knowledge-based trust. In a second stage besides from economic dependency, emotional ties may arise after some time (Kollock, 1994) and then there will be even less tendency to abandon the relationship in favour of a competitor (Sondak & Moore, 1994). Notably, knowledge-based trust leads to greater commitment and dependence among the two agents that participate in an exchange (Dwyer et al., 1987).

Marlowe, Gergen, and Doob (1966) argue that this kind of trust often leads to fewer instances of exploitation in a relationship than the other forms. Moreover, knowledge-based trust often is the key facilitator of a deeper integrative solution 'culture' among negotiators compared with the rest types of trust (Mannix, et al., 1995).

Another type of trust, under which agents usually adopt without objections the preferences of their counterparts, is called "Identification-based" trust (Thompson, 2012; Lewicki & Bunker, 1996). This type of trust is based on common values between the agents that enjoy an emotional bonding with each other goals (Thompson, 2012). This type of trust is commonly developed in personal relationships and parties develop a significant

understanding of each other. There is a considerable level of endorsement between the agents that develop this kind of trust.

Nevertheless, Lewicki and Wiethoff (2000) argue that if this type of trust flourishes in professional relationships then it will have as a consequence higher effectiveness of the group this will be due to understanding between team members will increase and expectations about the needs to achieve the goals will be easier clarified. Group members might perceive a common identity and start aiming for joint goals (Lewicki & Bunker, 1996). All scholars argue that 'identification based trust' leads to a fully harmonize actions and the intentions with the other agent so easily the counterpart can act on his or her behalf. Agents feel as their counterparts and respond to like being one unit as long as they have common interests, values and preferences (Lewicki & Bunker, 1996).

The most common path of evolution that trust follows can be summarized in the following steps. As expected usually a relationship starts from a calculus based trust state where both parties rely on rewards and punishment in order to have a maintain their relationship, then it might mature to knowledge based trust and sometimes as a final stage it might evolve to identification based trust bringing the two counterparts closer. The transit from one type of trust to another is connected with the perceptions of similarity; therefore differences between the two parties involved in the relationship.

Nevertheless, there are cases especially in legal and professional relationships that do not progress further from the stage of Calculus-based trust as there is no desire, time or willingness to proceed in a deeper understanding of the relationship (Lewicki & Bunker, 1996). If we take into account the complexity of modern networks; it is logical to understand that some relationships should not go further from an arm-length transaction.

Another facet of Calculus based trust that hinders evolutions to other types of trust is the fact that in professional relationships, it acts as a safeguard for the counterpart that can be used in order to object the relationship due to violations of trust (Lewikci & Bunker. 1996). Therefore, people often prefer to maintain some relationships under the governance of Calculus-based trust regimes in order to achieve some degree of effectiveness without deeper personal involvement.

On the process of transition from the one type to the other, there might be a period that an overlap between two types of trust may occur and elements of both types may coexist on different aspects of the relationship. It is worth mentioning that only a small number of relationships succeed in reaching the final stage of identification trust revealing the low levels of non-institutionalized trust that exists in modern societies (Lewicki & Bunker, 1996).

In the literature on building trust between agents two prominent routes can be identified, the cognitive route and the affective route (McAlister, 1995; Lewis & Weigert. 1985; Olekalns & Smith, 2005). Each route follows a district pattern during a negotiation task and has as a consequence different turning points.

On the one hand, the cognitive route is based on rational thinking and calculations and on the other hand, the affective route on emotion and intuition.According to this division of routes scholars have divided trust into two categories the cognitive-based trust and the affective-based trust.

Cognitive based trust is under successful precious interaction and through contexts of social similarity of the agents (Zucker, 1986). Trustworthiness under this kind of trust follows the norms of reciprocity and fairness and relies on acceptable past behaviour of the peers (Lindskold, 1978; Cook & Wall, 1980; Stack 1988; Granovetter, 1985). In particular, productivity of peers and reliability is a key attribute to build this kind of trust among agents in an organization. The dimension of social similarity of cognitive based trust is related with different forms such as ethnic background (Light, 1984) or other objective criteria such as race, age, and gender (Turner, 1987). Likewise, Griffin and Sparks (1990) argue that people that are similar have positive emotions for each other. The power of similarity has a negative effect on the people that do not belong to the group. Brewer's (1979) results revealed that negative perception about the out-group members usually prevail among people that belong to the same group.

Organizational forms of hierarchy through formal specification create the conditions for trust in professional relationships (Baier, 1986; Fox, 1974). This is very important in order to guarantee the harmony of the economic transaction and the internalization of the process.

Affect-based trust steams from an attempt to prescribe with norms that are socially accepted showing excess care for others than self-interest seeking behaviour (Clark & Mills, 1979; Clark et al., 1986; Clark & Waddell, 1985). The aforementioned behaviour is described in organization theory as organizational citizenship behaviour (Organ, 1988). It is an altruistic behaviour inside the firm that is not connected with extra rewards, however, facilitates the effective function of the organization. Sometimes individuals have an inherent intention to be helpful to face-to-face activities (Smith et al., 1983). Altruistic behaviour can be seen as the basis of affect-base trust (McAllister, 1995). Behaving according to the aforementioned way is not something that can easily be interpreted as self-interest seeking behaviour (Mackenzie, 1991).

To sum up, it is essential to address that trust is an extremely vital element in order to facilitate integrative agreements between negotiations. It may be developed through different concepts and can be based on different grounds; however, it can provide the common ground for negotiators in order to achieve a win-win result.

2.6 Institutions and Institutionalism

Institutions is modern societies can have a variety of meanings. As it is addressed by Groenewegen, Spithoven and Van den Berg (2010) institutions are perceived by the society as:

1. An established organization

2. The building in which an organization is housed; or

3. A custom, practice or rule

(Groenewegen et al., 2010; p.24)

The first attributed meaning to institutions is the one that is most often encountered in everyday life. For example, this category includes what is known as 'international institutions' such as the World Trade Organization or 'financial institutions' such as the banks and the International Monetary Fund. The second meaning refers to the places that might deliver an important role for the society such as the nursing houses or other places

where poor people might found shelter. Nevertheless, in social sciences the use of the 'institutions' refers to norms represent formal and informal rules which affect the behaviour of the individuals. As North (1991) underlines, 'institutions are humanly devised constraints that structure political, economic and social interaction.'

Institutions can be distinguished in formal and informal. On the hand formal institutions are generated from the public with most prominent the legal framework and are enforced through authoritative power, on the other hand informal institutions are produced by private rules and do not need formal enforcement as the member of the society have a self-interest to follow them (Groenewegen et al., 2010)

In each society there are different kinds of formal and informal institutions which contain a variety of values, norms, laws and rules constructing a specific institutional environment each time (Williamson, 2000; North, 1990). The components (values, norms, laws and rules) that construct the institutional environment depict a hierarchy from the most general to the most specific (Groenewegen et al., 2010).

It is important to bear in mind that the most prominent mission of institutions is to minimize uncertainties and facilitate economic actors to take efficient decisions (North, 1990; Greif, 2006). In real life economic transactions are accompanied with costs that are known as 'transaction' costs which hinder the achievement of the results of the orthodox economic theory. Ronald Coase (1960) addressed that minimizing transaction costs, property rights should be assigned property rights. The value of exchange of each attribute assigned to goods and services should be defined, but this creates the need for information in order to find out if the values is the real one; this generates extra costs (North, 1991).

The need for institutional constrains arises as self-interest behaviour will not be able to precede with very complex exchange tasks (North, 1990, 1991).

There can be self-enforcement or as retaliation from the two parties that participation the transaction or by a third party that is monitoring the exchange (such as the state) (North, 1991). Thus, self-enforcement is crucial. Another important aspect of transactions is reputation which is necessary in order to engage in future transactions. Nevertheless, all the costs that arise from the self-enforcing mechanisms call for a monitoring agents as it was

described in 'social dilemmas.' Neither self-enforcement nor trust generated by a third party can be completely successful as there are always some positive transaction costs.

Institutions according to Lowndes (1996) have the some special characteristics that attribute in order to capture a valid definition:

1. *Institutions is middle-level (or 'meso') concept;* they affect everyday life despite being perceived as a wider social concept facilitating cooperation but also imposing constraints to human behaviour

2. *Institutions have formal and informal aspects;* these two kinds of institutions are generated by a different procedure, formal institutions are being generated under careful consideration and design but informal institutions are the result of customs and norms that might affect the process of doing something in the society

3. *Institutions have a legitimacy and show stability over time;* they prevail over the individual's preferences and their legitimacy derives from their persistence in time and their links with the 'sense of place' regardless the specific situations at stake

<div align="right">(Lowndes, 1996)</div>

In order to analyse the impact of institutions on economic behaviour and economic outcomes this study will focus on two theoretical streams: New Institutionalism from political theory and New Institutional Economics from Economics.

2.6.1 New Institutionalism

New Institutionalism is divided into different approaches which were developed emerged from political science, economics and organization theory.
The common characteristic in of new institutionalism in each approach is 'the commitment to the significance of institutional arrangements and a common criticism of atomistic accounts of social processes' (Lowdnes, 1996, p.183).

2.6.2 Political Science

There are three broad school of NI in political science according to Hall and Taylor (1996); historical institutionalism, rational choice institutionalism, and social institutionalism. Old approaches, behaviourism and public choice theory, handled institutions as the sum of individual actions (Lowdnes, 1996). Nevertheless, as it was argued by DiMaggio and Powell (1991; p.5) NI is 'a reaction to atomistic accounts of political behaviour and asocial accounts of the context in which behaviour occurs' and this approach has as an aim to offer more than the old descriptive approach of institutions.

A common feature of the three school of NI in political science is that they focus mainly on what was described by North (1990) as the 'rules of the game' which exhibit great effects on the political behaviour.

Historical institutionalism was created as a counter argument to the popular group theories in politics during the 1970s (Steinmo, 1992). Its main purpose was to explain the difference on political outcomes in some countries, taking into account the conflict among groups of interest (Chilcote, 1981). Therefore, the main goal of this stream was to define how institutions privilege some interest and other not (Hall & Taylor, 1996). Thus, institutions were the main factor that stimulating a specific collective behaviour. 'Structuralism' was the building block of historical institutionalism rather than elements of 'functionalism' (Block, 1987). A summary of the distinctive features of historical institutionalism would be the following:

1) It describes in broad terms the relation between institutions and individual's actions

2) The asymmetric power relations that are relevant to institution development have a prominent position in it

3) Path dependence has a key position in the development of institutions, taking into account historical developments

4) It connects institutions with other factors that influence outcomes such as ideas

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It is obvious from the abovementioned characteristic that historical institutionalists draw their attention not only to institutions but also to other factors that act as causal forces that influence political outcomes such as the 'critical junctures' in history which reshape institutions and unfold new paths of interaction (Krasner, 1984).

2.6.3 Rational Choice Institutionalism

Rational choice institutionalism is another stream of new institutionalism in political economy. This stream of NI is relevant with the notions of new economics of organizations that underline transaction costs in exchanges and the importance of assigning property rights in order to facilitate exchanges (Moe, 1984; North, 1991; Groenewegen et al., 2010). This would be achieved through the development of the right kind of institutions. The main purpose of the presence of institutions in this stream is to facilitate some exchanges with less transaction costs compared with the transaction costs that would occur without these institutions (Williamson, 1985). This approach is relevant with 'principal-agent' theories that employ monitoring and sanctioning process in order agents to comply with the principals (Miligrom & Roberts, 1992; Pratt & Zeckhauser, 1991). The political behaviour of many organizations is examined by the point of view of rational choice institutionalism and despite the different examples some common characteristic of all these studies could be addressed.

1. Agents are guided by self-interests and rationality according to fixed preferences behaving in a strategic way in order to achieve their goals (Shepsle & Weigast, 1987).

2. The scholars of this stream perceive politics as a set of social dilemmas that the lack of the right institutions in conjunction with the first characteristic would not allow the achievement of optimal results; nevertheless institutions solve political problems similar to the 'PD' or the 'Tragedy of commons' (Hardin, 1968; 1982).

3. The strategic interactions among these rational agents are emphasized in this stream and institutions have as their mission to reduced uncertainty in order to help agents to

calculate more accurate their expected gains from this interaction (Hall and Talyor, 1996).

4. Institutions originate from agreements between actors who want reap the benefits generated from these institutions; specific institutions survive as they are more effective in providing the relevant benefits to the actors (Hall and Taylor, 1996).

To sum up, according to this stream of Institutionalism the structure of any institution or firm has as a main purpose to minimize the transaction and production costs following the lines of the Coase theorem (Coase, 1960; Williamson, 1985; Milgrom & Roberts, 1990)

2.6.4 Institutional Sociology

This school of thought is the branch of new institutionalism that was developed in the premises of sociology. In this approach institutions originate from culture differences and not from the need to facilitate some specific exchanges or accommodate rational calculations. This stream connects organizational structures with cultural norms and practices that steam from the society (Meyer & Rowan, 1977; Di Maggio & Powell, 1991; Dobbin, 1994).

The main concern is how these cultural practices spread across different kinds of institutional structures (Hall & Taylor, 1996).

This stream of institutionalism has some special characteristics which are the following:

1. Institutions are something broader than rules and procedures as they include symbols, moral codes, and cognitive frames that lead human action; as a consequence culture becomes a synonym of institutions (Zucker, 1991) and organizational structure can be explained by culture (Almond & Verba, 1963).

2. Institutions, being affected by the notion of social constructivism, affect individuals not only by influencing their calculations but by constructing their vary identity influencing the way they perceive specific signs and norms (Swidler, 1986; Berger & Luckmann, 1966).

3. Actors in sociological institutionalism participating in acts that are aligned with a specific reasoning that steams from the available institutions; rationality of actors is perceived as a broader way being expressed with the accepted sociological ways (Hall & Taylor, 1996).

4. The establishment and development of institutions originates from social legitimacy of the institutions or its participants; matching its processes with the cultural values gaining legitimacy by the 'logic of social appropriateness' (March & Olsen, 2004).

To sum up, institutions in this point of view are considered specific cognitive and cultural maps that are followed most members of the society. A sense of legitimacy towards these institutions derives from the aforementioned process. Share values of the participants drive the creation and maintenance of institutions under this stream.

2.6.5 Economics

In the orthodox economic theory, the institutional framework was taken as an exogenous and fixed (Lowndes, 1996). With the emergence of 'Institutional Economics' an acute criticism towards the stance that the neo-classical economic theory held towards institution was made (Gruchy, 1972). Many scholars like Myrdal, Veblen, and Commons have been the pioneers on addressing that the expected economic outcomes might be influenced by institutions and therefore multidisciplinary approach should be employed in order to understand economic outcomes as they are not produced in institutional vacuum (Groenewegen et al., 2010; Lowndes, 1996). Therefore, according to vast amount of studies, with most important the one of Williamson (1975; 1985), institutions have been encountered as factor within economic activity.

Old Institutional Economics have a holistic approach for formal and informal institutions as institutions are interpreted as a societal system that can be divided into subsections that interact with each other (Wilber & Harrison, 1978).
New institutional economics still assume that economic actors are driven by self-interested utility maximizing behaviour but they are characterized by bounded rationality

(Groenewegen et al., 2010). Therefore institutions are necessary in order to overcome the limitations of the capacity of individuals to overcome inefficiencies related to incomplete information and the enforcement of agreements (Lowndes, 1996).

Given the institutional framework, agents choose an efficient governance structure to facilitate an economic transaction; therefore we can argue that this governance structure represents equilibrium (Groenewege et al., 2010). An exogenous shock might change this equilibrium leading to a different mechanism that coordinates the transaction. This can lead to a comparative study due to the static equilibrium approach apparent in New Institutional Economics. The main assumption upon which institutions find their reason of existence is that the benefits that these institutional arrangements generate exceed the costs of setting them up and maintain them (Lowndes, 1996).

2.6.6 Organization Theory

New institutionalism as part of organization theory has as a basis a totally different approach. Organizational theorists address that institutions are the product of human interaction nevertheless without a strict rational instrumental manner as defined in institutional economics (DiMaggio & Powell 1991). Organization theory has addressed an important distinction, between 'administration' and 'institutionalization' which was relevant to the creation of institutions (Selznick, 1957). 'Administration' was more concerned with efficiency of the created institutions and 'institutionalization' is related with the values of the group or the society in which it is created (Perrow, 1986). This approach has many common characteristics with institutional sociology that was described in the previous section of political science. As the scholars that support the old stream of this field claim that organizations represent the values of the members and their communities, new institutionalists address that organizations reflect the pervasive 'mythical elements' and the widely accepted 'social templates' of the society (Lowndes, 1996).

It is important to mention the role that institutions conduct incorporating elements from all the aforementioned disciplines. A very interesting presentation of the wider influence that institutions exert on social life and social change is given by Lowndes (1996) with the

famous 'six vignettes' of institutions. These 'vignettes' are accompanied by particular functions and characteristics that influence research analysis accordingly.

1) *Mythic* institution: The creation of institutions which address the symbolic and mythic traits of the society giving priority to how things used to be done in a society; therefore organizations reflect the moral values and myths of the environment in which they are developed.

2) *Efficient* institution: the main purpose of institutions is to minimize the transaction costs through hierarchical frameworks; internalization of the process of exchanges has a prominent position in this vignette.

3) *Stable* institution: Except efficiency, institutions usually promote stability that allows agents to act according their traditions achieving the necessary harmony in order to achieve considerable economic outputs

4) *Manipulated* institution: This term refers to institutions that are created from a specific social group in order to promote its interest; for example political institutions may have a manipulated form that advances the interests of specific political actors.

5) *Disaggregated* institution: this vignette is concerned more with the way governance is organized; addressing the important aspect of policy networks and routinized relationships in policy making.

6) *Appropriate* institution: refers to the institutions that express the 'logic of appropriateness' as they incorporate norms that depict the historical experience attempts to simplify decision making behaviour.

(Lowndes, 1996)

2.6.7 Centralization and Coordination

It is important to address the different approaches that exist on the literature regarding the impact of institutions on wage bargaining. Wage bargaining can take the form of a social dilemma as it is not guarantee that the unions will be interested only on real variables and not the nominal outcome. This is connected with the monetary policy adopted by the government. An expansionary policy (accommodating rule) will restrict the effect of real money supply of increased wages and prices, so the need from the Unions to restrain their demands will be less. On the contrary if a policy is non-accommodating then inflationary demands will be reduce real money and thus, this can work as an incentive will force wage negotiators to restraint themselves. Therefore, systems that have a degree of centralization, and adopt a restrictive monetary policy can avoid the collective action problem that each negotiation between employers and employees encounter (Carlin & Soskice, 1990)

Therefore the whole process can be seen as multi-player Prisoners Dilemma were self-interesting behaviour from each union leads to worse outcomes (Lange, 1984). According to Iversen (1999; p. 2) 'the capacity of unions to act in the collective interest increases with centralization' thus, centralization can limit the need for restrictive monetary policies. In neo-corporatism there is the view that bargaining performance is highly correlated with centralization following a hump-shaped relationship between unemployment and centralization showing that the two extremes (very decentralized and very centralized systems) perform better (Calmfors & Driffil, 1988). Soskice (1990) argued that the degree of coordination combined with local pushfulness on wages can affect the solution of the Social dilemma which is apparent in wage bargaining.

2.6.8 Conclusion

From reviewing the above literature interesting facts relevant to integrative negotiations emerged. The unexplored premises that exist in defining a roadmap to achieve integrative agreements in negotiations between Labour and Management acted as the key incentive to work on development of a theoretical framework that would try to ease this aim. Interesting findings, from all the above mentioned fields have been used as the building blocks of the proposed theory of this thesis. The main purpose of this theory is to promote integrative

solutions by fostering trust between the two parties. This target could be achieved by defining, first, set-of-important variables that influence negotiations between labour and management. Therefore, in alignment with the deductive approach, a combination of elements from the above literature was used in order to construct the proposed theory. As consequence two research questions derived that upon which the proposed theory and its results were tested for their validity:

RQ1: Which are the most important variables that influence negotiators in negotiations tasks between Labour and Management?

RQ2: Does the proposed theory via the use of a 'Decision Support System' foster trust between negotiators in Labour-Management disputes, facilitating integrative agreements?

The proposed theory that was developed for the purpose of this research will be presented in the next chapter of the thesis.

3. Proposed Theory

3.1 Introduction

The orthodox economic theory has difficulties in explaining some differences that exist in the wage-determination in the labour market giving the opportunity to other explanations, mainly from the field of industrial relations to emerge. As it pointed out by Blyton et al. (2008) there is a consensus among the dissenters that considerable deviations between neoclassical economics and reality exist; for example, perfect competition for firms and workers is most of the times not present in real life. Especially, for the pay-setting procedures some scholars (Rubery, 1997; Manning, 2003) are more sceptical as they object that this procedure is a valid approximation of real life processes because it gives remarkable credit to the market forces in order to determine the final outcome.

As it is stated in the fields of negotiation analysis, and industrial relations, the fact that a personal trait is involved in the process of wage determination leads to the result that 'wages may be critically influenced by norms, social institutions, and political processes' (Blyton et al., 2008; p. 498).

In this research, the is objective is to propose a theoretical framework that would achieve, with the help of a 'Decision Support System' and by assessing the relations among the most important variables that influence negotiations on Labour-Management disputes, to foster trust among negotiators. The theoretical framework that would underpin the development of a Decision Support System which, in turn, will be used in order to provide slightly biased estimates on the final result of negotiations between management and labour. With the term 'slightly biased' the following tendency is implied: when the environmental conditions, according to the proposed theory, favour a cooperative result, the system will promote the integrative agreement (P1) (see in Table 2) in order to foster trust. Trust is perceived with a sense of a common ground that will be the result of a 'positive anchoring' on the prediction of the system.

The estimation will reveal the probability that the final agreement is the outcome of a combination of cooperative or non-cooperative strategies. Thus, the final agreement can be the result of the following strategy combinations:

- Cooperative strategy from both Labour and Management

- Cooperative strategy from the side of Labour and Non-Cooperative Strategy from the side of Management

- Non-Cooperative strategy from the side of Labour and Cooperative from the side of Management

- Non-Cooperative strategy from both parties

These two aforementioned strategies represent the available strategies of each party in a game that resembles a social dilemma of two players that has the form of the PD. If there is a union that participates in the negotiations, this research assumes that there are no intragroup differences that might create problems on defining the appropriate strategy. Therefore, it might be helpful to assume the union as a composition of identical members a method widely used by scholars in order to represent homogeneous union preferences (MacDonald & Solow, 1981; Dréze & Modigliani 1981; Oswald, 1982).

This thesis has as a goal to propose a theory which will follow the general framework as shown in Figure 3 below:
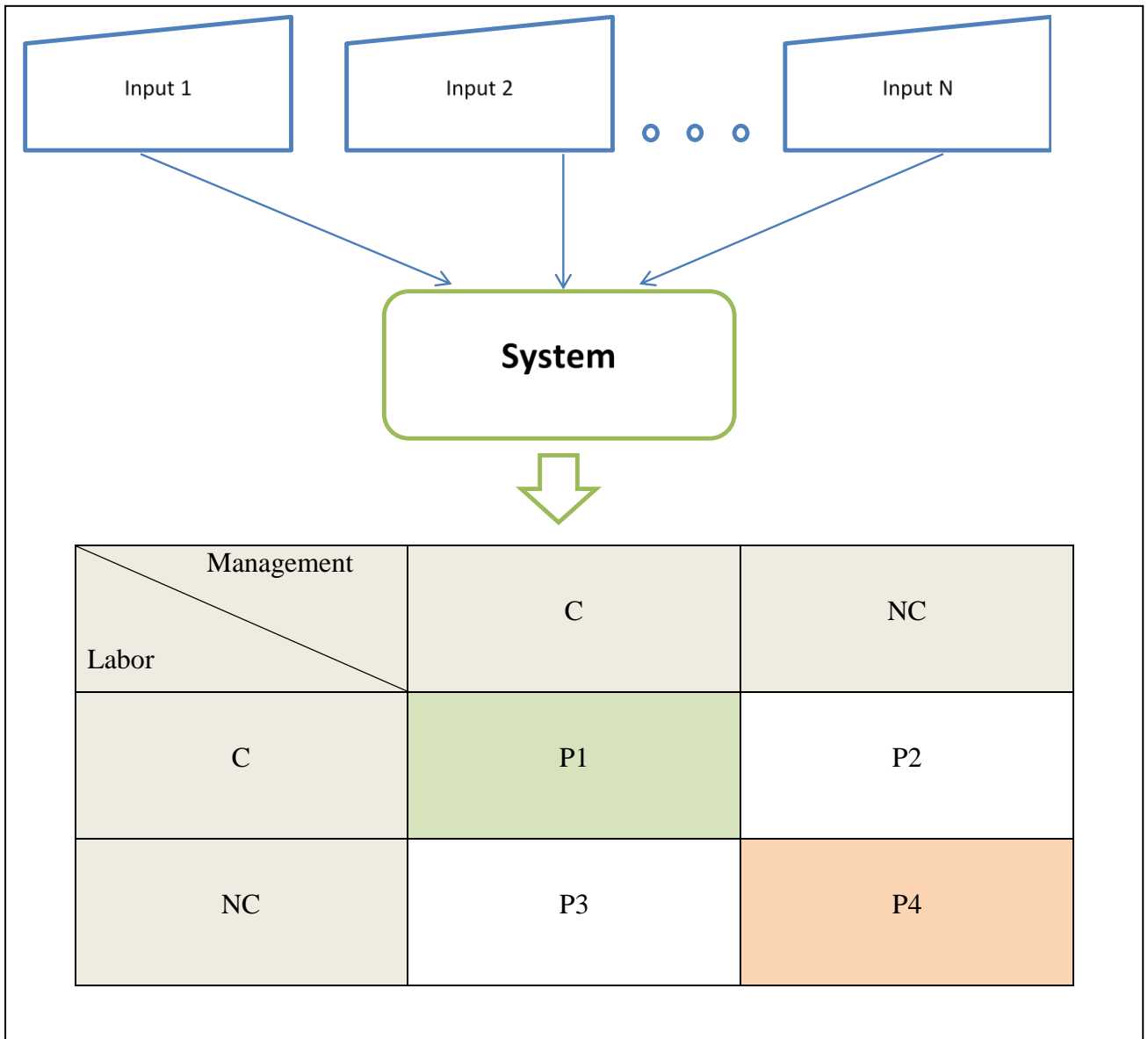
Figure 3: The General Framework of the Proposed Theory

The theory will be constituted by a number of input variables that will be governed by a set of rules (system). The interaction of these variables according to the rules and their assigned values will generate four outcomes P1, P2, P3 and P4. These outcomes will represent estimation of the respective probability that the final agreement of the negotiation task will be in one of the four cells of a 2x2 matrix. Thus, it will reveal an estimation of what kind of strategy will be adopted by the two parties. The available strategies for each party are 'Cooperation' and 'Non-Cooperation'

3.2 Variables Used in the Proposed Theory

In this section the variables that constitute the inputs of the proposed theory are presented. These variables were selected, through a thorough review of the literature. As a matter of fact, they have been perceived by the researcher as extremely influential to the negotiations tasks relevant to labour-management disputes. The general effects that these variables exert on the final outcomes will be addressed in this section.

3.2.1 Unemployment Rate

The 'Unemployment rate' is one of the variables that were selected in order to be part of the system. Due to the negative impact that unemployment exerts on the economic environment and especially to the employees this variable favours less cooperative results that are closer to distributive agreements. Thus, a higher value in the unemployment rate will favour the employers and the non-cooperative solutions.

A negative relation between unemployment and inflation was introduced by Phillips (1958). This idea, known as the 'Phillips Curve', exhibited great influence on economic theory for many years. The Phillips curve is depicting 'a trade-off in which a fall in the unemployment rate can be achieved, in the short run, by an acceleration of inflation' (Cahuc and Zylberberg, 2004; p. 491). As a matter of fact, this finding argued in favour of a negative relation between inflation and unemployment.

Nevertheless, after the stagflation that was observed in the Western Economies in the mid-1970s, the 'Phillips Curve' was contested with most prominent the work of Friedman (1968; 1970; 1977) and Lucas (1972) who proved that it was not something more than a coincidence. The main findings of this new proof was that 'in the long-run, the equilibrium unemployment rate is equal to the NAIRU (the Nonaccelerating Inflation Rate of Unemployment), and this trade-off (between inflation-unemployment rate) disappears' (Cahuc & Zylberberg, 2004; p. 491). The assumptions of adaptive expectations about the inflation rate (Friedman, 1968) and the rational expectations (Lucas, 1972), induced a paradigm shift in economics; calling for a new perception towards the relation of unemployment and inflation.

Moreover, Blanchflower and Oswald (2003) with their empirical findings addressed that often we observe the reverse from the theoretical prescriptions that higher wage levels are associated with greater unemployment (ceteris paribus). In a theoretical basis connected with the aforementioned debate, Dunlop (1988) asserts that unemployment has little if any role to play in influencing wage reduction, except small establishments.

Margolis (1999) showed that workers that return in employment after a year receive a new wage that is lower by 25% on average, than the one that they would get if they had kept their initial job. Moreover, empirical studies addressed that people that are long-term unemployed tend to have deteriorating employability as they keep on being unemployed (Machin & Manning, 1999). These findings can be used as additional arguments for supporting the negative influence that unemployment often exerts on current employees who are 'threatened' by high unemployment rates.

There is a relationship between the level of wages and the unemployment rate, different than the wage growth rate and the unemployment rate, as described by the Phillips curve (Cahuc & Zylberberg, 2000). As was showed by Blanchflower and Oswald (1995) wage-setting is related with the reservation wage, which, in turn, depends on the exit rate from unemployment, which subsequently is related with the unemployment rate. According to these findings, a negative relation exists between unemployment rate and the wage level. This result is applied widely in different studies (Blanchard & Katz, 1999) revealing that unemployment is an important factor that has to be taken into account in the bargaining models, and thus in the negotiation task.

So the labour demand is reacting in change on wage (wage elasticity) and wage response to unemployment elasticity of the wage rate; unemployment elasticity represents the willingness of labour to restrain wages in the event of unemployment (Siebert, 1997). Thus, any indication of disequilibrium creates the need for correction in real wages. Therefore it is valid to argue that 'rent sharing take concrete form in wage bargaining, and entails a negative relationship between unemployment rate and the wage negotiated (Cahun & Zylberberg, 2000, p.557).

The aforementioned examples that relate unemployment and wage setting reveal that negotiators have to take into account the current unemployment rate when negotiating on all matters affecting the employees. The shadow of unemployment, when it is casted over the negotiation process, has a negative effect to the final outcome.

3.2.2 Inflation Rate

The 'Inflation rate' is the second input variable that is used in the proposed theory. The inflation rate because of its important influence on wage bargaining and the power it exerts on shaping the expectations of the economic agents is has a slightly negative relation with the generated outcomes. As it will be shown in the following section, when it has a high value assigned it pushes the results towards the non-cooperative outcome and when it has low value it drives the outcomes towards the cooperative result.

The influence that inflation exerts on negotiations is beyond dispute. In order to calculate the real income, inflation has to be taken into account and be removed from the nominal income. The real values of a wage represent the purchasing power of a nominal wage.

There are findings that address the prominent influence of inflation, in wage-negotiations, as a catch up factor. It is known that payment-setting behaviour takes into account the last period's inflation rate in order to compensate for real wage losses from unexpected increase of the inflation in the past period (Carlin & Soskice, 1990). Both management and labour often provide estimates on future inflation in order to define the capabilities of the firm for future negotiations (Klay, 1981). Any system of wage indexation has to incorporated wage fluctuations that reflected changes in the purchasing power in order to be more valid. It is obvious inflation is very important for negotiations, especially for the part of wage bargaining.

Despite the rational expectation that the models of monetary economics describe, there is an uncertainty among the two parties. Some degree of this uncertainty can be attributed to inflation. Speculations about the nominal wage that is appropriate during negotiations might arise. As it is stated by Klay (1981; p. 521) 'the uncertainty caused by inflation creates a situation in which neither side knows the true value or future cost of a settlement, and this

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uncertainty complicates the development of sound bargaining relationships' attributing a crucial role to inflation rate as a factor that influences the behaviour of negotiators during wage-setting. Therefore, it can be argued that expectations as addressed by the supporters of the neo-liberal economics have a crucial role in shaping economic behaviour (Carlin & Soskice, 1990).

The argument can be reversed in order to underline the importance of inflation. Governments, under the paradigm of monetary economics, attempt to focus on prudent fiscal and monetary policies in order to control inflationary pressures. This has a real impact on the income policies applied in the public sector, as governments have extra concern not to push for wage increases above productivity that would exert extra inflationary pressure (Blyton et al., 2008; Carlin & Soskice, 1990). All the aforementioned arguments reveal that inflation will be variable that negotiators will take into account because of the great importance it exerts on the behaviour of economic agents.

3.2.3 Relative Profitability

Relative profitability is the third variable that is incorporated in the proposed theory, as studies that suggest there are many that profitability has an influence on the negotiated outcomes between labour and management. (Soskice, 1990; Blanchflower et al., 1996; Van Reenan, 1996 and Hildreth & Oswald, 1997) A high value in this variable will exert some positive influence towards the cooperative outcomes. Nonetheless, an average value in this variable will favour, with less impact than value high of course, a cooperative result as well. This is due to the fact that there is a tendency for firms that lag behind in terms of profits to follow the outcomes achieved in similar firms with greater profitability (Soskice, 1990). Low 'Relative Profitability' will exhibit a tendency towards non-cooperative results.

According to neoclassical economic theory the purpose of both employers and employees is rent seeking (Booth, 1995). Therefore, negotiations can be interpreted as process for rent sharing between the two parties.

There are some studies that pointed out the existence of a positive association between wages and past profitability (Blanchflower et al., 1996; Van Reenan, 1996 and Hildreth & Oswald, 1997).

Moreover, other studies revealed that profitable companies might agree on wage increases; which are then used as demands from other less profitable firms (Beckerman and Jenkinson, 1990).

Therefore, in this study, a sign of high relative profitability will add power to cooperative strategies especially in the side of Management, as both parties (Labour and Management) are aware of the positive correlation and both will try to cooperate in order to keep high levels of profitability and performance.

3.2.4 Bargaining Power

The 'bargaining power' is another variable that is a part of the proposed theory. This variable attempts to capture which of the two parties that participate in the negotiations will exert more power over the final outcome. Taking into account which of the two parties has greater bargaining power, the most favourable results will shift towards this party. If management is more powerful the C-NC result will be favoured. On the contrary if Labour is more power the NC-C results will have some boost (see Table 2 in section1.2.1). The two variables that depict the bargaining power of each party are called Management and Labour, taking after their name from the parties they represent. Both these variables can take the following values: Low, Medium and High.

Scholars like Pigou (1932) and Hicks (1932) defined bargaining power as the ability of workers to push wages above the competitive threshold.

Studies from the institutionalist side, with most prominent the work of Chamberlain and Kuhn (1965), introduced a definition relevant to the concept called 'fear of disagreement' not only to wage-setting but to all labour-union targets. They defined the bargaining power of a union as the 'management's willingness to agree to the unions's terms… (and this) depends upon the cost of disagreeing with the union terms, relative to the cost of agreeing to them'

(Chamberlain & Kuhn, 1965, p. 170). As a matter of fact, risk aversion (Binmore et al., 1986) determines the power of each player. Parties with low risk aversion will have more bargaining power than an agent that is more reluctant to take the same risks.

According to Blyton et al. (2008), high bargaining power from the management's side can result to low information sharing which in turn can either lead to forcing specific changes or a coercive strategy as there is no equal power between labour and management. On the contrary, Equal bargaining power coupled with high levels of information sharing can lead to integrative results.

In our study any party that has greater power in negotiations is able to drive the result towards their side with greater forcing strategies; non-cooperative according to the terminology used in this study.

3.2.5 Economy Coordination

The last variable that is part of the proposed theory is called 'Economy Coordination' (EC). This variable represents an overall view of the institutional environment on which the negotiations are taking place. This variable has positive influence when it takes a value of either 3 (the higher value of the scale) or 1 (the lower value of the scale). A negative impact, that drives the results towards non-cooperation, is generated by this variable when it takes a medium value, which is depicted with 2 in the used scale. Nevertheless, all the tendencies that this variable exerts in the final outcome cannot be showed explicitly without any information about the values of other latent variables.

Institutions play an important role in wage bargaining. One important aspect of institutions is to help the disclosure of information and attempt foster trust; promoting solutions that might resolve social dilemmas in order to achieve economic success in the society (Blyton et al., 2008).

Taking into account the relevant literature of decentralization and the humped shape hypothesis (Calmfors & Driffil, 1988), it is very is important to emphasize in our proposed theory the impact that institutions, which facilitated coordination, have on the final

agreement. The humped shape hypothesis argues that economic systems that are either highly decentralized or highly centralized are more effective on restraining wage demands by labour. Alogoskoufis and Manning (1988) supported the aforementioned hypothesis.

For a complete decentralized system, where bargaining takes place in the firm level:

"...the local union will be highly sensitive to the effect of its wage claim on the firm's product price an therefore on the demand for the firm's output. This will produce wage moderation since the union is presumed to care about both wages and employment." (Carlin and Soskice, 1990, p. 385)

On the contrary if the system is highly centralized 'bargaining occurs in encompassing or coordinated unions, the externality is internalized' (Franzese, 2001, p.112) without allowing inefficient demands to occur. Thus, values of 1 and 3 will have a positive contribution on advancing cooperative strategies.

Soskice (1990) introduced a different, variable that was called 'economy wide coordination' that measured if any coordination takes place either from the side of labour or the side of the employers. This variable got its value according to the most advanced degree of centralisation observed to any of the two partner's activity in each country. Moreover, there was some influence from the humped-shaped hypothesis (Calmfors & Driffil, 1988) as to follow the classification of the countries calling the most centralized or less centralized countries as the most effective on achieving superior results.

Our variable called "Economy Coordination" is quite different from the variable "economy-way-coordination' defined by Soskice (1990). The variable used in this study, depicts only the side of the workers and represent whether there is some coordination among employees and if this coordination is explicit or implicit. On the one hand explicit coordination implies real bargaining rounds between union and employers confederations and on the other explicit coordination implies either a great degree of control by union federations to their members or that some agreements that are achieved in certain sectors/industries serve as models for the rest (Cahuc & Zylberberg, 2000). Any of these two traits would contribute to assign a higher value in the scale of this variable of the system**.** Data in order to define the scale and classify the countries accordingly for the purpose of constructing the theory was found on OECD's employment outlook (1997).

3.3 The Rules of the System

It is important to address that the Decision Support System that implements the proposed theory is defined by a set of input variables, which are getting values assigned by the user and latent variables which are the result of specific logical operations. The latent variables can be constructed

- by two input variables that get their values by the user

- by combining a variable defined by the user and latent variables, or

- by combining the values of a number of latent variables

In the following diagram there is a depiction of the layers, and latent variable that construct our system.
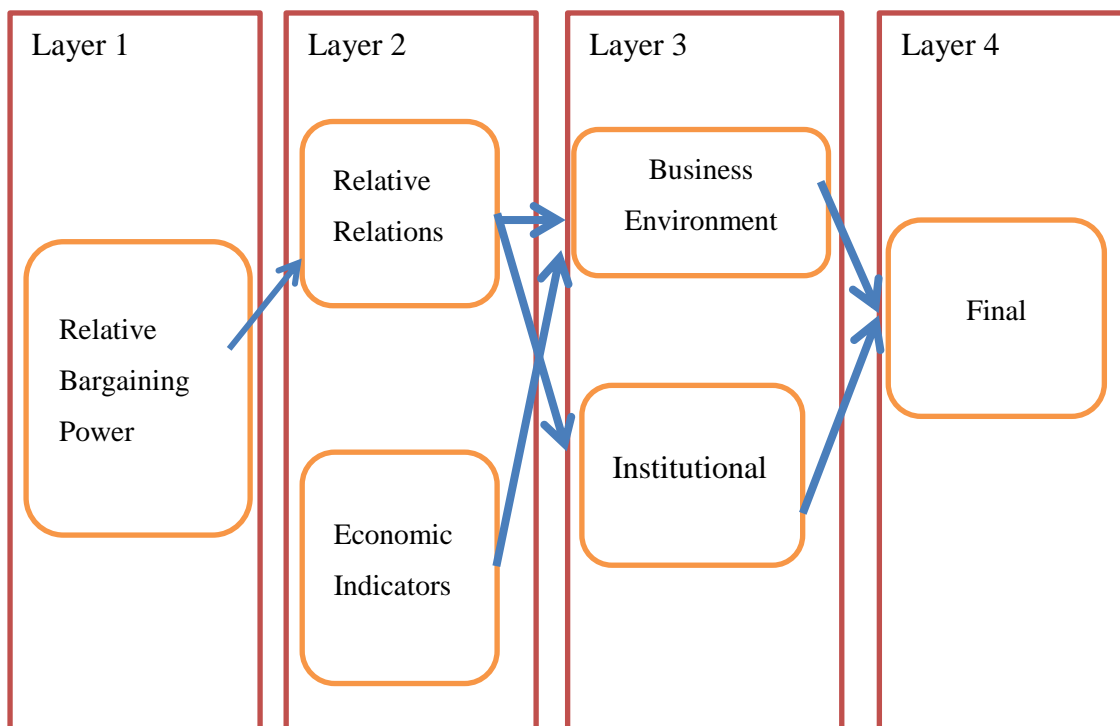
Figure 4: Layers and Latent Variables

All the rules have the form of if X equal to Z and V equal to H then K is equal to J. The letters, X, and V denote the input variables. K denotes a latent variable. The letters Z, H and J represent the values of each variable respectively.

3.3.1 The Latent Variable: Relative Bargaining Power of the Parties

The latent variable called **Relative Bargaining Power** (RBP) is the result of two input variables called **Management** and **Labour (**as defined in section 3.2.4). Both these variable can take the following values: Low, Medium and High. The value of 'Relative Bargaining Power' is determined by a set of operations that take into account the values of these two input variables. RBP will take a value of either M or L revealing which is the party that has the greater power.

In order to define the final value of this variable, the operations compare the values of the two input variables giving precedence to the input variable that has the greater value (see Table 3). In case that both input variables have equal value, for example if Management and Labour are equal to L, then this favours the employers who have most of the times the ultimate role in taking decisions about negotiation outcomes. Thus, the value of the RBP will be M in the aforementioned example, giving a relative advantage to the employers. The result of the RBP might be slightly on the side of Management but this was due the necessity to capture the advantage that employers often have on a totally decentralized system of bargaining. Moreover, this is a consequence from the definition of bargaining power according to the concept of 'fear of disagreement' which attributes some advantage to the employer's side.

Management	Labour	Relative Bargaining Power
H	L	M
H	M	M
H	H	M
M	L	M
M	M	M

M	H	L
L	L	M
L	M	L
L	H	L

3.3.2 The Latent Variable: Relative Relations

The latent variable called **Relative Relations (RR)** consists of two input variables, one defined by the user and it is called Relative Profitability (RP) and one latent variable called Relative Bargaining Power (RBP) (as was defined in the previous section 3.3.1). The values of this variable can be the following: Selfish Behaviour on the side of the Management (SBM), Selfish Behaviour on the side of the Labour (SBL) or Cooperative (C) behaviour. This latent variable gives the tendency of strategic behaviour that might prevail from an early stage as the system develops. The operations will assign extra power to the party that had the upper hand in bargaining power if the profitability of the firm is assessed on average levels. If the profits reach an excessive level, then this fact will prevail and euphoria generated will affect both parties leading to cooperative attitudes. If profits are low, then the party that has the greater degree of bargaining power will prevail and seek the most of the rent produced by the firm. As it has been already stated it provides an early indicator about the tendency of the behaviour of the two players in the rest of the game.

Relative Profitability	Relative Bargaining Power	Relative Relations
L	M	SBM
A	M	SBM
H	M	C
L	L	SBL
A	L	SBL
H	L	C

Table 4: Rules for Relative Relations

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3.3.3 The Latent Variable: Economic Indicators

The latent variable called **Economic Indicators** (EI) has as inputs two variables that their value will be defined by the user. These two variables are two economic indices; the Inflation rate and the Unemployment rate. As it was addressed in an earlier section of this chapter, these two variables exert an important influence on negotiations. If both take the value 'Low' then the latent variable EI will take the value 'Very Positive' (VP). According to the proposed theory, if the inflation rate is Low and the Unemployment rate Medium then the variable EI will take a 'Positive' value as the environment does not indicate any special concerns for the firm or the individual participating in the negotiations. As long as one of these two input indices takes the value 'High' by the user then the latent variable called EI will take a 'Negative' value; signalling concerns about the conditions that exist in the economy. In the case that both indices might take a value 'High' then EI will take a value Very Negative depicting an unfavourable environment for changes and concessions.

Inflation Rate	Unemployment Rate	Economic Indicators
L	L	Very Positive
L	M	Positive
L	H	Negative
M	L	Positive
M	M	Uncertain
M	H	Negative
H	L	Negative
H	M	Negative
H	H	Very Negative

Table 5: Rules for Economic Indicators

3.3.4 The Latent Variable: Business Environment

The first variable from the third layer that will be analysed is the one called Business Environment (BE). This variable has as input variables two latent variables. These two variables are 'EI' and 'RR.' In general, the rationale behind these rules can be summed up in the following prescriptions.

If 'EI' is 'Very Positive' then it can induce cooperative strategies from both sides even if one party has the upper hand in the RR. Along the same lines, if 'EI' is very negative then it will induce non-cooperative strategies by both players leading them to distributive bargaining processes. The proposed theory prescribes that a negative economic environment leads to behaviours that trigger a pervasive feeling of economic uncertainty.

As a matter of fact, a 'Negative' value for 'EI' leads to non-cooperative behaviour if 'RR' is giving the upper hand either to Labour or Management. If the value of 'RR' is equal to C then the influence of a 'Negative' signal by the indicators will lead to Cooperation among the two parties as they will realise that together they might find a solution to achieve the economic sustainability of the firm or the sector.

If the 'EI' has the value 'Positive' and 'RR' has the value 'C' then the result will be cooperation from both sides, as an opportunity arises in order to advance the changes that might be for the benefit of both sides. In this operation logic prevails. Nevertheless, if 'EI' has 'Positive' value then greedy behaviour arises and the side that has greater influence through the variable 'Relative Relations' will demand more out of the process of negotiation. Thus, if 'RR' is SBM then Management will follow a Non-Cooperative approach and Labour will be cooperating having a tendency for concession. The inverse will happen in the case which the value of 'RR' is equal to SBL, Labour will follow a more demanding stance and Management will follow a strategy that will be more in the side of cooperation.

If the variable 'EI' takes the value U then an opportunistic behaviour due to uncertainty will arise and each side will follow the most prevailing strategy that is generated by 'RR.' Therefore, if 'RR' is equal to SBM then Management will follow a Non-Cooperative strategy, trying to force changes that are favourable from them and Labour will keep a more Cooperative stance. In the case when 'RR' takes the value SBL, Labour will follow a Non-Cooperative, strategy demanding changes in their favour and Management will follow a Cooperative strategy trying to accommodate some changes and avoid disruptions of the production.

Economic Indicators	Relative Relations	Business Environment
Very Positive	C	C-C
Very Positive	SBL	C-C
Very Positive	SBM	C-C
Positive	C	C-C
Positive	SBL	NC-C
Positive	SBM	C-NC
Uncertainty	C	C-C
Uncertainty	SBL	NC-C
Uncertainty	SBM	C-NC
Negative	C	C-C
Negative	SBL	NC-NC
Negative	SBM	NC-NC
Very Negative	C	NC-NC
Very Negative	SBL	NC-NC
Very Negative	SBM	NC-NC

Table 6: Rules for Business Environment

3.3.5 The Latent Variable: Institutional

The other latent variable of the third layer is called **Intuitional (In).** This latent variable has as input variables, a variable called **Economy Coordination (EC)** that is defined by the user and the variable **RR** (layer 2) which was described in section 3.3.2. The variable 'In' depicts the broader institutional framework which will influence the negotiators in order to assess their options.

The scale of 'EC' can take a value from 1-3; representing different degrees of coordination. The set operations of the two input variables can provide a variety of values for the variable 'In'.

To provide a simplification of the rationale of the operations that generate the values of the variable 'In' the following description is provided. The final value is a combination of two components. One component is the institutional tendency that is given by 'EC' and the second is generated from 'RR' which provides some behavioural tendency inside the firm.

Assigning a value of '1' to 'EC' will result into adding Low institutional tendency to 'In.' A value of '2' will give a Medium Institutional tinge in 'In,' and values '3' will result to High institutional tendency in the value of 'In.' When combined with 'RR,' 'In' will extract the second component. This second component will prescribe who will be the driver of the negotiation process as generated by 'EC'. For example if 'RR' has a value SBM then Management will be added to the tendency given by 'EC.' If 'RR' is equal to SBL then Labour will be the leader given the institutional tendency given by 'EC'. Last but not least, if 'RR' is equal to C then a cooperative flavour will be pervasive to any institutional tendency generated by 'EC'.

So there can be nine values for the latent variable called 'In' (see Table 7). The essence of the latent variable called 'Institutions' is to depict a general framework which consists of the coordination procedures that exist in the economy and the specific circumstance that prevail inside the firm where the negotiation task takes place. This variable has a decisive role on the final outcome as it contains a mixture of underlying motives that can lead to integrative agreements.

Economy Coordination (1, 2, and 3)	Relative Relations (SBM, SBL, C)	Institutional
1	SBM	Low Institutional Management
1	SBL	Low Institutional Labour
1	C	Low Institutional Cooperation
2	SBM	Medium Institutional Management
2	SBL	Medium Institutional Labour
2	C	Medium Institutional Cooperation
3	SBM	High Institutional Management
3	SBL	High Institutional Labour

3	C	High Institutional Cooperation

Table 7: Rules for Institutional

3.3.6 Latent Variable: Final

In layer 4 there is the last latent variable called 'Final' which generated the final result of the system. The variable 'Final' has as inputs two latent variables; 'In' and 'BE' which have been defined in layer 3. Here the combination of outputs will generate the probabilities that will fill in the cells of the matrix, thus, revealing the estimations about the strategies that might be adopted by each party. Due to the complexity of the outcome, the operations have to be analysed by grouping some of the rules and the generated outcomes. It is important to address that when a cell has an estimated probability which is greater than all the other probabilities in the rest of the cells, and then it will be considered as the 'winner result'. A 'winner result' is giving a suggestion according to the proposed theory on what the strategies of the two players should be.

When 'BE' had a value of C-C it usually prevailed in the rule, giving extra points in P1 (see Table 2 in section 1.2.1), advancing cooperative strategies. Nevertheless, when the latent variable 'In' was in the Medium range combined with a behavioural tendency which promoted either Management or Labour then the cell with a non-cooperative strategy for both players is the one with the greater probability. These two scenarios are underpinned by the ineffectiveness of the economic systems that are on the middle range values of the horizontal axis of the 'hump-shaped' hypothesis introduced by Calmfors and Driffil (1988). Only if 'In' has a value of MIC, cooperation will develop between the two parties not from an institutional effect but from their own willingness to find an integrative solution. Thus, P1 will be the probability with the higher estimate only if both parties have an inherent tendency to cooperate.

Nevertheless, it should be stated that all rules that incorporate an 'In' that has as a first component High in its value will produce outcomes with greater the cooperative probability P1; only exception are the ones where the 'BE' is equal to NC-NC. These results give an

advantage to P1 because there is the tendency that more centralized and coordinated economies achieve better results in terms of wage restraints (Soskice, 1990, Carling & Soskice, 1990). The proposed theory perceives institutions as facilitators of Pareto optimal outcomes, therefore in these two rules there is a higher number in P1 than in the rest of the cells. As expected, the scenarios that have both 'BE' equal to C-C and 'In' with a component High will have an even larger estimate for P1 compared with the rest. Further rules that combine the component High in the variable in 'In' with a value of 'BE' that contains only one C strategy, have a considerable probability P1 that is larger than the rest but not over 50%. This is not the case when 'In' has not the component H in its value.

These results, which promote P1, are the backbone of the proposed theory. They tend to drive the players to an outcome space that solves the PD problem, thus facilitating integrative agreements that will achieve greater joint outcomes.

Another important set of rules that should be elucidated further is the following. If 'BE' is either C-NC or NC-C and the variable 'In' is equal with LIC then results have two cells that have the greater probability. In the rule on which 'BE' is equal with C-NC the results are P1: 20, P2: 30, P3: 20, P4: 30 and in the scenario where 'BE' is equal to NC-C the result is P1: 20, P2: 20, P3: 30, P4: 30. These results are based in the following assumption. In a decentralised system there are equal chances the party that has an advantage to shift the negotiation process in its favour calling the other party to make concessions instead of pure distributive bargaining (P4). Nonetheless distributive bargaining, which is the straightforward solution of the PD, still has an equal probability to come up as the final outcome.

The rest of the results follow the logic of agreements that will end up on the cell that is proposed by rationality and game theoretic rules. The larger numbers in this cell are in rules which incorporate 'BE' with values NC-NC and Middle range values in 'In' as both values represent an unstable and less cooperative environment.

All rules and their outcomes are presented below in Table 8.

Business Environment	Institutional	FINAL	PROBABILITIES (P1, P2, P3, P4)
C-C (P1)	HIM	(P1)	70, 10, 10, 10

C-NC (P2)	HIM	(P1)	40, 20, 10, 30
NC-C (P3)	HIM	(P1)	40, 15, 15, 30
NC-NC (P4)	HIM	(P4)	15, 20, 10, 55
C-C (P1)	HIL	(P1)	70, 10, 10, 10
C-NC (P2)	HIL	(P1)	40, 15, 15 ,30
NC-C (P3)	HIL	(P1)	40, 10, 20, 30
NC-NC (P4)	HIL	(P4)	15, 10, 20, 55
C-C (P1)	HIC	(P1)	80, 5, 5, 10
C-NC (P2)	HIC	(P1)	55, 15, 10, 20
NC-C (P3)	HIC	(P1)	55, 10, 15, 20
NC-NC (P4)	HIC	(P4)	10, 20, 20, 50
C-C	MIM	(P4)	25, 20, 10, 35
C-NC	MIM	(P4)	10, 30, 10, 50
NC-C	MIM	(P4)	10, 15, 15, 60
NC-NC	MIM	(P4)	10, 15, 10, 65
C-C	MIL	(P4)	25, 10, 20, 35
C-NC	MIL	(P4)	10, 15, 15, 60
NC-C	MIL	(P4)	10, 10, 30, 50
NC-NC	MIL	(P4)	10, 10, 15, 65
C-C	MIC	(P1)	64, 12, 12, 12
C-NC	MIC	(P4)	15, 25, 10, 50
NC-C	MIC	(P4)	15, 10, 25, 50
NC-NC	MIC	(P4)	10, 10, 10, 70
C-C	LIM	(P1)	50, 15, 10, 25
C-NC	LIM	(P4)	10, 30, 10, 50
NC-C	LIM	(P4)	10, 20, 20, 40
NC-NC	LIM	(P4)	20, 10, 10, 60
C-C	LIL	(P1)	50, 10, 15, 25
C-NC	LIL	(P4)	10, 20, 20, 40
NC-C	LIL	(P4)	10, 10, 30, 50

NC-NC	LIL	(P4)	20, 10, 10, 60
C-C	LIC	(P1)	70, 10, 10, 10
C-NC	LIC	-	20, 30, 20, 30
NC-C	LIC	-	20, 20, 30, 30
NC-NC	LIC	(P4)	15, 10, 10, 65

<div align="center">**Table 8: Rules for Final**</div>

It is important to address that the above rules and their outcomes have a "semi-ad-hoc" nature as there are selective descriptions on what kind of relations exist between all these variables. Nevertheless, these estimates depict an attempt to describe the main tendencies among these variables according to the relations that can be found in the literature.

Although the existence of objective difficulties on defining quantified outcomes on the generated predictions of the system, the proposed theory incorporated specific quantifiable outcomes for each scenario. Despite the risk on such an endeavour, the task was prescribed by the willingness of this research to provide a practical solution to the problem that aims to tackle.

3.4 Outcomes

In this research, negotiations are assumed to be a one-off game without repetition. Integrative results need cooperative action from both sides in a situation where rationality prescribes non-cooperation. Although these assumptions restrict some aspects of the negotiation task as observed in real-life, this framework gives us the opportunity to get reasonable path toward one solution.

Management Labor	C	NC
C	P1	P2
NC	P3	P4

Table 9: Output Matrix of the Proposed Theory

The parties (M and L) can choose among two strategies; cooperation and non-cooperation. Each strategy depicts a specific way of changing the employees-management conditions and establishments. These ways can be resembled with the forcing and fostering strategies described by Walton, Cutcher-Gershenfeld and McKersie (2000).

Forcing strategies, in order to apply changes, are most of the times followed by management when they want to force the introduction of economic concessions and change in work rules (Walton et al. 2000). These forcing strategies are connected with more traditional approaches of compliance that aimed to weaken the workers (union) position. It is perceived, traditionally, as strategy of the employers however, under some conditions, where the union might have excessive power over the work force necessary for the firm can adopt such kinds of strategies.

In contrast, fostering strategy occurs when parties want to introduce some changes through justification of the appropriateness of those changes (Walton et al. 2000).

The connection of forcing strategies with distributive negotiations and fostering strategies with integrative negotiations which is implicitly supported in the proposed theory with the following terminology:

Cooperative strategies → Fostering Strategies → Integrative Negotiations

Non-Cooperative Strategies → Forcing Strategies → Distributive Negotiations

It is also addressed by Walton, Cutcher-Gershenfeld and McKersie (2000), who underline the further implications that emerge by following each of these strategies.

There are some specific tactics that follow the adoption of each strategy that can be used from researchers in order to identify the strategies followed by parties in real-life negotiations. As matter of fact, this allows by the construction of case studies, which will be assessed by experts, to test the applicability of the theory and the respective Decision Support System.

Bargaining: Employ disributive tactcs, such as threas and overstatements

Managing internal differences: Build internal concensus; exploit internal differences on the other side.

Shaping intergroup attitudes: Promote uncertainty and negative attitudes toward the other side
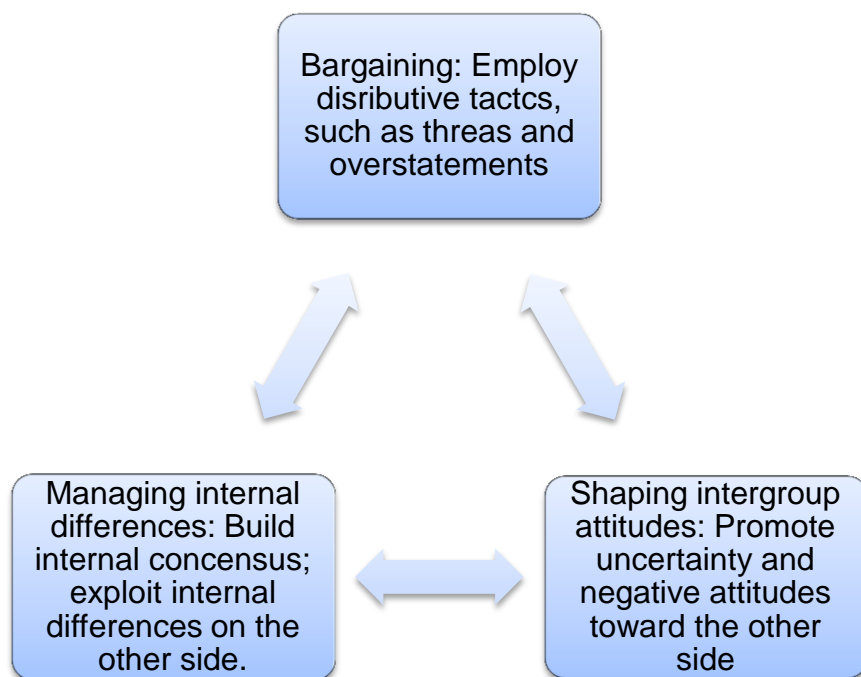
Figure 5: Forcing Strategy

(Walton et al. 2000; p. 49)
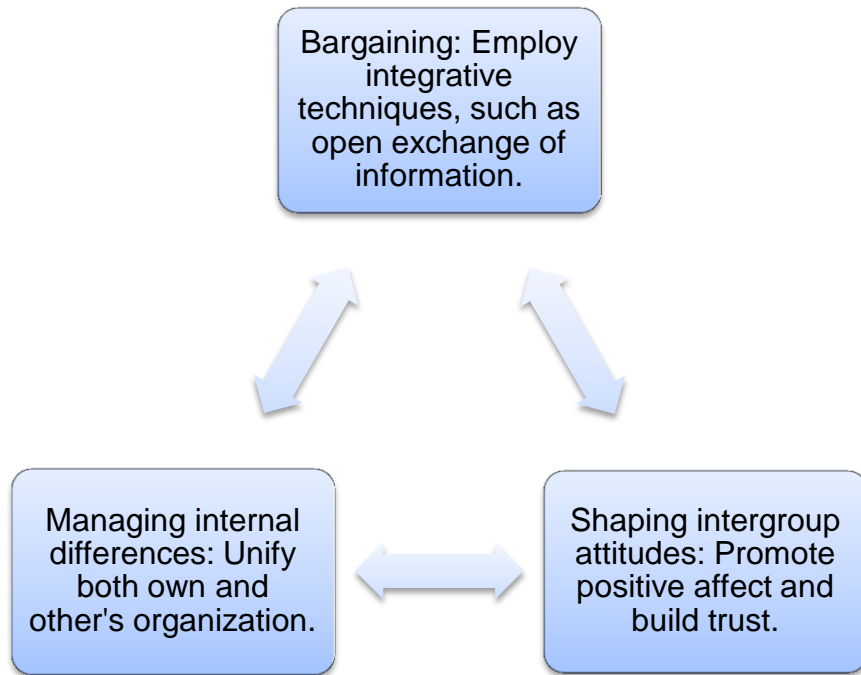
Figure 6: Fostering Strategy

(Walton et al., 2000; p.49)

The acknowledgement of all these strategies acts as another credible evidence of the deviations from orthodox economic theory in assessing outcomes of negotiations. As experiments in laboratories show, firms and individuals usually act following the norms of fairness and reciprocity achieving results that deviate from classic economic theory (Blyton et al. 2008).

3.5 Conclusions

In this chapter the proposed theory of this study was introduced. The objective was to propose a theoretical framework that would achieve, with the help of a 'Decision Support System' and by assessing the relations among the most important variables that influence negotiations on Labour-Management disputes, to foster trust among negotiators.

The variables that have been employed in order to achieve our objective were presented. These variables have been divided into two categories: input and latent variables. The input variables take their value by the expert-user of the system. In the proposed theory the following six input variables have been used:

- Inflation rate

- Unemployment rate

- Relative Profitability

- Management

- Labour

- Economy Coordination

These input variables have been selected from the researcher, by reviewing the literature, in order to construct with their help the proposed theory.

The latent variables are the product of logical operations. In this study there have been five such variables:

- Relative Bargaining Power

- Relative Relations

- Economic Indicators

- Business Environment

- Institutional

- Final

These latent variables are governed by a set of rules, based on theoretical suggestions of the existing literature, which lead to the final outcomes of the proposed theory.

The outcome space of the proposed theory is a 2x2 matrix which represents a prisoner's dilemma game. Therefore, the latent variable called Final will produce results that will represent with what probability (e.g. P1, P2, P3 and P4) the agreement of the negotiation will be housed in one of the four cells of the matrix.

The proposed theory was the basis in order to develop a Decision Support System that will help to test its applicability. The development process of the Decision Support System will be presented in the chapter 5. In the next chapter the Methodology of this thesis will be presented.

4. Methodology

4.1 Introduction

This chapter describes the methodological approach employed in order to tackle the research questions that have been presented at the end of the previous chapter. In order to justify the selection of a specific methodological design, the philosophical assumptions held by the researcher must be clearly defined. The selection of the employed methods, in order to validate the proposed theory, derived from a specific pluralistic philosophical approach. This approach will be elaborated in the outset of the chapter. Thereafter, an attempt to explain the research strategy and the methods mobilized as a consequence of housing this research into this particular philosophical framework will be made.

It is important to in order to conduct a prudent research, either basic or applied, to follow a 'scientific way' (Sekaran & Bougie, 2013). With the term 'scientific way' it is meant a research that has to oblige in a set of norms. Moreover, it is useful to clarify that on the one hand basic research is a project that aims to have a theoretical contribution in the existing literature of the field and on the other that applied research has as an objective to solve a particular problem its results (Karami, 2011). According to Sekaran and Bougie (2013, p.19) 'scientific research focuses on solving problems and pursues a step-by-step logical, organized, and rigorous method to identify the problems, gather data, analyse them, and draw valid conclusions from them'. Therefore, it is important to follow a rigorous and parsimonious approach towards any research quest in order to achieve validation of the tested propositions. This way of investigation tends to be more objective and relevant to natural sciences (Sekaran, 2003). Nevertheless, it is important to address that alternative routes to tackle research project have been developed but they deviate from a strict scientific investigation.

Furthermore, Robson (2002, p.18) addressed that a research study that wants to discover the 'truth' should be conducted 'systematically, sceptically, and ethically'.

The aforementioned terms have the following meaning:

Systematically means following sound logic in the steps followed when conducting research, dedicating considerable amount of thought on what the research is doing by observing, collecting and analysing data

Sceptically means that a researcher should expose his ideas to probable falsification

Ethically; to align with specific norms that safeguard the interests of all parts involved in research.

<div align="right">(Robson, 2002, p.18)</div>

According to Sekaran and Bougie (2013) the main traits of scientific research are the following:

1. Purposiveness: the conducted research must have a purpose to serve; that will be defined by the researcher, the decision maker or the society, giving a purposive aim in all research endeavours;

2. *Rigor*: a study has to be developed on a stable theoretical foundation, and a prudent well-defined methodological design which both will increase rigor to a study;

3. *Testability*: each research question must fulfil some logical requirements, that will allow them to be tested via data collection and analysis;

4. *Replicability*: the detailed design of the study must allow the replicability of the study from others following exactly the same steps described by the researcher; this adds extra validity to the study as it verifies that the results did not emerge due to specific conditions or pure luck.

5. *Precision and Confidence*: precision is connected with the level accuracy that the results have represented the reality and confidence reveals the probability that what was predicted is indeed correct;

6. *Objectivity*: the main findings and conclusions should be objective; to be drawn out of real data that have been collected through sound methodological design and not by subjective judgements.

7. *Generalizability*: the applicability of the main findings has to be transferable to other similar concepts or other environments in order to add merit to them;

8. *Parsimony*: in the quest to explain relations and causal effects through research, simplicity should be sought in order to achieve an effective understanding of the problem; thus, the better understanding and definition of the problem the greater parsimony achieved.

(Sekaran & Bougie, 2013)

Compatibility between research investigation and the conceptualization depicted by the philosophical stance selected by the researcher has to be sought. As Kuhn, (1962) argued any scientific investigation has to be housed in a 'paradigm'. According to his definition 'Paradigms are universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners' (Kuhn, 1962, p. viii). Therefore in order to achieve better results in terms of the abovementioned characteristics of scientific research the right paradigm in which each research work is suited must be well defined by the researchers. This action is a step towards achieving better soundness of the findings. As Karami (2011, p. 48) argues:

 'a research paradigm is a framework that guides how research should be conducted, based on people's philosophies and their assumptions about the world and the nature of knowledge'

Thus, its main effect is to guide a research study in terms of methodological design and strategy. Despite the importance of the notion of paradigms in research problems often arise.

Nevertheless, it is worth mentioning that the term paradigm often may be interpreted differently by scholars. As it is argued by Karami (2011, p.50) 'the term 'paradigm' is used somewhat inconsistently in the literature because it has different meanings for different people in different disciplines, in different part of the words and over different periods of time.'

Therefore, it is important to study in depth and understand the main differences between the main paradigms that exist as even experienced scholars might fell prey of these misunderstandings.

In the next section an overview of the main paradigm is presented. Moreover, a thorough review about the paradigm that this research follows is provided.

4.2 The Paradigm of the Thesis

The two main paradigms that represent the two extremes in a hypothetical continuum of paradigms are: positivism and interpretivism or phenomenology (Morgan & Smircich, 1980). On the one hand, positivism represents a way of thinking that is similar with the natural sciences were an objective world exists.
Positivism as philosophical paradigm mainly argues that:

Reality consists of what is available to the senses – that is, what can be seen, smelt, touched, etc.

Inquiry should be based upon scientific observation (as opposed to philosophical speculation), and therefore on empirical inquiry

The natural and human sciences share common logical and methodological principles, dealing with facts and not with values

(Gray, 2004, p.18)

On the other hand, interpretivism is a critic on positivism that underlines the fact that the real world is subjectively constructed in the minds in the minds of those involved in the research. As it argued by Crotty (1998, p.67) interpretivism, looks for 'culturally derived and historically situated interpretations of the social life-world.'

These two philosophical realities prescribe different assumptions in terms of ontology (nature of reality), epistemology (what constitutes valid knowledge), axiology (the role of values)

and methodology (the process and that the researcher has to take into account before selecting their stance.

Being able to understand these differences helps you to interpret better the research designs followed by other researchers. Moreover, it allows you to judge better the quality of your own work. As it is argued by Haverland and Yanow (2012, p. 402)

 'the lack of awareness that there are different ways of knowing leads not only to misunderstandings or lack of appreciation of work done using other approaches; it can also lead to inconsistencies in the researcher's own work, thereby lessing its quality'

Table 10 illustrates the basic assumptions for the two extremes of the continuum following the typology of Morgan and Smircich (1980), who classified the different paradigms that social scientists espouse.

	Positivism				**Interpretivism**- Phenomenology	
	←——————————————————————→					
Ontological Assumptions	reality as a concrete structure	reality as a concrete process	reality as a contextual field of information	reality as a real of symbolic discourse	reality as a social construction	reality as projection of human imagination
Basic Epistemological Stance	to construct positivistic science	to study systems, process, change	to map contexts	to understand patterns symbolic discourse	to understand how social reality is created	to obtain phenomenological insight revelation
Research Methods	laboratory experimen	historic al	contextual analysis	Symbolic	Hermeneutics	exploration of pure

	ts, surveys	analysis	with interpretive elements	analysis		subjectivity

<div align="center">**Table 10: Continuum of Paradigms**</div>

<div align="right">Adapted from Morgan and Smircich (1980, p. 492)</div>

The differences on the axiological assumptions can be found in Creswell (1998). Creswell argues on the one hand that positivism believes that values do not have a significant role and research is unbiased and on the other that Interpretivism acknowledges that biases are present as research is accordance with the values of the researcher.

Another philosophical view of social sciences that is somewhere in between the two extremes is **critical realism**. Critical realism as it is revealed by its name exerts a critic on the positivistic view. As it is argued by Sekaran and Bougie (2013, p.29)

'critical realism is a combination of the belief in an external reality (an objective truth) with the rejection of the claim that this external reality can be objectively measured; observations (especially observations on phenomena that we cannot observe and measure directly, such as satisfaction, motivation and culture) will always be subject to interpretation.'

Therefore, it is possible to allege from the above description that in critical realism, the aim of the research is not to find out the 'truth' but to work towards that as much as possible; as it is impossible to reveal the objective truth. Some observations will never be objectively defined creating a degree of bias. Critical realism addresses that any result is highly influenced by the context in which we specify the research project. Therefore, it is valid to argue that any findings following the view of critical realism are not beyond dispute (Robson, 2002). Rigorous replication of the findings has to be made in order to achieve a degree of credibility of the proposed theory. It follows that the theory under this view has to be tested many times through different methods, more precisely employing triangulation, in order to understand the reality (Sekaran & Bougie, 2013). In terms of ontology critical realism still lies within an objectivist point of view; even though there is not absolute truth of reality the researchers can conduct research as if they knew this reality (Karami, 2011)

Pragmatism is a different view of social science that cannot be identified with the one or the other main paradigms. More precisely, pragmatism offers considerable flexibility in terms of objectivity of reality, as both objectivity and subjective understanding can underpin useful research findings (Sekaran & Bougie, 2013). As a matter of fact, pragmatists seek to achieve a more holistic view of the problem. Indeed, as Karami (2011, p.60) argues,

'pragmatists suggest that by ignoring the philosophical debate about reality and the nature of knowledge, the weaknesses of one paradigm can offsets with the strengths of the other.'

In the recent year social sciences started to deviate from the standard norms of research that have been prescribed by a specific paradigm. This was necessity that emerged in the social sciences the last decades due to many multidisciplinary projects. These projects have been combining elements from various fields such as business, economics, sociology, or even psychology and therefore they could not rely on just a specific research method stemming from a specific philosophical paradigm.

As it is argued by Maxcy (2002, p.52), 'for social science researchers wishing to bridge the gap between the singular scientific method and the structuralist orientation of old-line research and the new, more freewheeling inquiry approaches of the naturalists, one answer has been found of the philosophy of pragmatism to the changing conceptions of research methodology.' This willingness by the researchers resulted in a great acceptance of pragmatism and thus, a proliferation of the evolutionary approach of mixed-methods.

Under pragmatism, the researcher may encompass different views on what is happening in the reality around them. Therefore, these different views may be conceived as different perspectives which can help us to reach the 'truth'. As a matter of fact pragmatism espouses pluralism and eclecticism (Sekaran & Bougie, 2013). As it is argued by Curran and Blackburn (2001; p.123) pluralism serves the aim to 'cross the divide between the quantitative and the qualitative and the positivist and the non-positivist' thus, offering a greater variety to the researcher. Similarly, Pawson (1989) argues that social research is mostly pluralistic; researchers in many cases use a combination of quantitative and qualitative methods into same research project.

Pragmatism entails another feature that distinguishes this view compared with the previous paradigms. This feature is the notion that most of the accepted truths from social research have a tentative character and should be considered as ephemeral due to their precise nature (Sekaran & Bougie, 2013). A last feature of pragmatism is that theory steams out of practice, and most theories are developed in order to be applied back by practitioners. According to pragmatists the real merit of research lays practical usefulness (Sekaran, & Bougie 2013).

The philosophical position taken in this research is mainly following the pragmatism stream of thought. Nevertheless, there are many traits borrowed from critical realism.

4.3 The Scientific Approach of the Thesis

4.3.1 Deductive Reasoning

The scientific approach that was used in this research project is a commonly used approach in scientific research known as deduction. Deduction is 'the process starting with a theory and using it to explain particular observations' (Gilbert, 2001; p.19). The opposite approach is called induction. Induction as argued by Sekaran and Bougie (2013, p.26) 'is a process where we observe specific phenomena and on this basis arrive at general conclusions'. Nevertheless, there is criticism on the ability of induction to test the validity of a theory (Popper, 1968); giving deduction a prominent position as reasoning approach.

More precisely, using the theoretical premises found in the literature, the proposed theory and the created Decision Support System have been developed following a deductive approach. Subsequently, through an electronic survey, these proposed concepts have been tested for their validity.

A vast amount of literature was reviewed from the following scientific fields:

- Negotiation Analysis

- Game Theory

- Industrial Relations

- Institutional Economics and

- Labour Economics

From the review of this literature, the main elements of our proposed theory have been selected. The starting point was the theoretical premises of the above-mentioned fields of study, and then, the methodological path described in this chapter was employed in order to validate our theoretical construction. The following figure is explaining the general trend of the deductive logic.
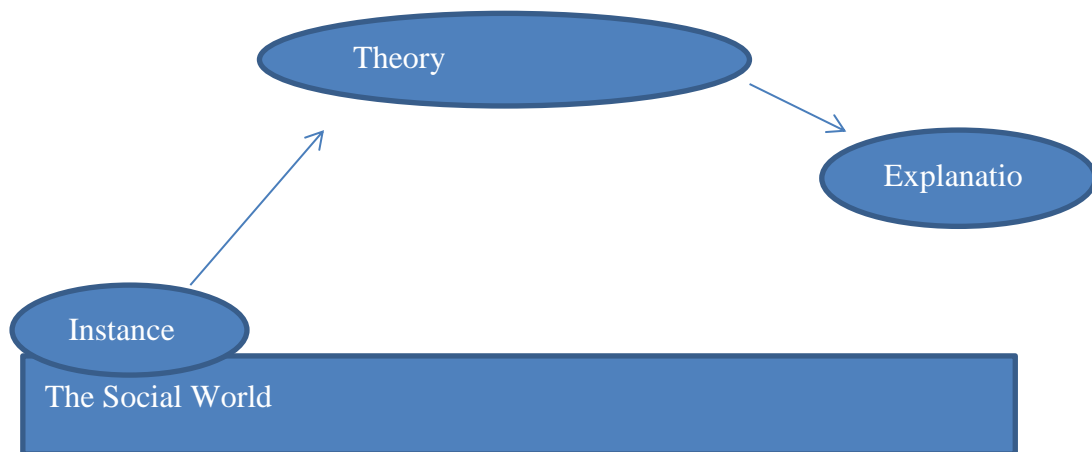
Figure 7: Deductive Logic

(Gilbert, 2001, p.19)

To sum up it is worth to mention the definition of the deductive research. As stated by Karami (2011, p.10)

'deductive research describes a study in which a conceptual and theoretical structure is developed which is then tested by empirical observation; thus particular instances are deducted from general inferences'

From the above discussion it is obvious that the most appropriate research reasoning for this study was the deductive approach.

4.3.2 Research Strategies

The research strategies that can be employed by a researcher in order to tackle the research quest can be divided into three approaches of inquiry, quantitative, qualitative and mixed-methods (Creswell, 2003). It is useful to cite the characteristics of these strategies of inquiry in the following table adapted by Creswell (2003, p. 19).

Tend to	Qualitative Approaches	Quantitative Approaches	Mixed Methods
Use these philosophical assumptions Employ this strategies as inquiry	Constructivist/Advocacy/Participatory Knowledge claims, Phenomenology, grounded theory, ethnography, case study and narrative	Post-positivist knowledge claims Surveys and Experiments	Pragmatic knowledge claims Sequential, concurrent and transformative
Employ these methods	Open ended questions, emerging approaches, text of image data	Close ended questions, predetermined approaches, numeric data	Both open and closed-ended questions both emerging and predetermined approaches and both quantitative and qualitative data and analysis
Use these practices of research as researchers	Positions himself or herself Collects participant meanings Focuses on a single concept or phenomenon	Tests or verifies theories or explanations Identifies variables to study Relates variables in	Collects both quantitative and qualitative data, Develops a rationale for mixing, Integrates the data of

	Brings personal values into the study Studies the context or setting of the participants Validates the accuracy of findings Makes interpretation of the data Creates an agenda for change or reform Collaborates with the participants	questions or hypotheses, Uses standards of validity and reliability Observes and measures Information numerically Uses unbiased approaches Employs statistical procedures	different stages of inquiry, Presents visual pictures of the procedures in the study Employs the practices of both qualitative and quantitative research

<div align="center">

Table 11: Qualitative - Quantitative - Mixed-Methods

</div>

Adapted by Creswell (2003, p.19)

The **research strategy** that has been employed in order to support our theory building was a mixed-methods approach that included numerical experimentations, a survey, and a set of interviews. The ability of these methods to generate valuable findings, in order to validate our proposed theory, differs as they are frequently used for quite opposite methodological views. Nevertheless, the mixture of them, as showed in the above table, can be very useful in order to confirm the validity of our theory and the DSS developed in this research.

4.4 Using Experts for Validation

The data being elicited by experts, in any kind of study or real life decision making tasks, are usually exposed to various issues that might influence their quality (Howlett & Ramesh, 2003).

One of the most important of these issues is the considerations that arise when trying to identify the experts that will be the most appropriate for the task assigned to them. In general, it is commonly accepted that an 'expert' is not just the person that happens to know the most about a specific theme or topic in a theoretical or certified way. For this purpose,

there have been some studies that attempted to codify what expertise actually is. In the next section of this research, the main point of identifying an expert are going to be presented.

In their study, Shanteau, Weiss and Thomas (2002) recorded nine criteria that can be used in order to identify the experts that have been used by previous studies.

Before citing the nine criteria a general ascertainment has to be made. As we have already stated identifying someone as an expert is not an easy task; especially when these experts will contribute to research studies. If there was an external criterion that could be used as a benchmark, then, any person that could achieve an amount of 'right' answers or succeed a performance inside a specific range would be identified as an expert.

Nevertheless, in the aforementioned criterion lies a paradox; as experts often are needed to contribute with their knowledge in specific events where 'right' answers do not exist. This fact ceases the criterion itself. In any case, if these 'right' answers were available then the experts sometimes would not be necessary.

After clarifying the above paradox we may continue with the presentation of the nine criteria can be used in order to identify a real expert. Shanteau, Weiss and Thomas (2002) in their study reported nine criteria that have been used in the literature, in order to identify real experts in a topic:

Experience is a traditional approach on characterizing someone an expert. The main concept is that someone with more experience is an expert compared with someone that is less exposed in the task. However, there is a problem to refer to this criterion as a universal truth (Trumbo et al., 1962; Goldberg, 1968) because sometimes long exposure in a task might not lead someone to become an expert. Of course, there is, many times, a positive relation between experience and performance but sometimes mere experience might be just a sign of in the hierarchy and seniority (Shanteau et al., 2002).

Certification is another traditional approach that is widely used in professional life in order to declare expertise. Most of our skills are certified via official procedures which establish a ranking system that is recognized by most businesses and organizations. Nevertheless, there are two problems with this way of identifying expertise. Firstly, the promotions in the workplace are a result of experience and skills, thus, we have the problem of experience back

in the game. Secondly, as Shanteau, Weiss and Thomas (2002) argue these certifications of skills lasts for eternity causing the 'ratchet-up effect.' A person that got an accreditation in a skill will never lose this certification. In this case even if performance decreases the title gained by the certificate will not be taken away representing false expertise.

Social acclamation, an expert being recommended by other peers, is another way to identify the experts in a field. This way to identify experts is a 'safe' way as there might not be so many experts that will make a false choice and select someone that would not qualify as an expert (Shanteau et al., 2002). Moreover, it is a useful way to discover experts when there is not so much information about it. Nevertheless, there are some drawbacks in this criterion. Sometimes a person might be included in a list of experts due to the 'popularity effect'; just because the person is well known in a specific group. On the contrary, somebody that is less popular or even outside a closed group might not be identified as an expert.

Reliability through *consistency* can be another way to name someone as an expert. Einhorn (1972, 1974) discusses that if somebody is consistent will be labelled as 'expert' and any inconsistency will be a sign of lack of expertise. The main criticism on this rule is the following. Sometimes a person may show great levels of consistency just because it is following some basic rule but trivial rule, which might not be sufficient to name him or her expert (Shanteau et al., 2002).

Consensus among a group of persons is a specific topic, sometimes can be used as a criterion in order to identify them as experts (Einhorn, 1974). The presence of a disagreement reveals that at least one of them is not as expert as the rest. Shanteau, Weiss and Thomas (2002) criticize this approach as the agreement derived from experts can be based on incorrect assumption in an initial stage of the decision process. This consensus may misguide them and do not consider other alternatives. Their consensus does not guarantee a success; they could have been all wrong.

Another criterion for identifying somebody as an expert is the *Discrimination ability* which refers to the ability of experts to conduct a prudent analysis and locate the important aspects of a task compared with a non-expert (Hammond, 1996). The main criticism on this criterion is that such ability is necessary but not sufficient in order to qualify someone as an expert as

it is not always the main trait that we are expecting from experts especially when experts are involved in complex problems.

A number of *behavioural characteristics* are considered to be common in experts such as creativity, perceptiveness, stress tolerance and others (Abdolmohammadi & Shanteau, 1992). Using these characteristics someone could build a profile that would serve as a benchmark according to which it could be possible to identify experts. Specific process could be developed in order to test the suitability of some persons using the aforementioned benchmarks. There are three flaws associated with this criterion based on the study of Shanteau, Weiss and Thomas (2002). Not only these tests do not really exist for many of these behavioural characteristics, but even if they were they should be adapted to each specific field being tested. Last but not least is not verified that this behavioural characteristics constitute only a specific attribute of 'experts' as common people might have some of them.

Conducting *knowledge tests* can be another way to identify experts. There could be a process to test the knowledge of any person considered as expert (Shanteau et al., 2002) Nonetheless, the main problem is that knowledge many times is just a part of the expertise, combined with the way somebody is using this knowledge on practical matters. The applicability of knowledge often helps to identify somebody as an expert.

Another approach argues that experts should be created through *training programmes* (Chase and Ericson, 1981). However, two problems arise with this approach. First of all, expect from training on a particular field as mentioned throughout the last section, expertise is highly connected with experience and other behavioural characteristics. Second this would be very costly, and time consuming to apply.

The main aim of presenting these selection criteria, together with the problems that might arise when using them, is to address the shortcomings that studies which employ 'experts' may have in terms of credibility. Nevertheless, in all research methods that rely on expert's opinions these problems can be limited but not vanished.

4.5   The Research Methods

4.5.1   Introduction

In this sub-section, the methods employed to gather the data necessary for the analysis of the proposed theory will be discussed. This section is, in turn, divided into three main methods of collecting data for this research:

- The electronic survey that was conducted for validating the proposed theory mentioned in chapter 6

- The numerical experimentation in order to explore the tendencies from the generated results of the system is analysed in chapter 7 and

- The method of interviews aiming to offer validation for the second research question and seek further explanatory insight for the usefulness of the system; as during the interviews it was used by the participants in practice. In addition, these interviews had as a mission to validate the main objectives of this tool.

As already stated a 'mixed-methods' approach was employed. According to Denscombe (2007), the use of the mixed-methods has the following aims:

- To achieve improved accuracy of the findings

- To achieve a more complete picture of the study

- To compensate for the inherent weaknesses of one with the use of another that will offset these weaknesses

In this thesis, use of the above-mentioned combination of methods should be interpreted as our eagerness to collect reliable data and thus, succeed in conducting a high quality analysis.

4.5.2 The Survey

In order to validate the main components of the proposed theory, the variables and the concepts employed, a survey was conducted. With the term survey method, it is inferred an electronic questionnaire which was distributed among a well-defined pool of academics. The relevant electronic questionnaire was divided into five sections. Each of the first four sections served the main purpose; which was to validate the proposed theory and thus, the system. However, the last section incorporated an open question in order to elicit comments from the participants which might emphasize any flaws in our process.

In the first section, a set of attitude questions have been used in order to measure the significance of the main concepts that have been used as building blocks in our theory. In order, to achieve reliable and valid results for the indicators used, measurement theory implies that there must be a link between the actual concepts that are measured and the observable facts (Procter, 2001). Nevertheless, attitude question use a kind of scale through which participants signal their level of agreement (Procter, 2001). In this set of questions, the Likert scale was used as it is an established method to measure attitude in questions like the three questions incorporated in the first section.

In the second section, the participants encountered two multiple choice questions. These questions have been used for confirmation purposes. The main aim of this section was to check the validity of the constructed scale for the variable 'Economy Coordination'. Thus, these questions attempted to check if the two countries which were used as the two extreme values of the scale by the researcher, are indeed perceived as such by the participants in the survey.

Section three had a crucial role for the validation of the main components of the proposed theory. Fifteen alternative variables that according to our review of literature might influence Labour and Management negotiations have been incorporated in this question. An option to specify another variable, that was not included in the list, was offered to the participants. All participants were allowed to select more than one of the choices.

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The next section incorporated six closed questions that aimed to measure the significance of some of the factors that influence negotiations, which according to our judgement and the literature needed extra cross validation. In this section, there were mainly variables that have been used in the system. In addition, there were some variables that our intuition, after reading the literature, guided us to include them in this section. The scale used in order to rate these variables incorporated a range from 1 to 7 that corresponded to values from "Not Significant" to "Very significant" (Denscombe, 2007).

In the last section, participants had the opportunity to express their comments about the concepts employed in the questionnaire and express any further insight that could be used for explanatory purposes. This open question was optional for the participants. This was due to our aim to secure the valid participations without transforming the questionnaire into a long and demanding one.

Something important that should be addressed in this section that is relevant with the analysis of the data is the following. In order to analyse the results, the categories were coded according the number of sequence, as appeared in the relevant questions. Nevertheless, the same procedure could be done automatically by the web tool that we used in order to design and conduct the survey.

The survey was designed and hosted in a web-page called 'Bristol-Online-Survey'. According to Denscombe (2007, pp. 160-161) web-based questionnaires have two main advantages:

The design of the questionnaire is more refined compared with other forms of internet surveys such as e-mail questionnaire and a questionnaire added to an e-mail

The answers can be automatically transferred in the spread-sheet; offering speed and accuracy to the process

On the other hand, they have one main disadvantage:

It demands higher skills from the participants in order to access the survey; nevertheless a hyperlink in the invitation can solve this problem

(Denscombe, 2007)

The solution that is mentioned above has been used in this research in order to overcome this problem. In the call distributed, for participating in the questionnaire, a hyperlink was incorporated in the email so the experts where transferred directly to the survey.

The process, according to which the pool of experts has been constructed, in order to distribute the questionnaire of this research, followed the non-probability sampling method called *purposive sampling*. According to Arber (2001; p. 61) when the main target of the study is 'to generate theory and a wider understanding of social processes or social actions, the representativeness of the sample may be of less importance and the best sampling is often focused or judgemental sampling.'

In order to achieve better results before distributing out the questionnaire a pilot survey was conducted with a small number of participants that had similar characteristics with the experts that were included in the lists of the purposive sample

The experts that participated in the survey have been selected according to specific criteria. In order to create the lists of experts that would be the actual participants of our survey we used as a sampling frame of the academic society relevant with this research theme.

First of all, the academics that should be members of an Economic department or a Business School in a University that is based on one of the abovementioned countries. It is worth mentioning, that with the term 'member' we mean mainly researchers but excluding Ph.D. students that were in these departments.

Secondly, their expertise should be placed in one of the fields mentioned below, according to the relevant information available in their public research profile found in their department's website or their personal research website. All academics that declared Labour Economics as their field of expertise have been instantly included in our pool of experts. Moreover, any member of these departments that mentioned the words 'negotiations' and 'wage bargaining' in their profiles automatically qualified to be regarded as a person suitable to participate in

our survey. With this in mind, a combination of conditions applied in order to encompass academics with research profiles relevant to the fields of Game Theory, Human Resource Management, Industrial Economics or Organizational Theory. As a matter of fact, the aforementioned fields were not a sufficient clause in order to enlist a researcher in our purposive sample but worked as a necessity. In addition to aforementioned fields, there should be an extra hint, either in their publications or in their research description, usually available in their web-profiles, which would relate these fields with issues on employment relations, on negotiations, on wage bargaining or on institutional theory.

4.5.3 Numerical Experimentation

In order to examine all the possible results that can be generated by the system that was created for the purpose of this study, a numerical analysis was employed.

In particularly, the numerical analysis takes into account all different values for each uncertain variable and computes all the possible results for the so called 'Final' latent variable. As a research method served a confirmatory purpose in order to assess the tendencies of the results produced by the system which followed the prescriptions of the proposed theory. According to these tendencies, which are not known to the researcher in advance, interesting findings might arise in relevance to the power of the proposed theory to promote integrative agreements.

4.5.4 Interviews

Interviews are a commonly used tool for qualitative research in Social Sciences. Their structure can vary according to the depth of insight sought by the interviewer (Robson, 2002). As Fielding and Thomas (2001, p.125) argued 'interviews are often used to establish the variety of opinions concerning a topic or to establish relevant dimensions of attitudes'.

Interviews usually aim to elicit different opinions or to extract the relevant established attitudes that are connected with the theme of the study (Fielding and Thomas, 2001)

Therefore, the method of interviews was used in order to seek further insight on the main dimensions of the system constructed. It was stated by Lofland (1971, p. 76) open questions in interviews serve the purpose to 'elicit rich, detailed material that can be used in qualitative analysis. The objective is to find out what kinds of things are happening rather than to determine the frequency of predetermined kinds of things that the researcher already believes can happen.'

According to their structure the interviews can be classified into three categories;

- Standardised or Structured: the topics examined, the questions and their sequence are identical in all interviews within a specific context ;

- Semi standardised or Semi-Structured: besides the main topics there is some flexibility for other themes to emerge during the interview depending on the discretion of the interviewer; and

- Non-standardized or unstructured: the interviewer is free to ask something from a broad list of topics with a different sequence each time, having the ability to interrupt and ask something completely different.

(Fielding and Thomas, 2001. p. 124)

In this research, the type of interview structure that was selected was the semi-structured one. The choice to include a semi-structured type of questionnaire was mandated due to the different background studies or expertise of the participants, which called for a different approach in order to have a better understanding of the purpose of some questions. In order to achieve better results in this research an attempt was made to align with the two principles of inform research interviews mentioned in (Fielding and Thomas, 2001).

The interview-questionnaire consisted of three sections. The first section encompassed a case study, and a question in order to validate the proposed theory was asked. In, particular, the interviewee had to assign probabilities in the cells of a 2X2 matrix, offering his or her estimations according to the information provided in the case study. The construction of the case study (see Appendix II) was based on real facts, as published in articles on the website of Reuters news agency (http://uk.reuters.com/article/2012/04/02/germany-wage-

idUKL6E8F28SN20120402 and http://uk.reuters.com/article/2012/02/24/germany-union-idUKL5E8DO37G20120224).

The second section was concerned with the use of the system and incorporated questions which had as their main objective to seek confirmatory information in relevance with the variables and their scales as incorporated in the system.

The third section encompassed two open questions that focused on the validation of main theoretical building blocks used in the proposed theory.

The experts that have been included in the set of interviews had to fulfil a specific profile.

In our research the key experts that would offer high value insight relevant with the concepts included in our research. Serving form important public positions within a relevant field such as Ministers of Finance and Ministers of Employment and Social Affairs combined with an academic background, in economics or employment relations constituted the ideal profile for a candidate. The participation in position that is relevant with real life negotiations, as Labour Union representatives, was an extra feature that had a decisive role to include somebody in the 'purposive sample' for interview.

4.6 Conclusion

To sum up, in this chapter the methodology of this thesis was presented. The philosophical stance that this research project is following is housed in the stream of pragmatism borrowing a considerable amount of elements from critical realism.

In addition, the scientific approach that was used in order to construct and validate our theory was the deductive approach. The literature that was used in order to construct the proposed theory was based on a variety of scientific fields. This was due to the complexity of the topic as a variety of elements had to be taken into account in order to add excellence in the proposed endeavour.

Moreover, the research strategy that has been employed in order to support our theory building has been discussed. The strategy used was the 'mixed-methods' approach as a combinations of methods have been rendered suitable in order to achieve the great results. In turn, a detailed description about the characteristics of each research method (survey, numerical experimentation, and interviews), which has been used for data collection, has been presented. The latter serves as an excellent introduction of the next three chapters where the data collected by each method (survey, numerical experimentation, and interviews) are presented.

5. System Application

5.1 System Overview

In order to test the proposed set of rules a rule modeling software was developed. Except for the possibility to use the proposed rules, the software provides also a dynamic construction of sets of rules and a valuation mechanism that produces the final result for specific inputs. The constructed rule sets can be saved and reused. As a result, it can support experts in labour-management disputes depicting an objective assessment of the reality according to the proposed theory.

The basic entities of the system are the input parameters, the rules and the set of rules (collection of rules and input parameters).

5.1.1 Input Parameters

The input parameters of the system have the following properties:

- Name

- Description

- Input range

- Selection Input Range

The name of a parameter is used to identify the parameter in the system. The description provides to the user a clear and extensive overview of the parameter by giving further details about it. The input range is a set of categorical values. It is the range of values from which the user is able to select one or more in order to assign values to the parameter. The selected parameters shape the actual input to the rules which is called selection input range. An example of an instance of a parameter is given in Table 12 below:

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Name	Relative Profitability (RP) of the Firm or the Sector
Description	Which of the negotiating groups has, according to historical events (tradition) and the current economic environment, greater bargaining power?
Input range	{Low, Average, High}
Selection Input Range	{Average, High}

Table 12: Example of an Instance of a Parameter

5.1.2 Rules

A rule in the system has following properties:

a) Name

b) Description

c) Layer

d) Input Parameters

e) Output Range

f) Result Table

The name of a rule is used to identify the rule in the system. In the description property more information about the rule appears. The Layer property defines in which layer of the general set of rules the rule belongs. The Layers will be described in the set of rules section. The input parameters of a Rule consist of a set of two Input Parameters. The output range is a set that consists of the possible categorical results of the rule. The result table contains all the combinations of the input values from the input ranges of the two input parameters and the result that the rule provides when having these values as inputs.

Name	RELATIVE BARGAINING POWER
Description	Which of the negotiating groups has, according to historical events (tradition) and the current economic environment, greater bargaining power?
Input Parameters	{ Manager, Labour } (set of Parameters with value range {low, high})

Output Range	{Manager, Labour} (set of values)		
Result Table			

Manager	Labour	RELATIVE BARGAINING POWER
Low	Low	Management
Low	Medium	Labour
Low	High	Labour
Medium	Low	Management
Medium	Medium	Management
Medium	High	Labour
High	Low	Management
High	Medium	Management
High	High	Management

Table 13: Properties of the Rules

5.1.3 Set of Rules – Layers – Final Rule

The rules of the system form a set of rules. In this set the simple rules "get connected" (the result of a rule serves as an input to another) and form a graph (see Figure 6). In this graph, which is a directed and acyclic graph (DAG), the nodes symbolize rules and edges serve as inputs-outputs.

The output of one specific rule, the final rule, does not get connected to any other rule. It produces the final result of the rule set.

Each rule belongs to a layer. The number of layers (NL) of a set of rules is the maximum length of all paths from any node (rule) to the final node (rule) +1. The final and only the final rule, belongs to level (NL+1). According to their distance from the final node (d) the other nodes (rules) belong to layer (NL+1)-(d). The current version of the system supports up to 4 layers. In Figure 8 the longest path is from node RELATIVE BARGAINING POWER to FINAL and has a length of 3. So the FINAL rule belongs to Layer 4 (3+1). RELATIVE BARGAINING POWER belongs to Layer 1 (3+1-3).
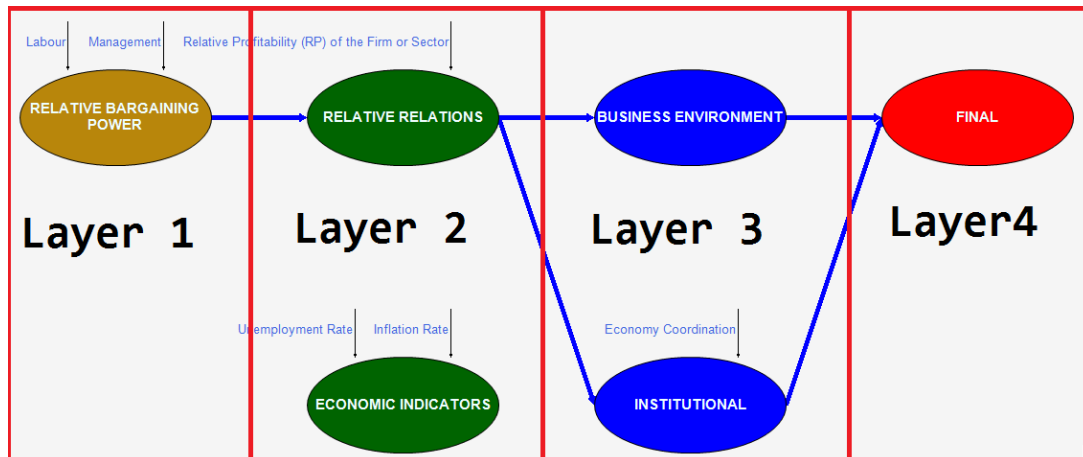
Figure 8: The Graph of the System

5.1.4 Evaluation of Rules

The evaluation phase follows this basic path of principles:

- For each input parameter, the user selects a value of the range of the input parameter (selection input range has one element)

- The system evaluates each rule of level 1 according to the user defined input value of each input parameter and the result table of the rule. The system looks up the result table, identifies the row which corresponds to the inputs and provides the result from the result column of the table. The evaluation of rules of level 2 follows and so on until we reach the FINAL rule

- The result of the FINAL rule is the result that our set of rules produces for the given input.

If the user defines more than one possible input values for one or more input parameters (selection input range has one or more elements) the system performs the basic evaluation for each combination of input values. For each output combination we get the results of each basic evaluation and, in turn, we calculate average of these results at the end of the procedure. This procedure is presented in pseudo code below (Figure 9):

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```
FinalCC =0;
FinalCNC=0;
FinalNCC=0;
FinalNCNC=0;
Build all the combinations ς of inputs;
For each c in ς do
{
Valuate rule set with input c;
FinalCC = FinalCC+ resultCC;
FinalCNC = FinalCNC + resultCNC;
FinalNCC = FinalNCC + resultNCC;
FinalNCNC = FinalNCNC + resultNCNC;
}
FinalCC = FinalCC  /  |ς| ;
FinalCNC = FinalCNC |ς|;
FinalNCC = FinalNCC /  |ς|;
FinalNCNC = FinalNCNC /  |ς|;
(*|ς| =  Number of Combinations  *)
```

Figure 9: Evaluation of a Rule in Pseudo Code

5.2 User Interface

The main form of the application (system) has a user menu that gives 4 basic options (Picture 1).
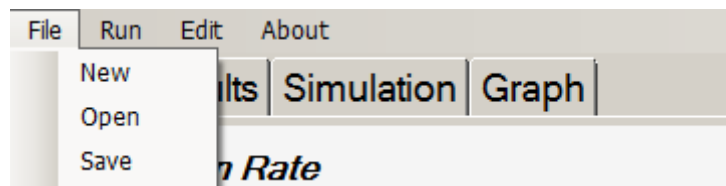
Picture 1: Menu - Basic Options

i. File – contains all the file related options and more specifically

    a. New – resets the current model

    b. Open – opens a rule set (model) from a file

    c. Save – saves the model and actual input values in a file

ii. Run – is used after the definition of the actual input values

iii. Create-Edit - used to set up or edit rule sets

iv. About – contains info about the software

There are also 4 basic tabs in the main form (see Picture 2) which help to organize the control flow and the information given by the system.
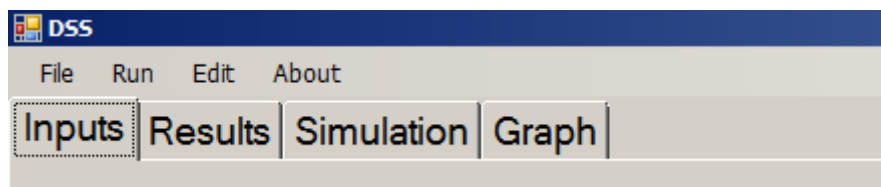
Picture 2: Basic Tabs of Control and Information

These tabs are the following:

i. Inputs: the actual values for the inputs parameters get specified

ii. Results: the result of the evaluation of the set of rules for the current inputs gets is situated here

iii. Simulation: an analytical evaluation of each rule can be found in this tab

iv. Graph: a visual presentation of the rules in a graph is located here

5.3 Example – Constructing a Simple Rule Set.

This example shows the construction of a simple rule set. It will have 3 rules, 2 of them in level 1 and the FINAL rule in layer 2. The rules in level 1 will be RULE1 and RULE2. RULE1 will have as input parameters Parameter1 and Parameter2 and RULE2 will have

Parameter3 and Parameter4 as input parameters. The output of the rules in level 1 will be combined in the FINAL rule in layer 2.

To set up this example the user has to select New from the Main Menu.
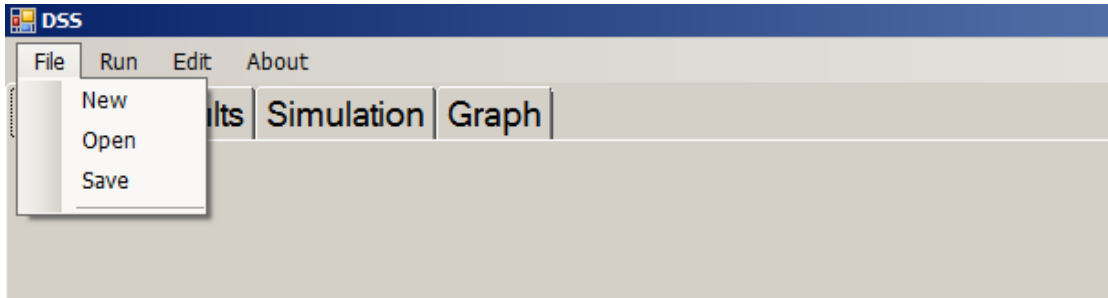
The form that allows to create (or edit) rules appears. When no model has been loaded the form for editing our set of rules and its parameters appear empty.
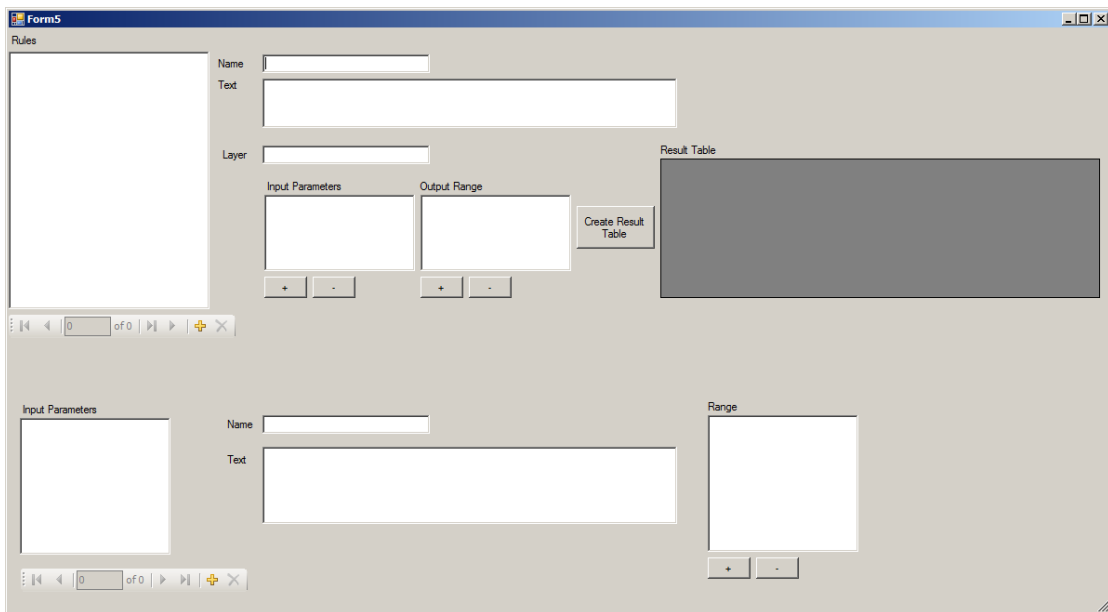
Picture 4: Empty Template for Rule Creation

Firstly the user adds the Input parameters. This happens by pressing the (+) button in the input parameters section (Picture 5).
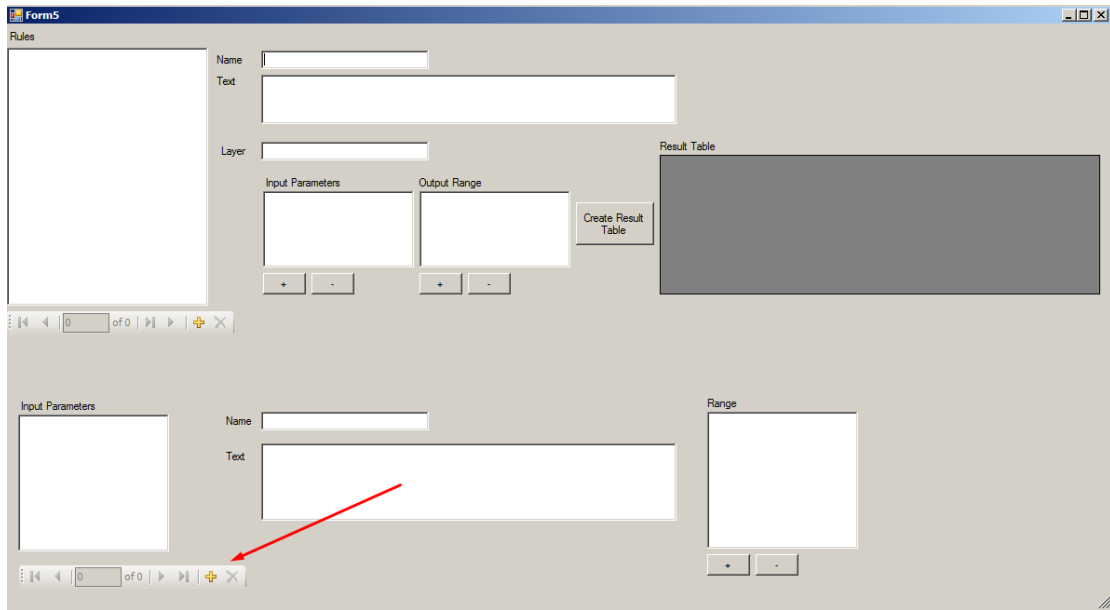
Picture 5: Adding Input Parameters

This action creates automatically a new Parameter. In the name fields we put Parameter1. To define the range of the parameter the user has to press the (+) in the Range Section.
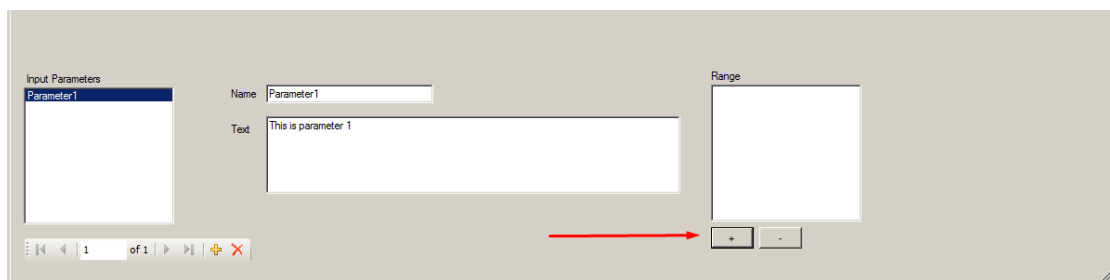
Picture 6: Adding Range of the Parameter

The system asks for a new value to add to the range. In this example we add the value "True" (Picture 7).
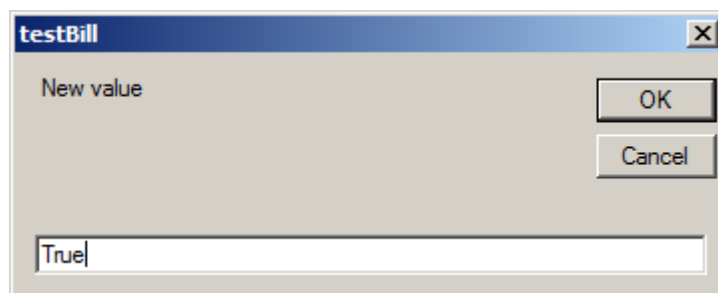
Picture 7: Adding a New Value

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The new value appears in the Range list of the parameters.
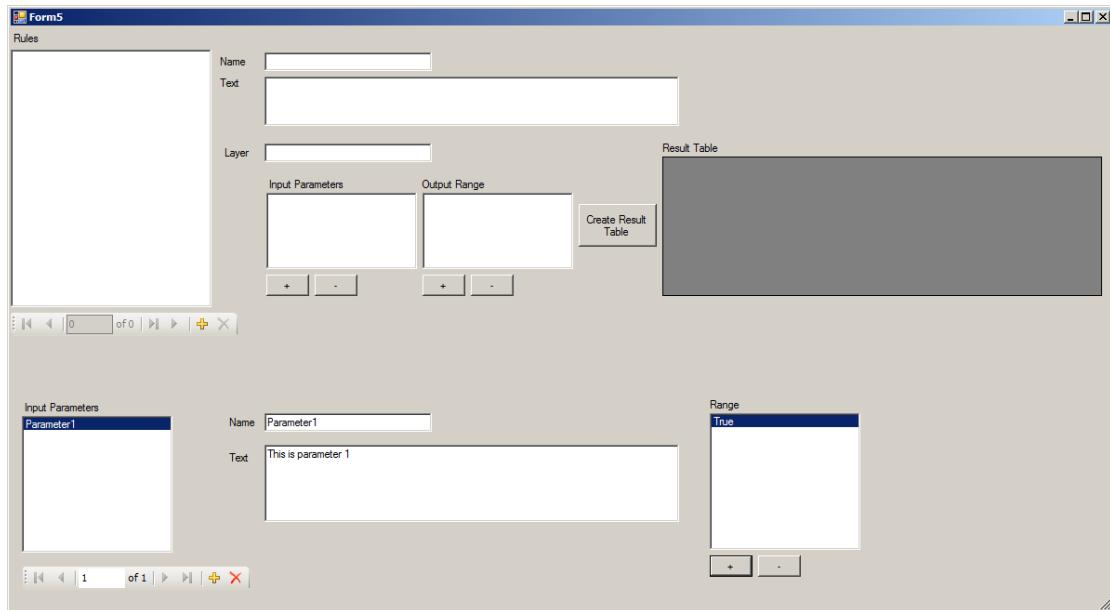
Picture 8: The New Value Appears in the Range List

By following the same procedure we add also "False" to the range of Parameter1.

We add also another parameter, Parameter2 and add to its range "Low", "Medium", "High" (Picture 9), Parameter3 with range "S","M","L","XL" (Picture 10) and Parameter4 with range "0","1" (Picture 12).
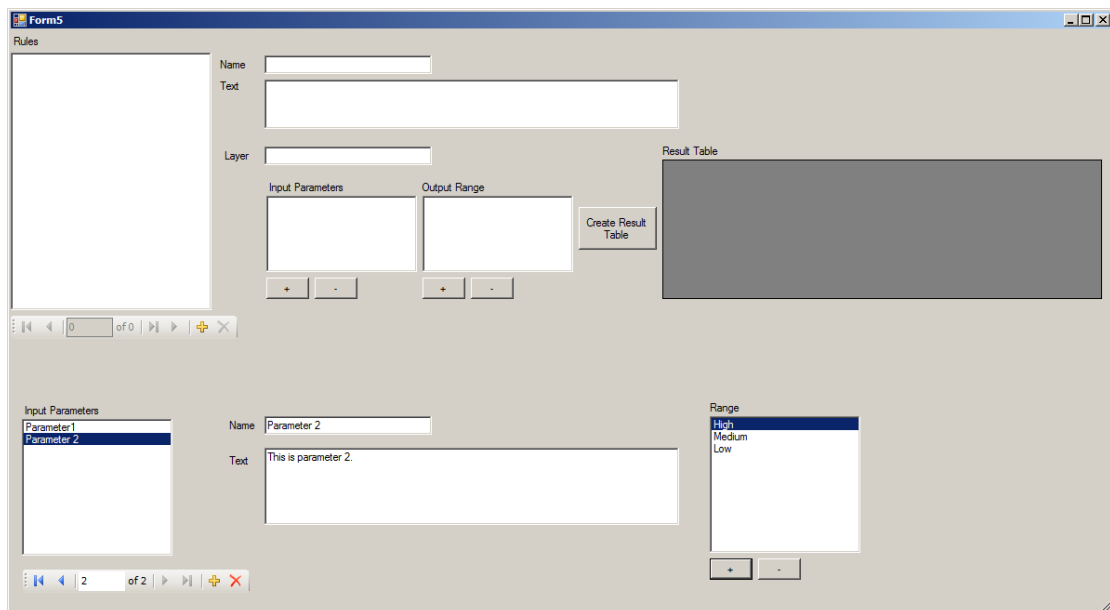
Picture 9: Parameter 2 with its Range
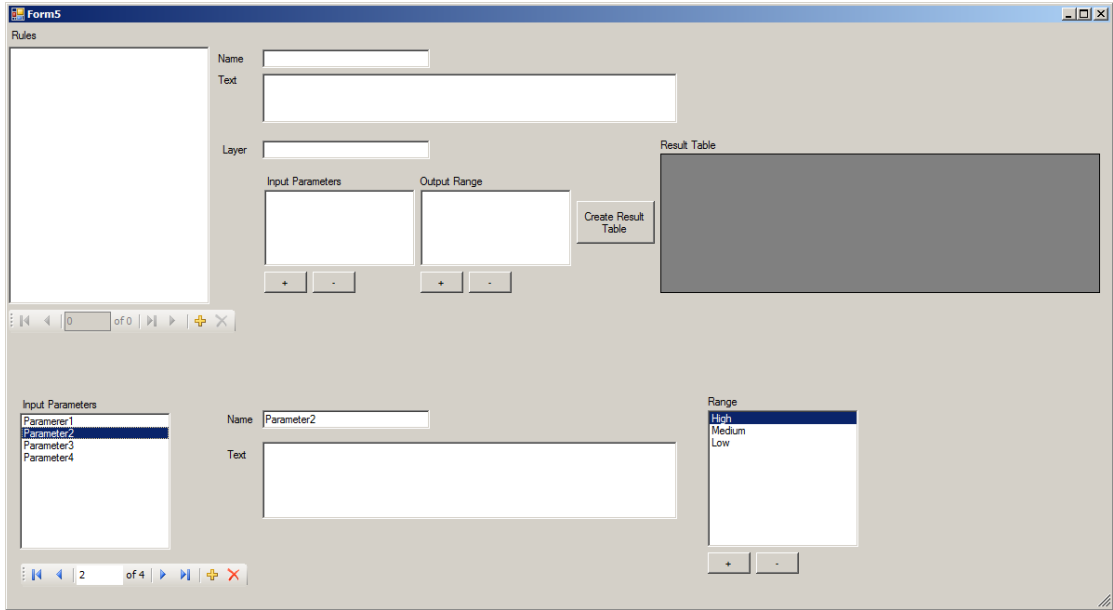
Picture 10: Adding more Parameters
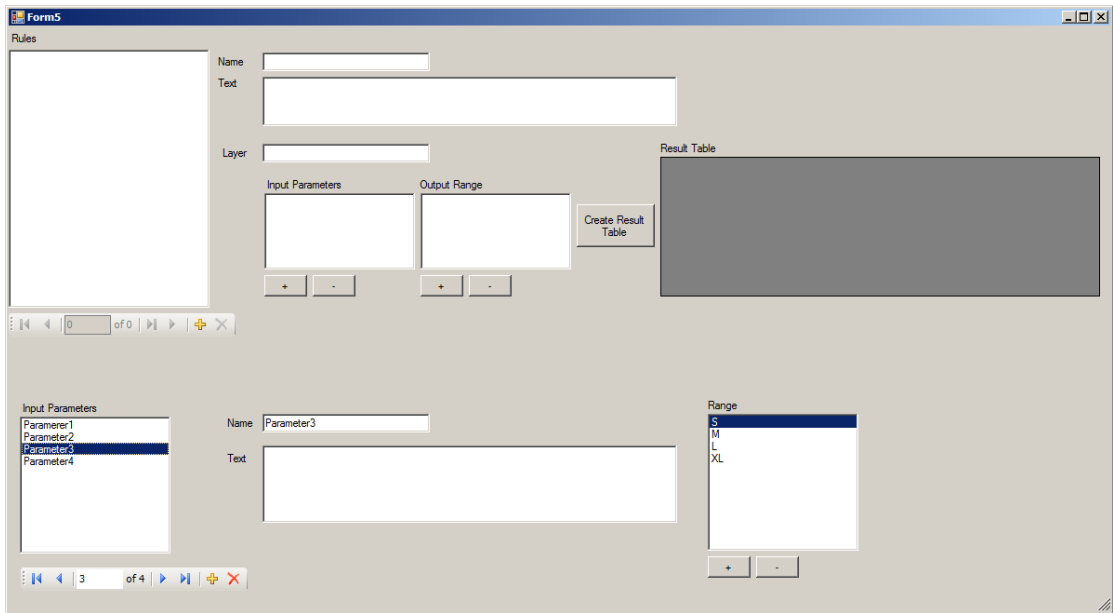
Picture 11: Adding Range for Parameter 3

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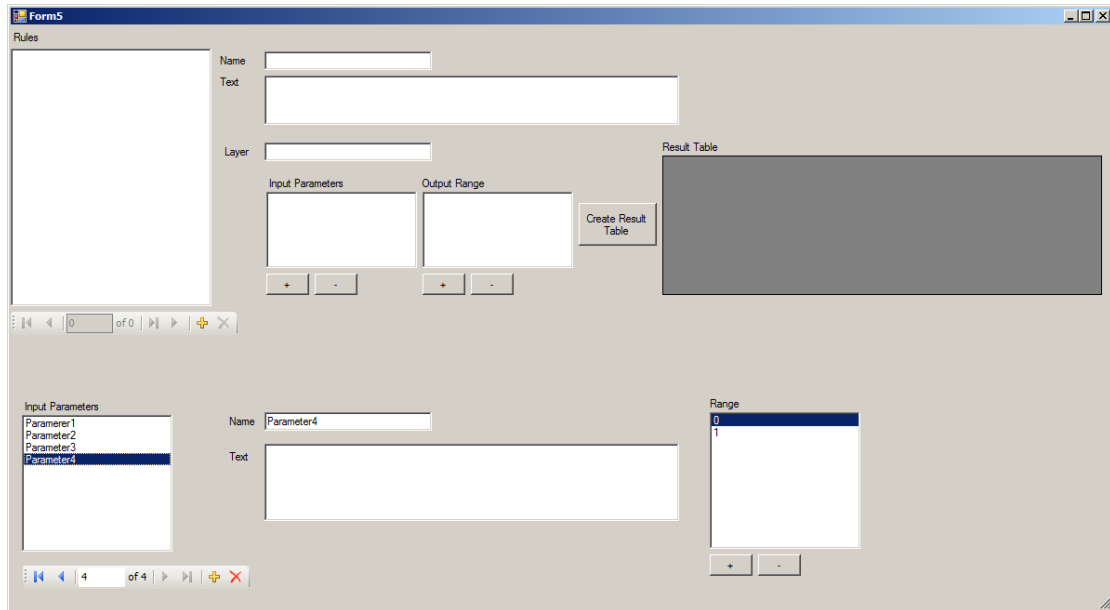
Picture 12: Adding Parameter 4 and its Range

Further, the 3 rules have to be added to the rule set. This gets achieved from the rules section of the form. When the user presses the + button in the rules a new rule is added to the rule set. In the "name" field the user can change the name of the rule. The "description" field can contain details about the rule.
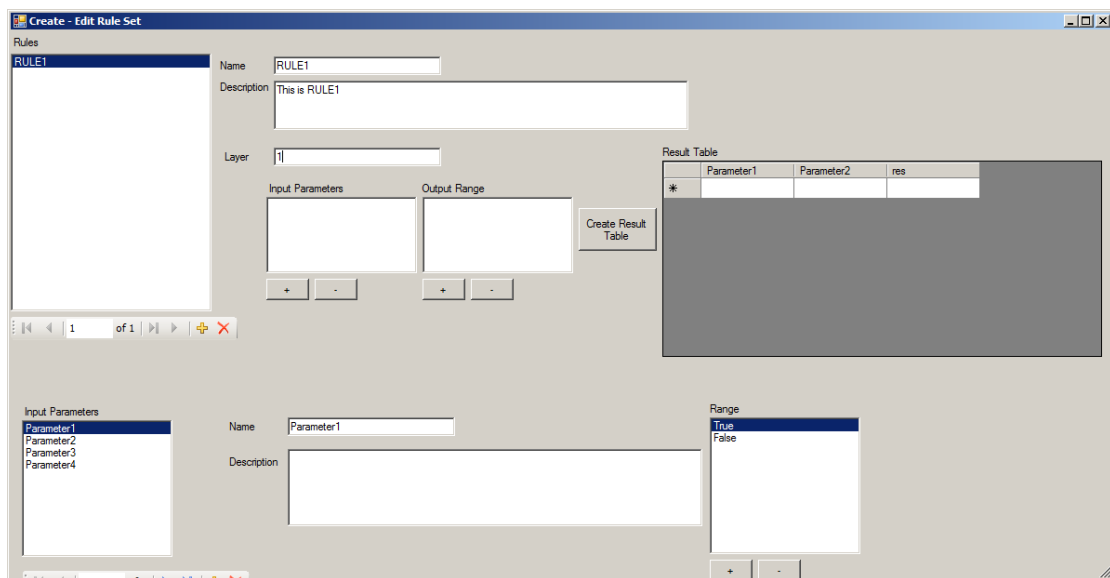
Picture 13: Description of Rule

The user has also to provide the layer in which the rule is contained. As mentioned before, in our example RULE1 and RULE2 belong to layer 1. The user has then to define the 2 input

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parameters of the rule. By pressing (+) under input parameters all available input parameters come up and the user can select one out of them.
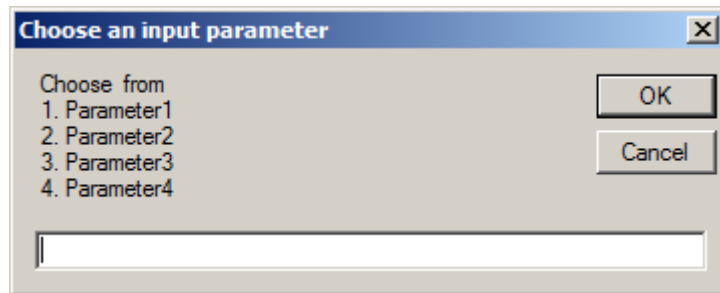
Picture 14: Selection of an Input Parameter

In this example, the user chooses at first place parameter1 and by repeating this procedure parameter2.
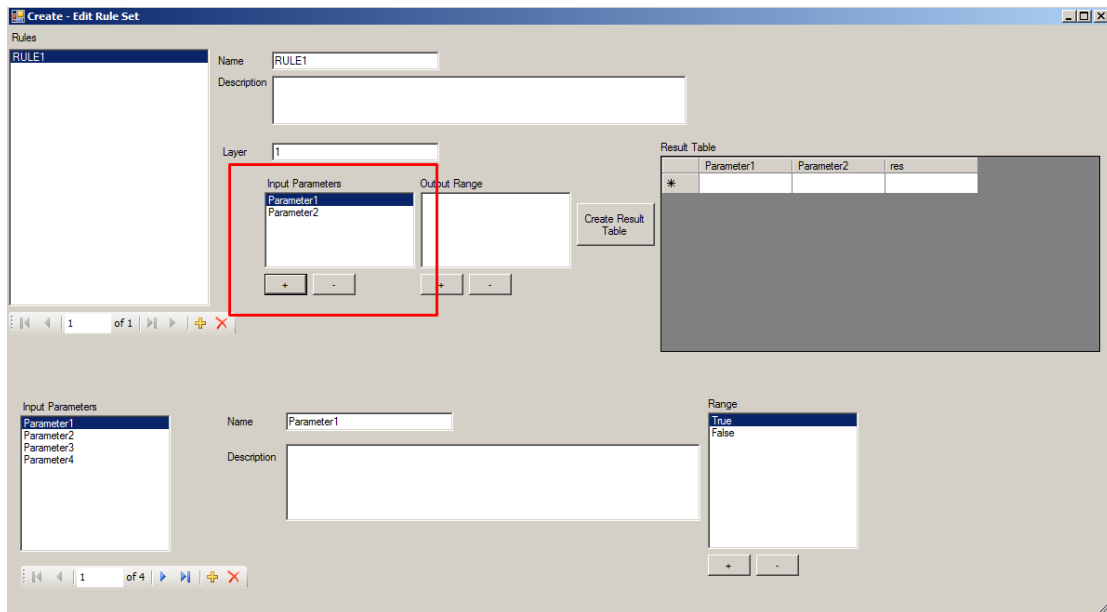
Picture 15: Adding another Input Parameter

In the next step the output range of the rule has to be defined. The output range is a set of discrete values that define all possible outcomes of the rule. By pressing (+) under output range new values can be added in the set of the rule results.
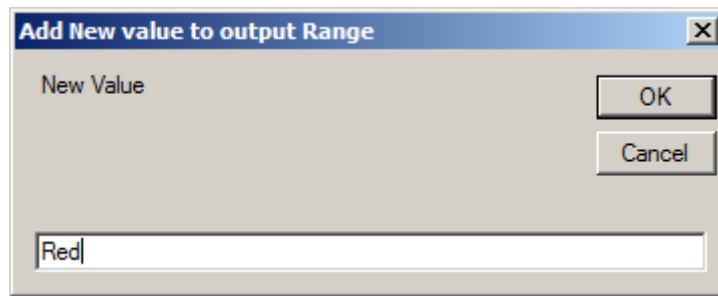
Picture 16: Adding a New Value

For RULE1 we add "Red" and "Green" as possible outputs.
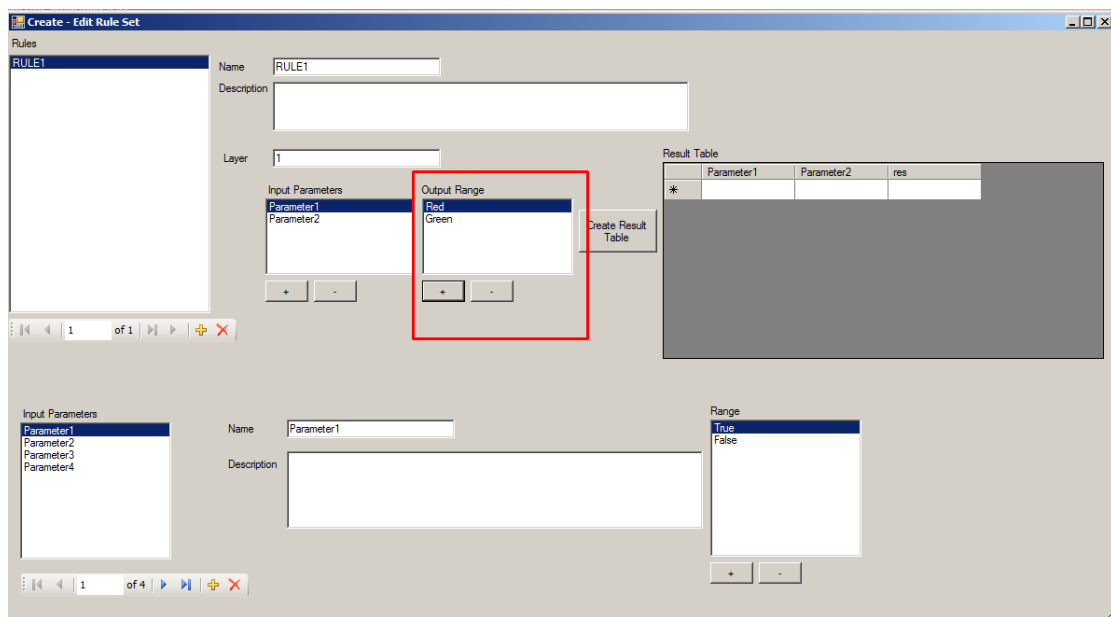
Picture 17: Adding Output Range

After defining the input parameters and the output range it is possible to map how the final results of the rule will be produced. By pressing the "create result table" button the system creates the table with 3 columns.
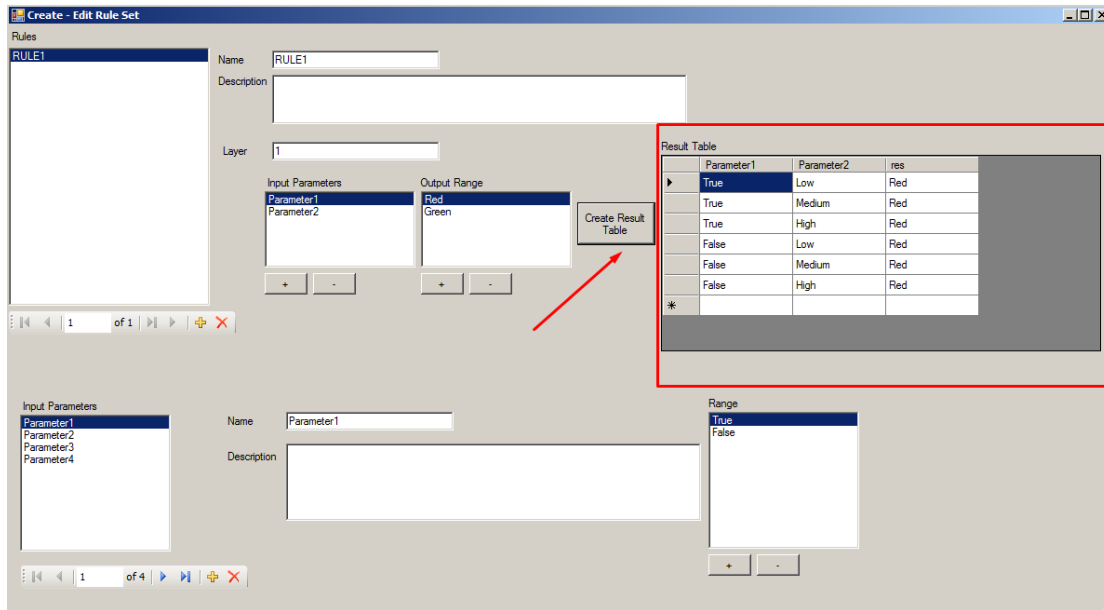
Picture 18: Creating the Result Table

The 1st column contains values from the range of the 1st input parameter of the rule, the 2nd contains values from the range of the 2nd input parameter of the rule and the 3rd contains values from the output range of the rule. The first 2 columns represent the inputs and the 3rd the output for the specific input. The system creates automatically all the possible combinations of the ranges of the input parameters. Initially, the 1st element of the range becomes the default output for all input combinations. In Picture 19 the initial state of RULE1, as it is created by the application, is presented. For the nine possible input combinations (values from range of Parameter1 combined with values from Parameter2) the default result is the first element of the output range of RULE1 and this is "Red".

Picture 19: Initial State of Rule1

The user can then edit the output values and set the appropriate outputs for the input combinations. For example, the user decides that for input ("False" and "High") the output should be "Green". By clicking on the appropriate cell a new form appears where the user can select a value of the output range of the rule, which for RULE1 is "Red" and "Green" (see picture 20).
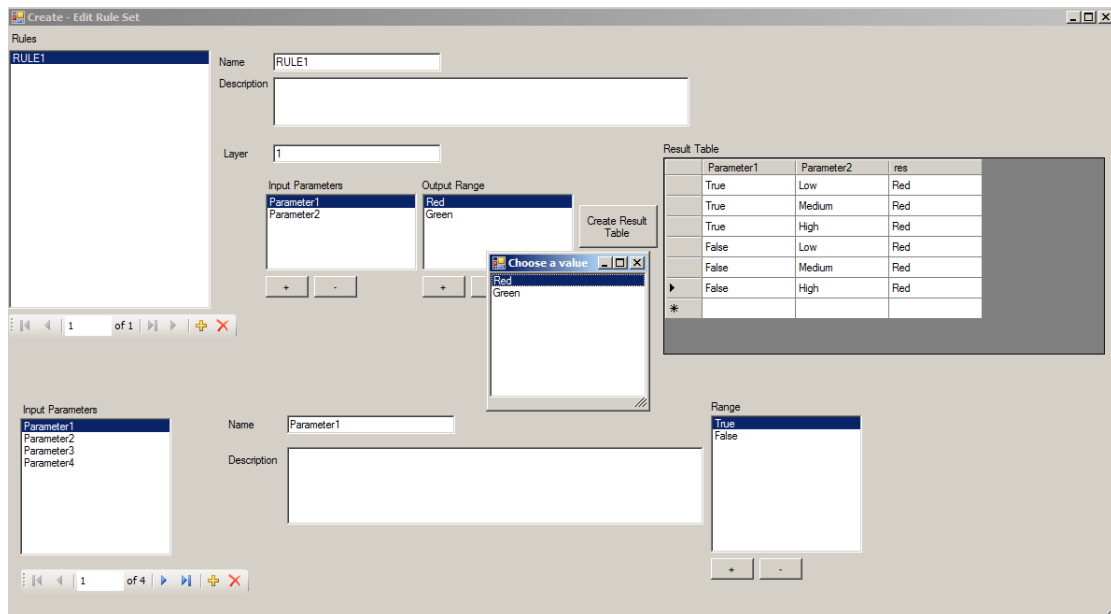
To set the new value the user has to select one from the list, here it is "Green" (see picture 21).
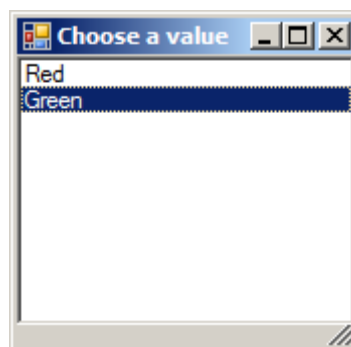
The new Result Table for RULE1 can be seen in Picture 22.

By following the same procedure the user can add the 2nd rule (RULE2) with inputs Parameter3 and Parameter4 and with output range {"Slow", "Fast"} in layer 1.

Finally, the user creates the rule which creates the output of the whole rule set. This rule must be called FINAL and belongs always to the last layer of the rule set and should be the only rule in this layer. In this example the FINAL rule belongs to layer2.
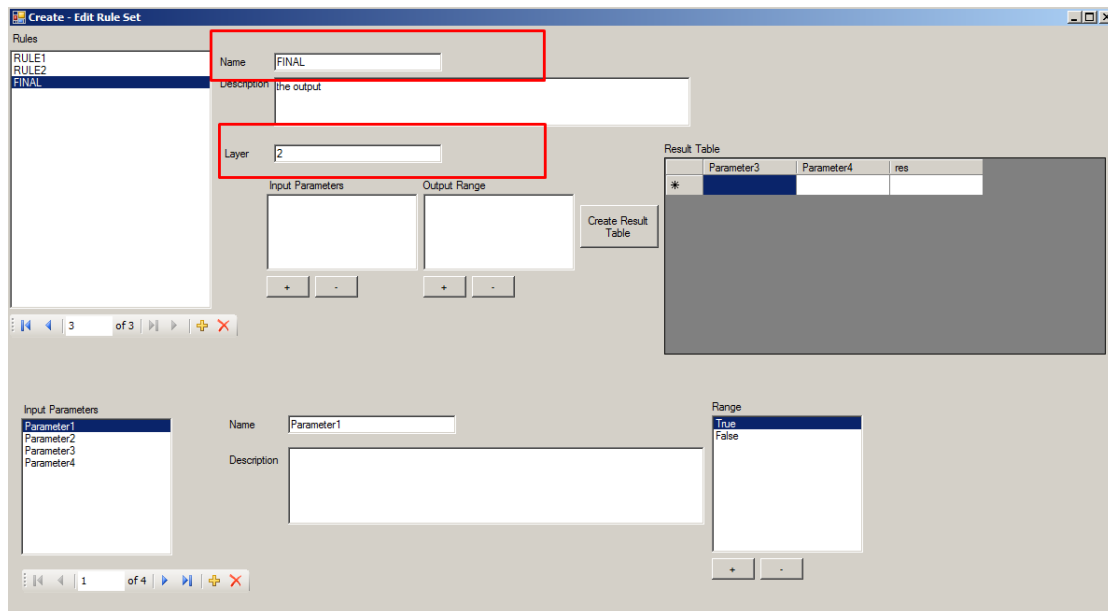
Picture 23: The Final Rule

When a rule belongs to a layer x that is greater than 1 it can use as input parameters not only the defined parameters of the rule set but also the results of the rules that belong to layer x-1.

In this example, when the user presses (+) for adding input parameters to the FINAL rule, except for all input parameters also the outputs of the two rules of layer 1 appear (Picture 24).

Picture 24: Adding Input Parameters to the FINAL

For the purposes of our example the user selects the outputs of RULE1 and RULE2. Except from the constraint dictating that the FINAL rule has to be the only rule in the last layer, the FINAL rule has to have outputs in form of 4 numbers delimited by a space character. These 4 numbers must have a sum of 100. They define the values of P1(C-C), P2 (C-NC), P3 (NC-C), and P4 (NC-NC). In our example, the user chooses insert "100 0 0 0" and "0 0 0 100" (Picture 25). This means that for the first tetrad P1 will have a value of 100 and the other outputs a value of zero as for the second tetrad P4 will have a value of 100 and the other outputs will have zero as a value.
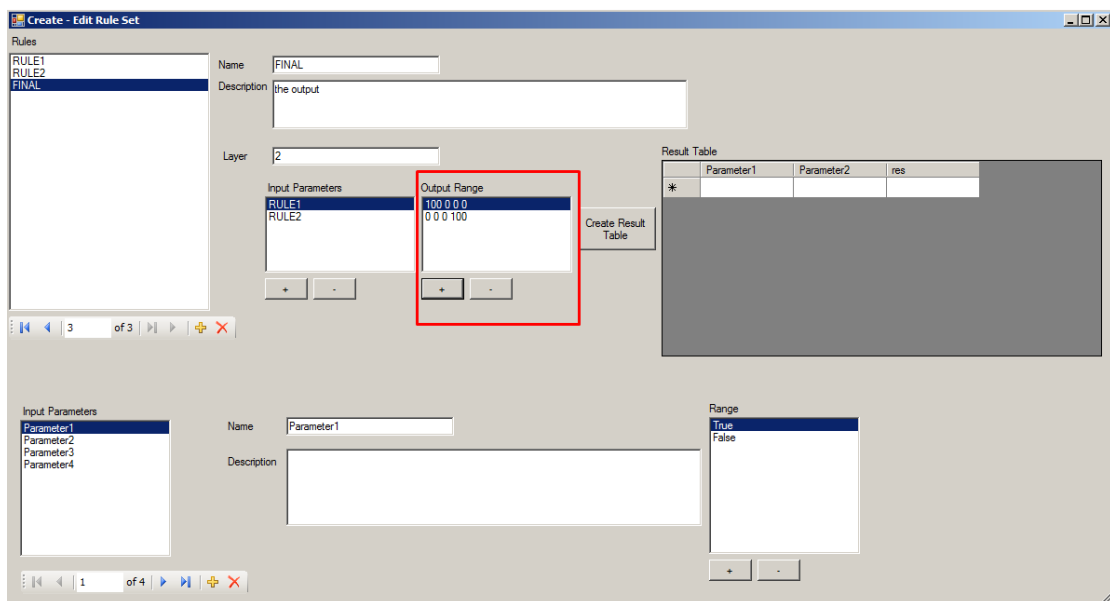
Picture 25: Inserting the Output Range of FINAL

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By creating the result table of the final rule and defining the specific outputs for specific inputs the creation of the rule set is over. The user is able to visualize it in the "Graph" tab (see Figure 10) and the rule set is ready for use.
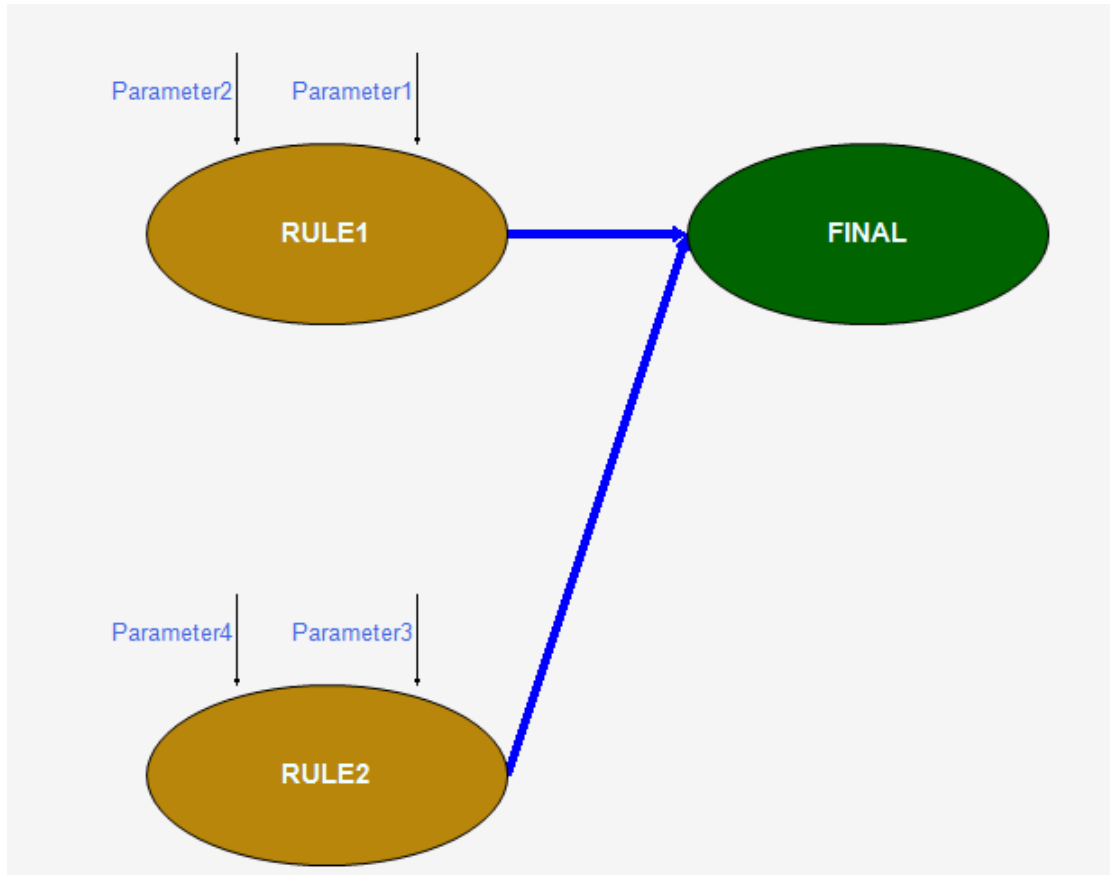
Figure 10: The Graph For the User

5.4 Example – Using a Rule Set

By following the procedure defined in paragraph 5.3, a rule set through which our proposed rules get modeled was developed. The creation-edit form for this rule set is displayed in Picture 26.
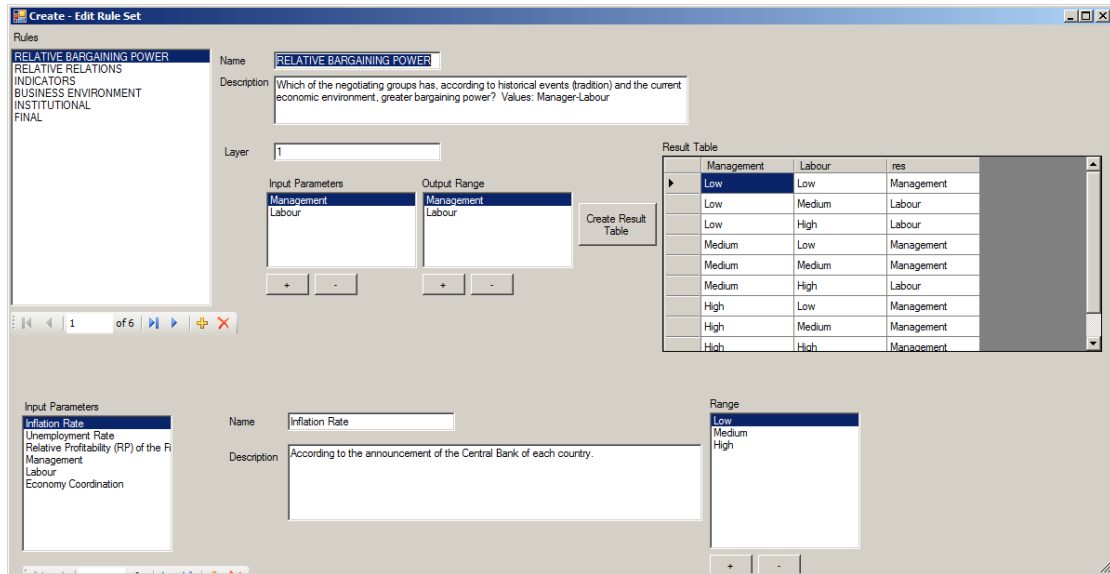
Picture 26: The Creation-Edit form for this Rule Set

There are six Rules (RELATIVE BARGAINING POWER, RELATIVE RELATIONS, INDICATORS, BUSINESS ENVIRONMENT, INSTITUTIONAL, FINAL) and six Parameters (Management, Labour, Relative Profitability of the Firm or Sector, Inflation Rate, Unemployment Rate and Economy Coordination) with the according ranges, output ranges, output ranges, input parameters and result tables. The graph of the rule set is presented in picture 27. In this graph the 4 layers of our model are highlighted with different colors.
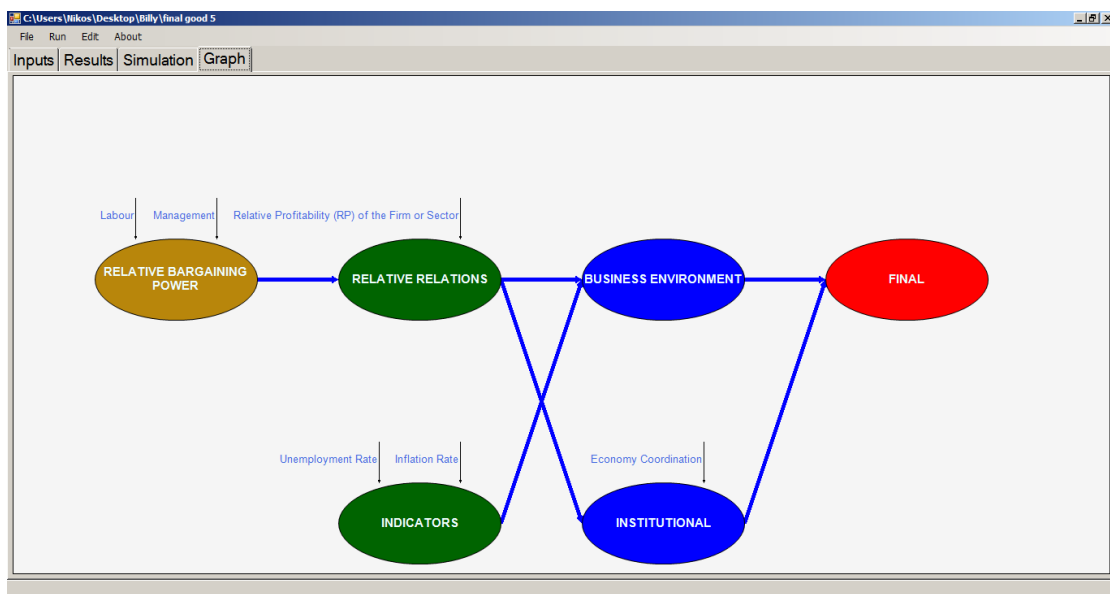
Picture 27: The Graph of the Rule Set

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In order to use this rule set the user has to start from the main form and the tab "Inputs". There, all input parameters appear.
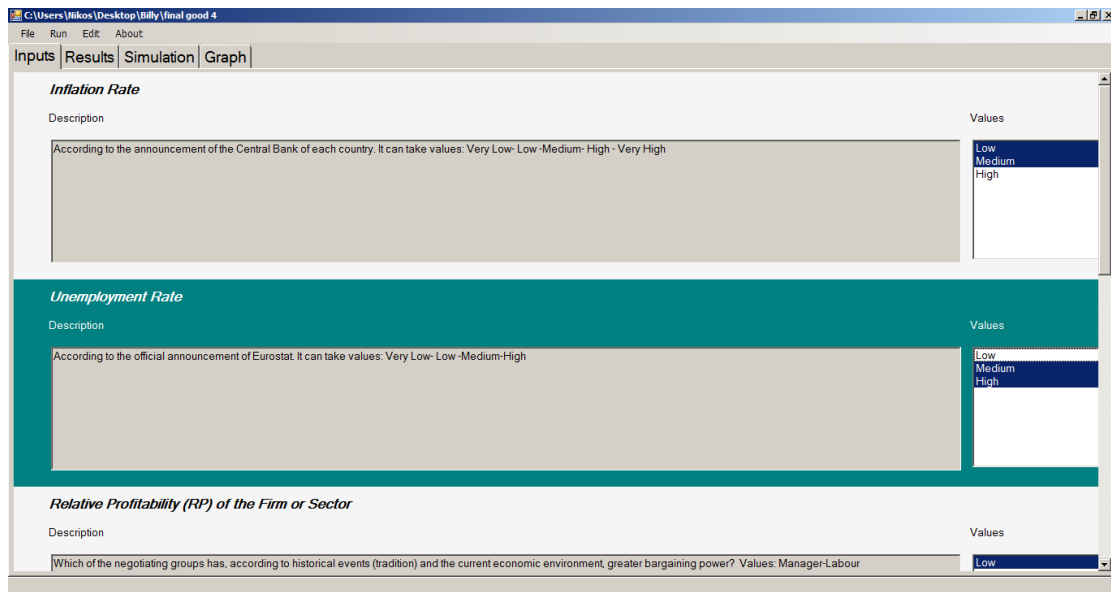
Picture 28: Input Tab - All Inputs

The user is able to choose which values from the range of the input parameters are suited for the case under consideration. For example, the user chooses for "Inflation rate" out of the available 3 options ("Low", "Medium", "High") the value "Low" (see Picture 29).

Picture 29: How to Choose Value

In the same way the user can select the values for Management, Labour, Relative Profitability (RP) of the Firm or Sector, Unemployment Rate and Economy Coordination. In our case we assume that the user selects "Low" for Management, "Medium" for Labour, "Low" for Relative Profitability (RP) of the Firm or Sector, "Medium" for Unemployment Rate and finally "3" Economy Coordination.

At least one input value from the range of each input parameter has to be selected. After the input specification, the user has to press "Run" in the main menu to get the valuation of the result set (see Picture 30).
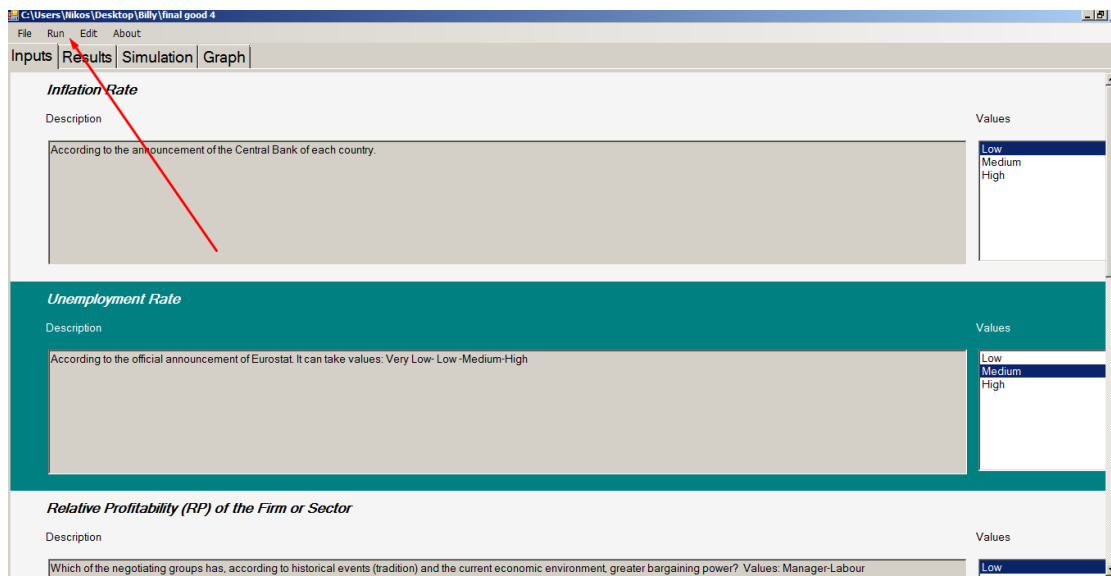
Picture 30: Run the System

If no value is selected for an input parameter, the application throws an exception and asks the user to define the missing inputs (see Picture 31).
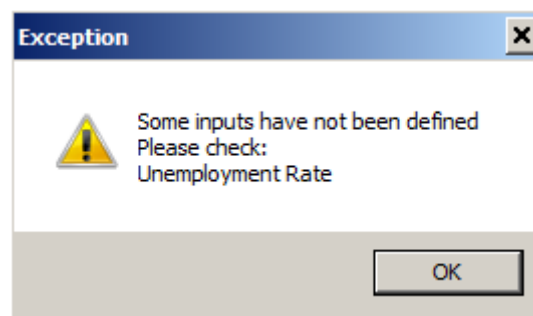
Picture 31: Missing Inputs Alert

The product of the valuation of the rule set in 2 tabs, the result tab (Picture 32) and the simulation tab (Picture 33).

Picture 32: Result Tab

The result tab is divided in 4 cells that represent the values for P1, P2, P3 and P4. The cell that has the highest value is colored green.

In the simulation tab (see Picture 33), the user can follow the whole process of the valuation. The inputs and the outputs of each rule in each layer are displayed.

Picture 33: Simulation Tab

For the chosen input of the example the result of the simulation is the following:

```
==================================================================
====================
LAYER 1
Rule: RELATIVE BARGAINING POWER
Inputs: Management = Low | Labour = Medium
Result: Labour


----------------------------------------------------------------
LAYER 2
Rule: RELATIVE RELATIONS
Inputs: Relative Profitability (RP) of the Firm or Sector = Low | RELATIVE BARGAINING
POWER = Labour
Result: SBL


Rule: INDICATORS
Inputs: Inflation Rate = Low | Unemployment Rate = Medium
Result: Positive


----------------------------------------------------------------
LAYER 3
Rule: BUSINESS ENVIRONMENT
Inputs: INDICATORS = Positive | RELATIVE RELATIONS = SBL
Result: NC-C


Rule: INSTITUTIONAL
Inputs: RELATIVE RELATIONS = SBL | Economy Coordination = 3
Result: High Institutional Labour


----------------------------------------------------------------
```

```
LAYER 4
Rule: FINAL
Inputs: BUSINESS ENVIRONMENT = NC-C | INSTITUTIONAL = High Institutional
Labour
Result: 40 10 20 30


-----------------------------------------------------------------------
=================================================================
====================
```

When the user chooses more than possible input value for some input parameter all possible input combinations (one input for each parameter) are formed and each one gets evaluated. The results produced by each evaluation get averaged and this average is presented as the final result in the 2x2 matrix. Moreover, in the simulation tab the valuations of every combination appear and in the result tab we get the average result of the input combinations.

5.5 Development

The System has been developed with Visual Studio 2010 using VB.NET. It is a windows application that runs under Windows systems that support the .NET 4.0 Framework. The basic parts of the code of the project can be found in the CD-ROM attached in the thesis.

6. Surveys

6.1 The Aim and the Preparation of the Electronic Survey

In this chapter we will demonstrate the main findings of the electronic questionnaire that was distributed in three European countries. The main purpose employing this method was to validate the selected variables that have been used for the creation of our system. Nevertheless, additional information to support the theoretical concepts used in our proposed theory, has been sought. Due to the theoretical complexity of the questionnaire the selection of eligible participants was constrained within academia. Considerable background knowledge in wage bargaining theories was necessary in order to provide trustworthy answers to the questionnaire. Thus, academia was the most appropriate pool in order to find the right participants for the questionnaire.

Denscombe (2007, p.29) argues that 'researchers who conduct small-scale research, especially qualitative researchers, find it difficult to adhere to the principles and procedures of probability sampling for selecting their people or events.'

This statement does not align with the prevalent rules that govern traditional survey sampling techniques. It follows that in our research there were similar difficulties that lead us to use a filtering method in order to track a pool of experts with relevant knowledge, able to make a significant contribution by answering the questionnaire.

In all three countries, the UK, Greece, and Sweden that have been selected in order to send the survey, the same criteria applied in order to create the lists of participants.

In particular, an academic would be eligible and hence included in the list of our purposive sample if he or she satisfied the following criteria:

- First of all, the academics that should be members of an Economic department or a Business School in a University that is based on one of the abovementioned countries. It is worth mentioning, that with the term 'member' we mean mainly researchers but without including Ph.D. students that had been teaching in these

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departments. Doctoral candidates have been excluded from the lists as they have been regarded as non-qualified and less experienced thus, less reliable in answering the questionnaire.

- Secondly, their field of research should be placed in one of the fields mentioned below, according to the available information in their public research profile found in their department's website or in their personal research website. All academics that declared Labour Economics as their field of expertise have been instantly included in our pool of experts. Moreover, any member of these departments that mentioned the words 'negotiations' and 'wage bargaining' in their profiles automatically qualified to be regarded as a person suitable to participate in our survey. With this in mind, a combination of conditions applied in order to encompass academics with research profiles relevant to Game Theory, Human Resource Management, Industrial Economics or Organizational Theory. As a matter of fact, the aforementioned fields were not a sufficient clause in order to enlist a researcher in our purposive sample but worked as a prerequisite. Additionally, there should be extra evidence, either in their publications or in their research description, usually available in their profiles, which would relate these fields with issues relevant to employment relations, negotiations, wage bargaining or institutional theory.

Thus, in alignment with the above academic profile created for the purpose of this study, a list of academics from each country (697 from the UK, 62 from Greece and 97 from Sweden) was developed.

As it has already been stated, the survey was conducted in three countries; the UK, Greece, and Sweden. The selection of these countries followed the decentralized-centralized pattern discussed in chapter 3, where the proposed theory was presented.

Our main aim was to include countries that depicted all the institutional differences that exist in the European Union. Including these three countries in our survey, we followed what is stated in the existing literature in order to incorporate all the different institutional systems that are encountered in European Union.

The UK represented a complete decentralized system, Sweden a heavily centralized bargaining system and Greece a system that lies somewhere in between the two former systems. The later, especially after the recent economic crisis, cannot be classified purely in a specific institutional category therefore it was quite interesting to include this country in the survey process.

To achieve the best result possible, great attention has been given in designing a questionnaire, with closed and open questions, that would be posted electronically to the participants. The questionnaire was divided into five sections.

The first section consisted of three closed questions measuring the attitude of the participants into some theoretical concepts that constitute the building blocks of our proposed theory. Hence, the main purpose of this section was to verify that the main concepts that have been employed have not been irrelevant with the overall research quest.

Section two encompassed two closed multiple choice questions, which above all served a specific aim; identify the two countries that could be used as a benchmark in a scale measuring flexibility of labour markets. Hence, we would be able to verify the scale used in our system for the variable "Institutionalism". If the answers of the participants aligned with the perceptions elicited from the literature about the institutional frameworks of these countries, then the scale used in the aforementioned variable would gain further credibility.

Section three represented the most important part of our questionnaire. This section incorporated a multiple choice question that offered fifteen alternative variables that might influence Labour and Management negotiations, combined with an option to specify another one if judged necessary by the respondent or to reject all the above variables. The participants in this section were allowed to select more than one answer in this question.

As a consequence this section had the most prominent task: to validate the variables which had been used in the construction of the rules governing our system and thus, the system itself. With this intention, the significance of this question in order to support our deductive tool could be considered of great importance.

The next section encompassed six closed questions that aimed to assess the significance of some specific factors influencing negotiations, which according to the aim of this research needed extra cross validation. With this in mind, this section focused mostly on the variables that have been used in our system. In addition, it is worth to mention that the similarity of some these questions with questions of the previous section served our aim to gather unbiased data.

In section five, each respondent had the opportunity to express his or her comments on the general ideas and concepts used throughout the questionnaire. Hence, this open question served an explanatory mission in order to provide fruitful insight either for evaluating the theory proposed or for new ideas to encompass in relevant future research projects.

The time necessary to complete the survey was approximately 12 minutes. The title of the survey that was sent in the academics was 'Labour – Management Negotiations: Influential Factors' accompanied with the name of the country that the person was based on. A welcome page, introducing the theme of the survey, the time needed to complete it, a statement of confidentiality and the name of the researcher, was opening the survey in order to familiarize the respondent with the task. Page seven, which signalled the end of the questionnaire, incorporated a thank you message and a reminder that the results will be handled with confidentiality. All questionnaires in all three countries were in English.

To ease the task of conducting and analysing the results of this electronic survey we used the services provided by "Bristol Online Surveys"; a webpage designed to accommodate professional quality surveys via the web. Bangor University owned a primary license that gave us the opportunity to use this web page without any limitations.

A list with academics that satisfy the above mention selection criteria was created in each of the three countries. In the next section, the process of collecting our sample will be described. Nevertheless before proceeding into the process followed, we have to address that in the UK and Greece, this process created a census as it led to incorporate all the persons that satisfied the criteria set in the selection protocol. Therefore we can argue the entire population that satisfied these criteria was included in our survey. However, in Sweden due to language barriers the same claim cannot be made, as far as the list of academics created in this country.

Thus, the latter is more of a convenience sample, aiming the top universities in Sweden which provided in English the information needed.

In our attempt to locate all the academics that could take part in our survey, it was necessary to search in all the Economic and Business departments that existed in these countries. Before proceeding in the selection analysis, bear in mind that prominent differences exist among these countries. Firstly in terms of population and secondly, in the number of higher education institutes that exist in each of them.

In order to accomplish this task, in the UK the table-rankings of the departments according to the subjects taught were used. These tables were available in the University league Guide 2013 of the website www.guardian.co.uk during the time designing and executing the survey.

The table for 'Business and Management studies' included 116 Universities, indicating that these universities offer courses in relevant subjects. Along the same lines, the table for 'Economics' encompassed 70 Universities across the UK that included in their curriculum a degree in this field of studies. In addition, in order to include all personnel that conducted research in relevant expertise, the table 'Social Policy and Administration' was reviewed in order to draw future participants, this league table numbered 29 departments. Nevertheless, from the latter table only a few academics had been added to list as most of them had already been included by the use of the first two tables.

After filtering all these departments provided by abovementioned lists, a catalogue of 697 academics based in the UK has been developed.

In Greece the list of all departments throughout the country which offer an Economic or Business degree was downloaded by the web-page of the Ministry of Education and Religious Affairs (http://www.minedu.gov.gr/). The number of these departments was 91 in total. Following the same selection protocol described in the beginning of this sub-section a list which incorporated 62 eligible academics based in Greece was composed. It is important to mention that in Greece there were no language barriers conducting the research investigation due to the Greek-origins of the researcher.

Likewise, in order to cope with the same quest in Sweden different sources through the internet were accessed. In the beginning, information was sought in the 'Swedish Higher Education Authority' and then following a link in that web page we have been redirected to the webpage called 'Study in Sweden' (http://www.studyinsweden.se). In the latter web-page, lists of all Swedish Universities offering courses in Business and Social Studies were available. Nevertheless, problems to obtain the academics suitable for the questionnaire have emerged due to language barriers. Some Swedish Universities did not offer an English web-page with the research profiles of their academic staff or others did not offer any publicly available information about their staff at all. This event hampered our attempt to work with the same effectiveness as in the two previous countries included in our research. Despite this problem the purposive sample collected, incorporated 97 academics based in Sweden.

As mentioned before there is a huge difference in the number of Higher Education Institutes that can be found in the UK on the one hand and in Greece, and in Sweden on the other hand. Therefore, this great difference in the number of academics incorporated in the lists was more or less expected.

An invitation to participate in our survey was sent, via email, to each one of the academics included in these lists. A link in this email redirected experts, who have been interested in participating in our survey, to the questionnaire that was hosted in 'Bristol Online Survey' web-page. After two weeks' time from sending out the first call, a reminder was sent to all participants in order to answer the questionnaire as long as they have not done that in the first round. The same procedure was followed in all three countries.

The response rate varied among countries. In the UK out of 697 academics the responds gathered accumulated to 97; representing a respond rate of 13.92 per cent. Likewise, in Greece out of 62 persons eligible for our questionnaire, 25 kindly offered to respond. The respond rate in this country reached a 40.32 per cent. Similarly in the last country, Sweden, from a list of 97 eligible academics, 12 responded to the invitation to complete the survey, resulting to a 12.37 per cent respond rate.

Country	Number of Participants	Number of Responses	Response Rate (%)
The UK	697	97	13.92
Greece	62	25	40.32
Sweden	97	12	12.37

Table 14: Survey Participants - Number of Responses - Response Rate

The response rates managed to overcome the threshold of 10% of the total number of participants in each country. The 10 per cent threshold is quite acceptable as it is argued by Denscombe (2007, p. 23) 'with large-scale postal questionnaire surveys, for instance, it will not be uncommon to get a response rate as low as 10–15 per cent' giving validity to the response rate achieved in this study.

It is worth to mention that for each question of the questionnaire (expect for the open), a Kruskal-Wallis non-parametric test was conducted; taking into account the responses in all three countries. The results of the non-parametric test can be found in the Appendix III.

6.2 Attitude Questions on the Theoretical Building Blocks of our Proposed Theory

Section one incorporated three statements where the participants had to express their attitude towards them choosing from a continuum of answers starting from "Disagree Strongly" and ending up to "Strongly Agree" (see Appendix I). The three statements that formed the relevant questions were the following:

1. The models of bargaining theory in economics provide a realistic representation of real world outcomes

2. The negotiations between employers and employees can, under specific assumptions, be perceived as a game-theoretic problem that takes the form of a Prisoner's Dilemma

3. The institutional setting influences the final outcome of a negotiation process between Labour and Management

The results revealed some differences comparing the UK with the other two countries. In order to calculate the descriptive statistics in this set of questions we have coded the answers following their sequence of appearance (1: Disagree Strongly, 2: Disagree, 3: Neutral 4: Agree, and 5: Strongly Agree).

According the results in the UK for the first statement (Table 15), the distribution of the responses was slightly skewed on the side of 'Disagree Strongly' as the mean rank was 2.7 and the median rank was 3 with Variance equal to 1.1 and Standard deviation 1.0. The lower Quartile was 2.8 and the upper Quartile 4.0 revealing that in the UK there was some tendency to defy the models of bargaining theory steamed from economic theory.

As showed in Table 12, 16 respondents answered that they 'Disagree Strongly' with the statement of the attitude question representing a 16.5% of the respondents in the UK. The choice 'Disagree' gathered 21 responses that tally to 21.6% of the total responses. The answer that got the most responses was 'Neutral' with 36 participants answering that their stance on this statement does not make them to either agree or disagree. This category constituted the 37.1% of the people participated in the survey in the UK. Nevertheless, a considerable amount of 22 respondents filled in 'Agree' in this question, representing the 22.7%. A minor 2.1% (only two academics) had a very positive attitude toward this statement selecting 'Strongly Agree' as an answer.

In Greece the answers followed a different pattern compared with the UK. Only a 4% of the respondents have been very negative towards the statement answering 'Disagree Strongly' in the first question. This figured doubled for the following option as 'Disagree' managed to gather 8% of the persons that actually replied to the survey from Greece. 'Neutral' declared the 28% of the participants that could be translated into 7 participants. The rest, that represented a vast majority of 15 respondents, selected 'Agree' as their answer. This amount represented 60% of the total. The last category of did not manage to attract any responses.

The median was 4 and the mean was equal to 3.4, both following the aforementioned coding. The variance was 0.7 and the standard deviation 0.8. The lower quartile was 3.0 and the

upper one 4.0. The above results show that most participants in country did not challenge much the models of bargaining theory.

In Sweden the results have been similar to Greece rather than the UK. One person answered 'Disagree Strongly' and two respondents 'Disagree' representing the 8.3% and 16.7% respectively. A neutral stance over the statement of the question was taken by 3 respondents that could be translated into a quarter of the total. The rest 6 participants, the half of the people that answered the questionnaire, selected 'Agree' as their answer. Likewise Greece, the option 'Agree Strongly' did not manage to attract any responses.

The median 3.5 was and mean equalled 3.2. The variance was calculated equal to 1.1 and the standard deviation was equally to 1. The lower quartile was 2.8 and the upper quartile was 4. The aggregate results in general were slightly positive. 'Neutral' have been the 34.3% of the aggregate total of the respondents. The second largest rate was assigned in the category 'Agree,' which represented 32.1% of the aggregate responses. The option 'Disagree' managed to gather 18.7% of the aggregate. More negative, answering 'Disagree Strongly,' was the 13.4% of the total participants. Only a minor percentage of 1.5 selected 'Agree Strongly' as their attitude.

The median was equal to 3 and the mean equalled 2.9. The variance was 1.1 and the standard deviation 1.0. The lower quartile was equal to 2 and the upper quartile got the value of 4.

Question 1:	"The models of bargaining theory in economics provide a realistic representation of real world outcomes"							
Country	UK		Greece		Sweden		All	
	%	Number	%	Number	%	Number	%	Number
1.Disagree Strongly	16.5	16	4	1	8.3	1	13.4	18
2.Disagree	21.6	21	8.0	2	16.7	2	18.7	25
3.Neutral	37.1	36	28.0	7	25.0	3	34.3	46

4.Agree	22.7	22	60.0	15	50.0	6	32.1	43
5.Agree Strongly	2.1	2	0.0	0	0	0	1.5	2
Ranking Statistics	Median: 3 Mean: 2.7 Variance: 1.1 SD: 1.1 Lower quartile: 2.0 Upper quartile: 3.0		Median: 4 Mean: 3.4 Variance: 0.7 SD: 0.8 Lower quartile: 3.0 Upper quartile: 4.0		Median: 3.5 Mean: 3.2 Variance: 1.1 SD: 1.0 Lower quartile: 2.8 Upper quartile: 4.0		Median: 3 Mean: 2.9 Variance: 1.1 SD: 1.0 Lower quartile: 2.0 Upper quartile: 4	

Table 15: Results for Question 1
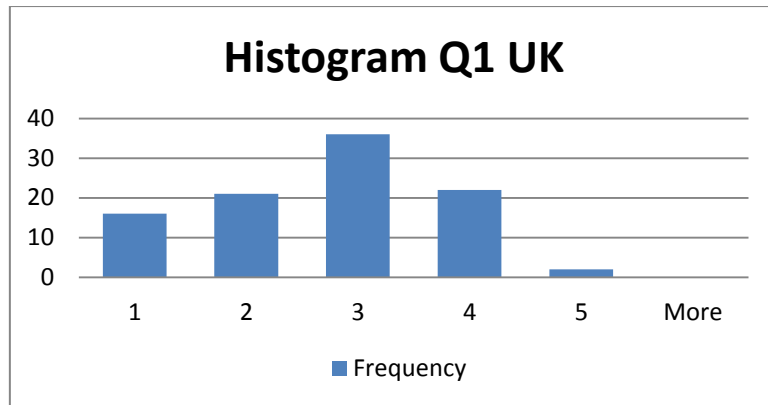
Chart 1: Histogram Q1 UK
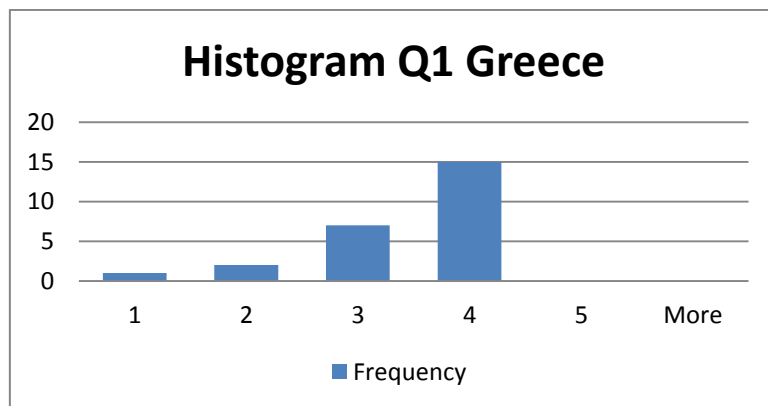
Chart 2: Histogram Q1 Greece
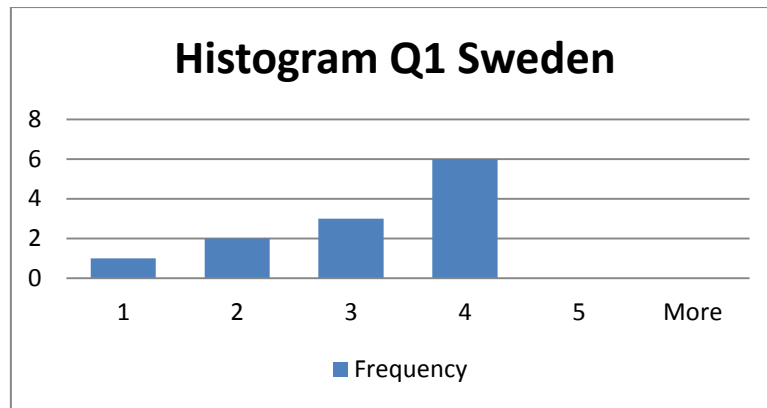
Chart 3: Histogram Q1 Sweden

For the second statement of section one (see Table 16), the results followed a similar pattern in all three countries.

The most popular result in the UK was the attitude 'Agree' that reached the 41.3% of the answers. In the second place was the selection of 'Disagree' that lead for just one extra respondent in comparison with 'Neutral' that conceived the third place. The former represented the 23.7% and the latter 22.7% showing that both answers represented almost the same slice of the total pie. In the fourth place, with 7 responses (7.2%) was the option 'Disagree Strongly.' The option that received less responses compare to the rest was the one named 'Agree Strongly' representing only 4 respondents that can be translated into 4.1% of the total participants. As it is shown in table (62) the median using the pre-coded ranking in the UK was 3 and the mean 3.1 revealing neutrality in the most prevalent attitude. The variance was 1.1 and the Standard deviation 1.1. The lower quartile was equal to 2.0 and the upper quartile to 4.0.

In Greece, the results were slightly skewed towards the option 'Agree.' None answered that he or she 'Strongly Disagree' with the statement of the second question. A considerable 24% answered 'Disagree' translating into 6 respondents. Both options of 'Neutral' and 'Agree' gathered a 32% being the top choices for the respondents in this question. The rest 3 respondents that represented the 12% answered 'Agree Strongly.' The median and mean have been equal to 3 and 3.3 respectively. The variance and the standard deviation were equal to 1. The lower quartile was equal to 3 and the upper quartile was equal to 4.

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In the same question in Sweden, the responds were equally distributed into two of the five options. The categories of 'Disagree' and 'Agree' have accumulated 6 responds each. According to these results the median was 3 as was the mean. The variance was 1.0 and the standard deviation 1.1. The lower quartile was equal to 2.0 and the upper was equal to 4.0.

The overall results showed a slight tendency towards a positive belief. A high rate of 41% selected 'Agree' as their attitude toward this statement. A negative belief was pervasive for 26.5% of the aggregate. 'Neutral' was the choice of the 22.4% of the total participants. The other two categories, 'Disagree Strongly' and 'Agree Strongly' received 5.2% each.

The median was equal to 3 and the mean with 3.1. The variance was 1.1 and the standard deviation 1.0. The lower quartile equalled with 2 and the upper quartile was equal with 4.

Question 2:	"The negotiations between employers and employees can, under specific assumptions, be perceived as a game-theoretic problem that takes the form of a Prisoner's Dilemma"							
Country	UK		Greece		Sweden		All	
Answers	%	Number	%	Number	%	Number	%	Number
1.Disagree Strongly	7.2%	7	0.0	0	0.0	0	5.2	7
2.Disagree	23.7%	23	24.0	6	50.0	6	26.1	35
3.Neutral	22.7%	22	32.0	8	0.0	0	22.4	30
4.Agree	42.3%	41	32.0	8	50.0	6	41.0	55
5.Agree Strongly	4.1%	4	12.0	3	0.0	0	5.2	7
Ranking Statistics:	Median: 3 Mean: 3.1 Variance: 1.1 SD: 1.1 Lower quartile: 2.0 Upper quartile: 4.0		Median: 3 Mean: 3.3 Variance: 1.0 SD: 1.0 Lower quartile: 3.0		Median: 3 Mean: 3.0 Variance: 1.1 SD: 1.0 Lower quartile: 2.0		Median: 3 Mean: 3.1 Variance: 1.1 SD: 1.0 Lower quartile: 2.0	

| | | Upper quartile: 4.0 | Upper quartile: 4.0 | Upper quartile: 4.0 |

Table 16: Results for Question 2
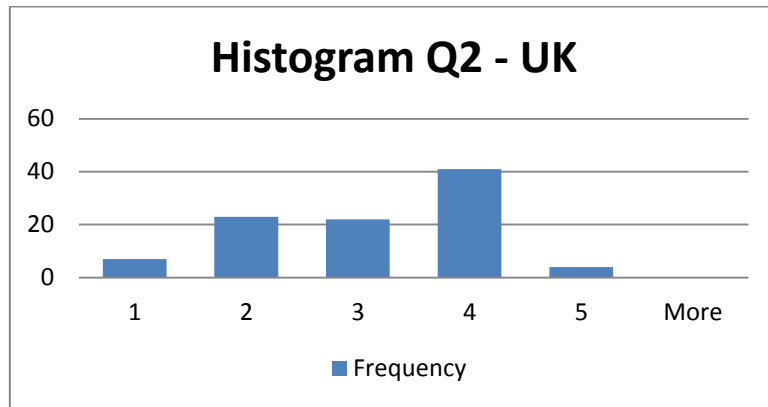
Histogram Q2 - UK

Chart 4: Histogram Q2 -UK

Histogram Q2 - Greece
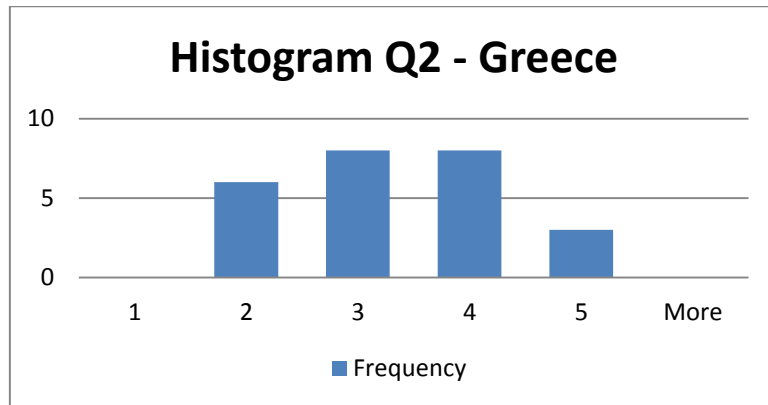
Chart 5: Histogram Q2 - Greece

Histogram Q2 - Sweden
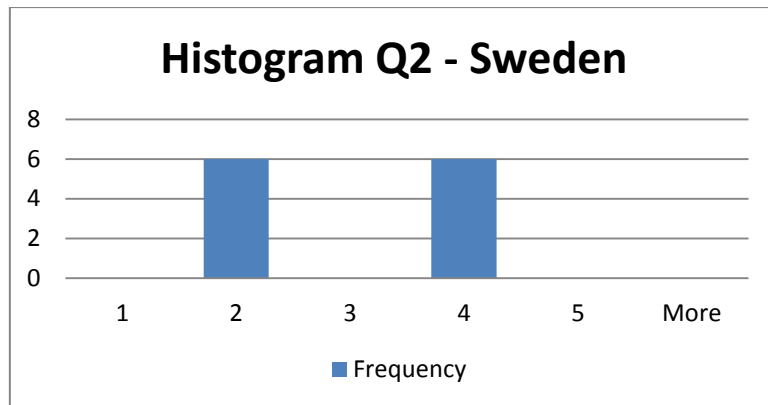
Chart 6: Histogram Q2 - Sweden

In question three of section one (see Table 17), the results showed that most people participated in the questionnaire expressed a positive attitude towards the statement under consideration.

'Strongly Agree' received the most responses in the UK representing the 49.4% of the total. The other positive attitude received a high percentage as well. In particular, 'Agree' was selected by 45 participants from the UK representing the 46.4%. The rest 4 chose 'Neutral' as their answer. In short, the vast majority of the responses represented a positive belief towards a statement of this question. The median was equal to 4 and the mean 4.5 revealing a tendency towards positive answers. The variance was equal to 0.3 and the standard deviation 0.6. The lower quartile was equal to 4 and the upper was equal to 5.

In Greece the pattern followed by the responses did not differ from the one in the UK. The majority, 15 out of 25, chose that they 'Agree strongly' with the statement of the question. The remaining 10 (40%) selected 'Agree' as their favourite option from those offered. In this case, the median was equal to 5 and the mean equal to 4.6. The variance equalled 0.2 and the standard deviation equalled 0.5. The lower quartile's value was 4 and the upper quartile was equal to 5.

For the Swedish participants the dominant answer was 'Agree' as it was chosen by ten participants representing 83.3 of the sample. The remaining 2 respondents selected 'Agree Strongly' with the common belief that was expressed in the statement.

The median in this case was 4 and the mean 4.2. The variance equalled 0.2 and the standard deviation 0.4. Both the lower and the upper quartile were 4.

The overall results in this question clearly express the positive belief among academics that institutions influence the final outcome in negotiations. Both positive attitudes, 'Agree strongly' and 'Agree' received each 48.5% of the aggregate total. The remaining 3% answered 'Neutral.'

The median was equal to 4 and the mean was equal to 4.5. The variance was equal 0.3 and the standard deviation was equal to 0.6. The lower quartile was 4 and the upper one was 5.

Question 3:	**"The institutional setting influences the final outcome of a negotiation process between Labour and Management"**

Country	UK		Greece		Sweden		All	
Answers	%	Number	%	Number	%	Number	%	Number
1.Disagree Strongly	0.0	0	0.0	0	0.0	0	0.0	0
2.Disagree	0.0	0.0	0.	0	0.0	0	0.0	0
3.Neutral	4.1	4	0.0	0	0.0	0	3.0	4
4.Agree	46.4	45	40.0	10	83.3	10	48.5	65
5.Agree Strongly	49.5	48	60.0	15	16.7	2	48.5	65
Ranking Statistics:	Median: 4 Mean: 4.5 Variance: 0.3 SD: 0.6 Lower quartile: 4.0 Upper quartile: 5.0		Median: 5 Mean: 4.6 Variance: 0.2 SD: 0.5 Lower quartile: 4.0 Upper quartile: 5.0		Median: 4 Mean: 4.2 Variance: 0.2 SD: 0.4 Lower quartile: 4.0 Upper quartile: 4.0		Median: 4 Mean: 4.5 Variance: 0.3 SD: 0.6 Lower quartile: 4.0 Upper quartile: 5.0	

Table 17: Results for Question 3
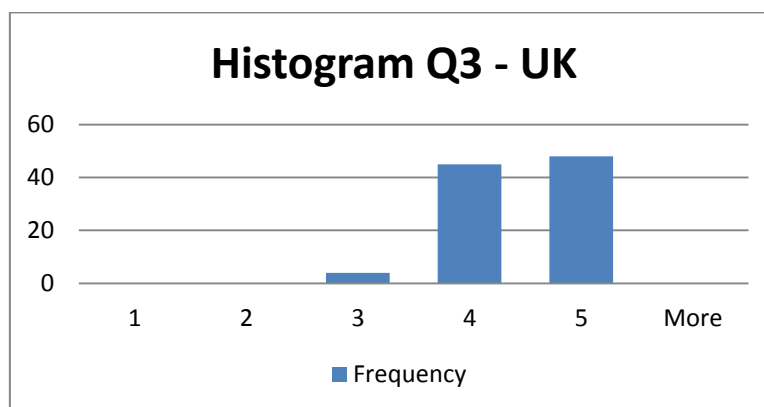
Chart 7: Histogram Q3 - UK
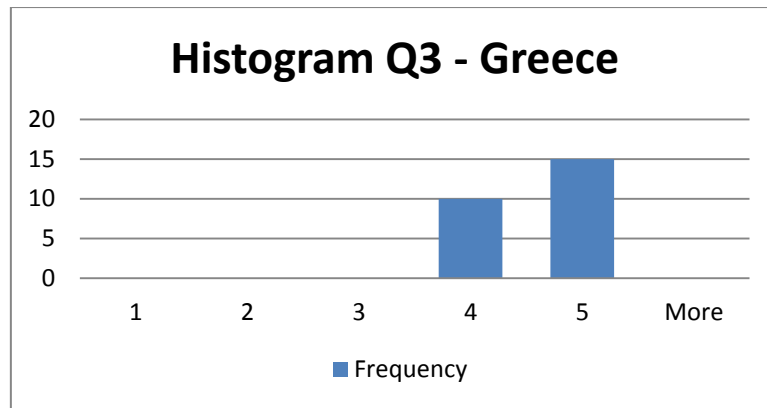
Chart 8: Histogram Q3 - Greece
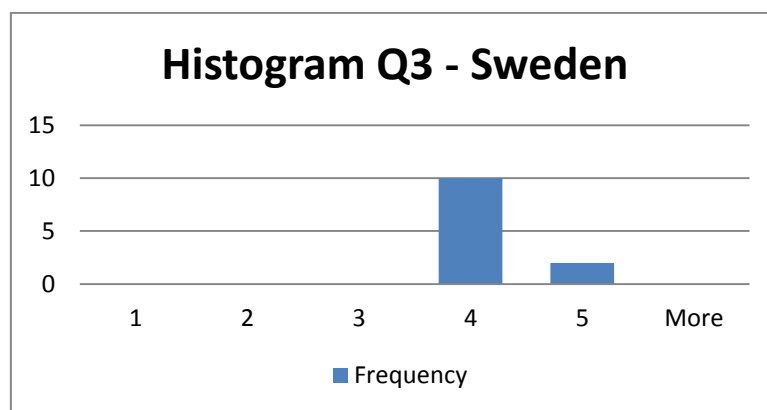
Chart 9: Histogram Q3 - Sweden

6.3 Testing the Scale of the Variable 'Institutions'

Section 2 included two multiple choice questions on matters related with the flexibility of the labour market of some countries and the power exerted by institutional frameworks on the negotiations in these countries. The following two questions were incorporated in this section:

1. In your opinion, which of the following countries has the most flexible labour market?

2. In your opinion, which of the following countries has the most formal institutional provisions on its Labour-Management negotiations?

The first question of section two (see Table 18), served the aim to identify the country with the most flexible labour market, in order to verify the correspondence of the scale of the variable 'Economy Coordination' with the country that has been used to depict the lower value of the scale in our system.

The majority of responses in all three countries have been concentrated in the first choice, the UK. More precisely, the option 'UK' gathered the 72.2% in the UK, the 56% of the responses in Greece and the 66.7% in Sweden. In aggregate, 68.7% of the participants chose 'the UK' as the most flexible labour market out of the five options.

In the UK the rest of responds were distributed as following: 10.3% of the participants selected 'the Netherlands' as the most flexible market, something that was expected according to the literature (Calmfors & Driffill, 1988). Then 'Sweden' followed with 9.3% of the total responds and in the bottom was 'Germany' and 'Greece' with a percentage of 4.1.

In Greece, the second most popular choice was 'the Netherlands' with 24%. Both 'Germany' and 'Sweden' gathered 8% of the participants from Greece. The rest 4% selected 'Greece.' The rest of the responses in Sweden were equally distributed in all the other options. In short, all the rest categories gathered an 8.3%.

To sum up, we can argue from the individual results gathered in each country separately or by the aggregate results in this question that the most flexible labour market between these five countries is the UK.

Question 4:	"In your opinion, which of the following countries has the most flexible labour market?"							
Country	UK		Greece		Sweden		All	
Answers	%	Number	%	Number	%	Number	%	Number
1. UK	72.2	70	56.0	14	66.7	8	68.7	92
2.Germany	4.1	4	8.0	2	8.3	1	5.2	7
3. Greece	4.1	4	4.0	1	8.3	1	4.5	6
4.The	10.3	10	24.0	6	8.3	1	12.7	17

Netherlands								
5. Sweden	9.3	9	8.0	2	8.3	1	9.0	12
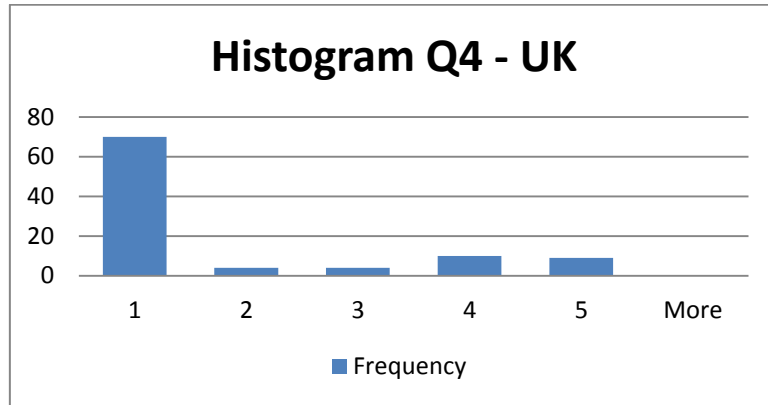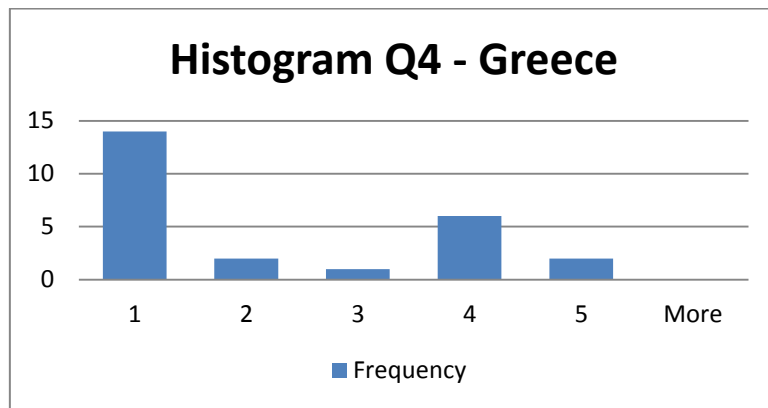
Histogram Q4 - UK

Histogram Q4 - Greece
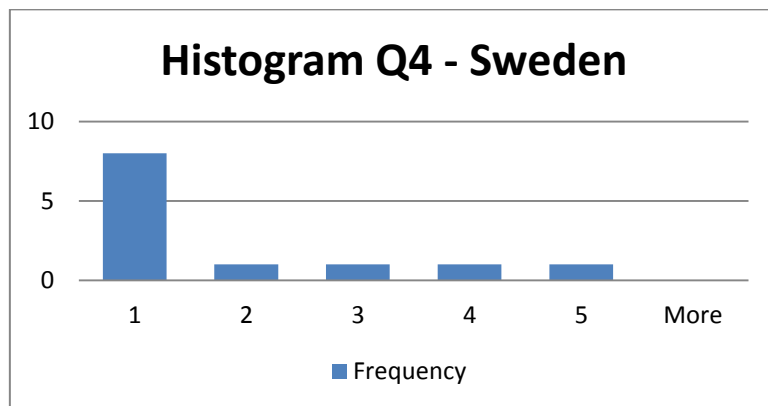
Histogram Q4 - Sweden

The main purpose of the second question (see Table 19) in second section was to verify that the countries that have been used in order to depict the higher values of the scale indeed are

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the ones with the most institutional provisions governing their Labour-Management Negotiations. In particular high responses have been expected in Germany and Sweden. As a matter of fact, a verification of our argument emerged through the findings in this question.

In the UK, 58.8% of the respondents selected 'Germany' as the country with the more formal institutional provisions on its negotiation procedure. 'Sweden' got 32% of the total answers in the UK. 'Greece' received the 6.2% of the responses and then 'UK' concentrated just 2.1% and 'the Netherlands' only 1%.

In Greece, the majority of responses have been concentrated in the option 'Sweden' representing the 48% of all the participants. In the second place, was the option 'Greece' with 20%. Then both 'the UK and 'Germany' received the 12% of the total responses. The smallest percentage was attributed to 'The Netherlands' as it received only 8%.

In Sweden, the majority of the participants selected 'Sweden' as the economy with the most formal institutional provisions. A high rate of 58.3% of responses can be found in this category. The option 'Germany' followed accumulating the 25% of the participants in Sweden. 'Greece' and 'The Netherlands' received 8.3% of the responses each.

In total, the most popular option was 'Germany' as it was selected by 47% of the aggregate responses. With 13 responses less, 'Sweden' gathered the 37.3% of the aggregate participants. In the third place, we encounter the option 'Greece' with 9% of the total responses. 'UK' received the 3.7% of the total and 'The Netherlands' only the 3%.

Question 5:	"In your opinion, which of the following countries has the most formal institutional provisions on its Labour-Management negotiations?"							
Country	UK		Greece		Sweden		All	
Answers	%	Number	%	Number	%	Number	%	Number
1. UK	2.1	2	12.0	3	0.0	0	3.7	5
2.Germany	58.8	57	12.0	3	25.0	3	47.0	63
3. Greece	6.2	6	20.0	5	8.3	1	9.0	12

4.The Netherlands	1.0	1	8	2	8.3	1	3.0	4
5. Sweden	32.0	31	48.0	12	58.3	7	37.3	50

Table 19: Results for Question 5
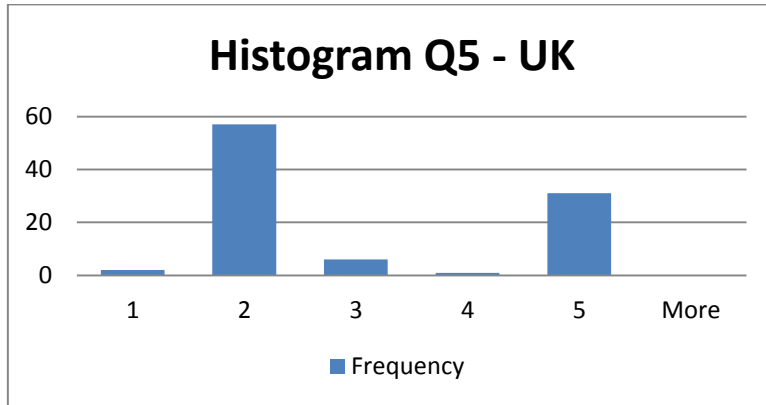
Histogram Q5 - UK

Chart 13: Histogram Q5 - UK

Histogram Q5 - Greece
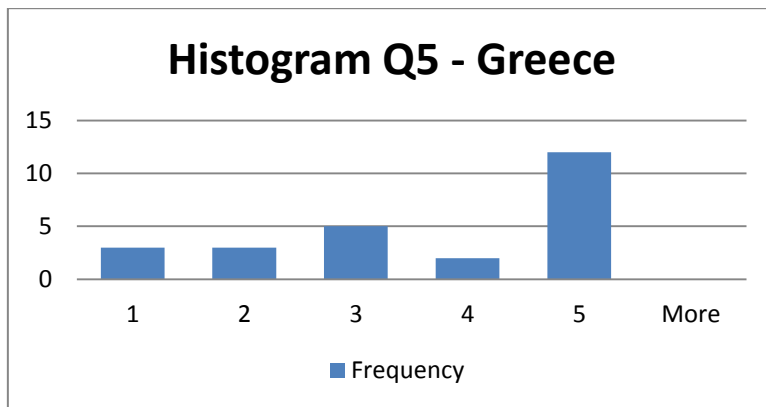
Chart 14: Histogram Q5 – Greece

Histogram Q5 - Sweden
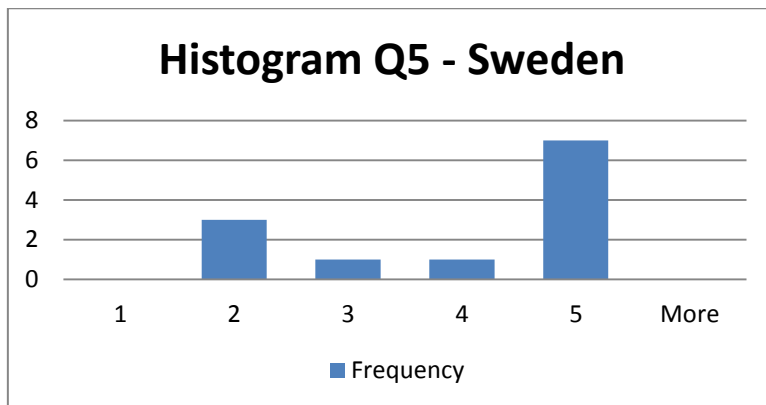
Chart 15: Histogram Q5 - Sweden

6.4 Validating the Variables that Influence the Negotiation Phase

Section 3 was of high importance regarding the validation of the proposed theory. This multiple choice question (see Table 20) served the aim to validate the variables used in the system. For this reason, seventeen options have been offered to the participants. Fifteen of them have represented possible variables that could be used for the creation of a similar system. Another one was the option to reject all the above-mentioned variables in the list and the last option gave the opportunity to the respondent to specify any other variable he or she thought as important. The last option gave to this question the necessary flexibility in order to make it as inclusive as possible.

The results of for this question in the UK revealed some interesting aspects in respect to the variables influencing negotiations. In the top of the choices with 89 responses was the variable 'Relative Bargaining Power of Each Party' addressing the acceptance among academics that the relative bargaining power of each party exerts great influence in the negotiation task. The second most popular choice, with 69 responses, was 'Union's Density (if labour is unionized)'; revealing the importance that the respondents assigned to the labour unions when participating in this process. In the third place, with a minor gap from the second one with 66 responses was the option representing the variable 'Unemployment rate' In the fourth and fifth place was the 'Degree of Centralization on the Bargaining Process' and 'Relative Profitability of the Firm or Industry' respectively. As it shown in the table 17, next in the ranking was the option 'Inflation rate' with 42 responses followed by the choice 'Personal Ties between Negotiators' which received 36 responses.

The results in Greece depicted in the 'top-five' options by and large the same results as in the UK. In the first place was the option 'Relative Bargaining Power of each party.' However, the second place was held by the option 'Unemployment Rate' with 21 responses. The third and fourth place was conquered by ''Degree of Centralization on the Bargaining Process' and Relative Profitability of the Firm or Industry' as both concentrated 15 responses in favour of them. In the fifth place was 'Union's density' with 14 responses. The variable 'Inflation' followed, as it was selected by 10 people and 'Personal Tie between Negotiators' with 9 responses completed the most popular choices.

In the Sweden, all experts selected that the variable 'Relative Bargaining Power of Each Party' exerts high influence in the negotiation process. Second in the hierarchy of choices was 'Union's Density' as it was chosen by 10 experts. The third and fourth ranking positions have been captured by 'Degree of Centralization on the Bargaining Process' and 'Unemployment Rate' as both of them concentrated 9 choices. The option 'Personal Ties between Negotiators' was ranked in the fifth place with 8 responses.

In this question, it is of high importance to analyse the overall results as the aggregate number constitutes a better sample that might help clarify better the hierarchy of importance of the variables presented in this list.

The first position, with 123 votes of 134 participants, was attributed to 'Relative Bargaining Power of Each Party' addressing the importance that the power balance between the two parties on the negotiation task. Runner-up in the aggregate results was the variable 'Unemployment' with 95 responses. The high number concentrated by this variable reveals that the negotiation task is under great influence by the dark shadow of unemployment. In the third place, with just two responses less form that of the second place, was the 'Union's Density (if Labour is Unionized).' This high number of responses was expected as the union density is traditionally considered as one of the variables that influences the bargaining process. In the fourth place, with 81 responses, was the option 'Degree of Centralization on the Bargaining Process' revealing the importance of institutional frameworks in bargaining process and by extension to the negotiation task. The option 'Relative Profitability of the Firm or the Industry' occupied the fifth position with 75 responses in total. The financial sustainability of a firm has great impact on results of the negotiations. The 'Inflation rate' got the sixth position of the final aggregate ranking with 56 responses followed by the option 'Personal Ties between Negotiations' with 53 favourable votes. Notably, 'Reputation of each Party' concentrated 44 responses and 'Media Attention on the Negotiation (Bargaining Process)' with 42 responses.

It is worth mentioning that under the last option 'Other' there have been 17 different suggestions in the UK, 2 in Greece and none in Sweden.

Nevertheless, none of these suggestions repeated itself considerable times, in order to alert the researcher that something extremely significant was omitted in the proposed list of

variables. Thus, no other variable emerged able to challenge the top-five variables (according to the responses), through the option of open question. All answers that have been encompassed under this category are demonstrated in the Appendix I.

Question 6:	"Please indicate which of the following factors you would consider as highly influential in the conduct of Labour-Management negotiations:"			
Country	UK	Greece	Sweden	All
Answers	Number	Number	Number	Number
1. Relative Bargaining Power of Each Party	89	22	12	123
2. Inflation Rate	42	10	4	56
3. Personal Ties Between Negotiators	36	9	8	53
4. Reputation of Each Party	29	10	5	44
5. Union's Density (if Labour is Unionized)	69	14	10	93
6. Stock Market Indices (e.g. FTSE 100)	6	3	1	10
7. Risk Aversion in the Reduction of their Income/Profits	16	6	4	26
8. Time Near Contract Expiration	22	7	6	35
9. Degree of	57	15	9	81

Centralization on the Bargaining Process			
10. Relative Profitability of the Firm or the Industry	55	15	5	75
11. Trends of Exchange Rates	6	1	1	8
12. The Option of Escape for the Firm	19	6	4	29
13. Intergroup Attitudes	18	5	3	26
14. Unemployment Rate	66	21	9	96
15. Media Attention on the Negotiation (Bargaining Process)	30	8	4	42
16. None of the Above	0	0	0	0
17. Other	17	2	0	19

Table 20: Results for Question 5
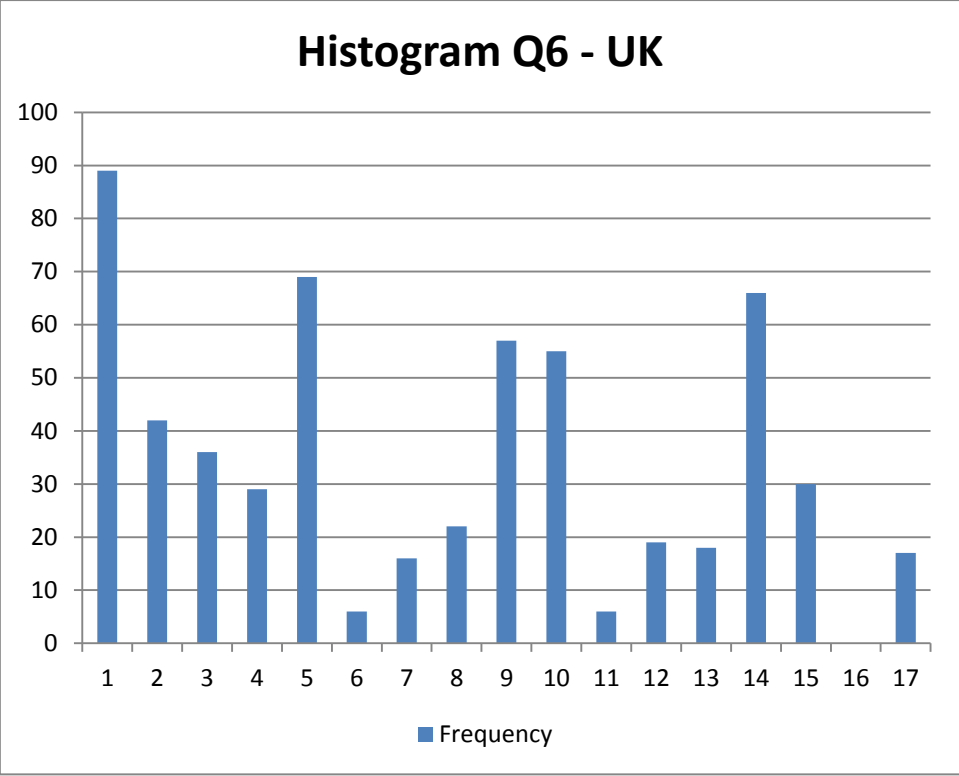
Histogram Q6 - UK

Chart 16: Histogram Q6 -UK

Histogram Q6 - Greece
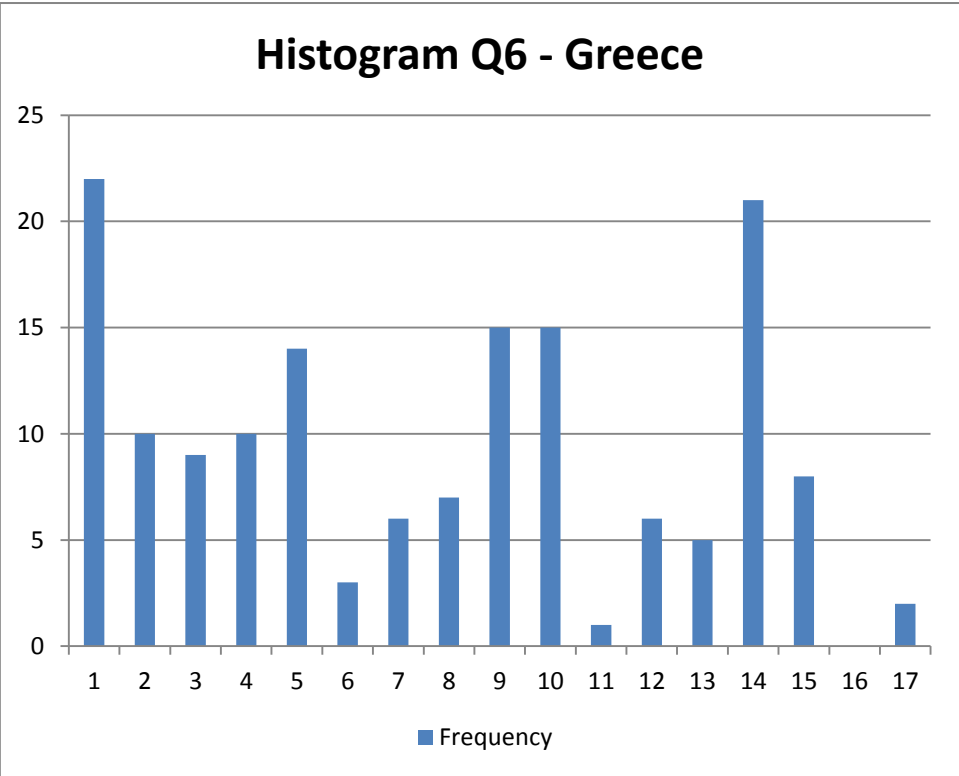
Chart 17: Histogram Q6 - Greece

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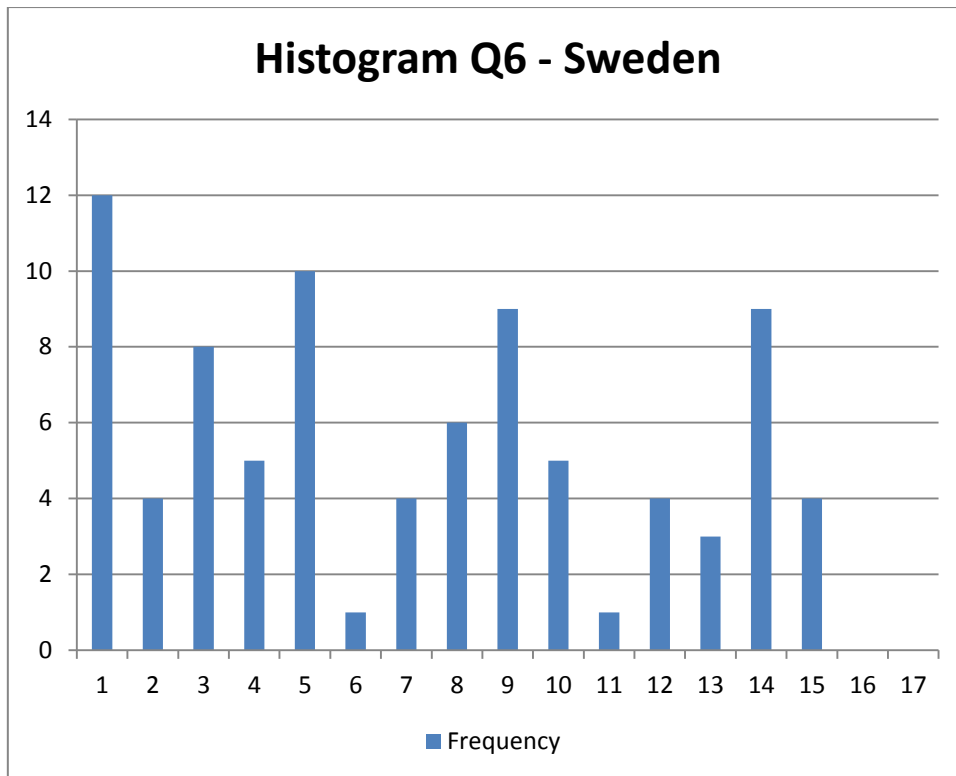
6.5 Cross-validating the Significance of some Variables

Section 4 incorporated six attitude questions that served as a main purpose to measure the belief of the respondents about level of significance of some variables that influence negotiations. As we have already explained, we added this section in order to cross-validate the significance of some of the variables and check the validity of others that our intuition addressed them as important and this called for further investigation.

The six factors, for each of them the participants had to express their attitude (in a scale 1-7), were the following:

1. Relative Profitability of the Firm/Sector

2. Past Outcomes in Negotiations

3. Economic Indices of the Economy (Inflation, Unemployment, etc.)

4. Relative Bargaining Power of Each Party

5. "Media- spotlight" the Attention that the Negotiation Process Has from the Media

6. The Existence of a Special Economic Event (Economic Crisis, EU-Membership, Euro-Membership)

For the first statement (see Table 21), in the UK the most prominent answer that represented the 33% of the respondents was value-6, indicating high levels of significance for this factor by the UK academics. The second most popular answer was value-5, concentrating the 27.8% of the total responses. The upper far end of the scale, value-7, received the 17.5% of the responses. Value-4 received 13 out of 97 responses, representing 13.4% of the participants in the UK. A small percentage, 7.2%, was assigned to value-3 and the rest 1% was attributed to value-1.

The median of the distribution was 6 and the mean 5.4, using a pre-defined coding for these categorical variables. The variance was equal to 1.5 and the standard deviation 1.2, signalling high concentration on the right side of the scale. The lower quartile got the value 5 and the upper was equal to 6.

The value that received the highest number of responses in Greece, with a notable 52% of the total, was value-6. The second value in the ranking was value-5, as it received the 20% of the responses. These results were in accordance with the results in the UK. Both value-3 and value-7 received 3 responses that was equal with the 12% of the participants. The one response left was attributed to value-2 that can be translated into the 4% of the total.

As far as the descriptive statistics for the case of Greece we can note the following; the median was equal to 6 and the mean 5.5 showing the tendency to assign great significance in this factor. The variance was equal to 1.3 and the standard deviation was 1.1 revealing high density. The lower quartile and upper quartile were equal to 5 and 6 respectively.

In Sweden both values 4 and 5 received 3 responses which was also the maximum number of responses. The number of the responses left has been equally distributed into to the value-2,

value-6, and value-7. In Sweden there is a sign of belied that this factor is slightly less significant. Nevertheless the response rate in absolute number is quite small.

The values of median and the mean were 5 and 4.8 respectively. The variance was equal to 2.8 and the standard deviation was equal to 1.7. The lower quartile was equal to 4 and the upper one was equal to 6.

The aggregate results show a tendency by the participants to consider this factor as significant. The upper side of the scale received the higher percentages. Value-6 gathered the 35.1% of the responses. Second in the ranking was value-5 with a slice of 26.4% of the aggregate and third with 16.4% was the highest value of the scale. The middle value gained the 14.2% of the total votes. The rest of the values constituting the scale got only minor fractions of the total. Value-3 received 5.2%, value-2 got 2.2% and value-1 only 0.7%.

The median of the total was equal to 6 the mean 5.3. The variance was equal to 1.6 and the standard deviation 1.6. The lower quartile got the value 5 and the upper the value 6.

Question 7a:	"How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?"							
Factor (7a)	"Relative Profitability of the Firm/Sector"							
Country	UK		Greece		Sweden		All	
Answers (Not Significant- Very Significant)	%	Number	%	Number	%	Number	%	Number
1.	1.0	1	0.0	0	0.0	0	0.7	1
2.	0.0	0	4.0	1	16.7	2	2.2	3
3.	7.2	7	0.0	0	0.0	0	5.2	7

4.	13.4	13	12.0	3	25.0	3	14.2	19
5.	27.8	27	20.0	5	25.0	3	26.1	35
6.	33.0	32	52.0	13	16.7	2	35.1	47
7.	17.5	17	12.0	3	16.7	2	16.4	22
Ranking statistics	Median: 6 Mean: 5.4 Variance: 1.5 SD: 1.2 Lower quartile: 5.0 Upper quartile: 6.0		Median: 6 Mean: 5.5 Variance: 1.3 SD: 1.1 Lower quartile: 5.0 Upper quartile: 6.0		Median: 5 Mean: 4.8 Variance: 2.8 SD: 1.7 Lower quartile: 4.0 Upper quartile: 6.0		Median: 6 Mean: 5.3 Variance: 1.6 SD: 1.3 Lower quartile: 5.0 Upper quartile: 6.0	

Table 21: Results for Question7_a

Chart 19: Histogram Q7_a - UK
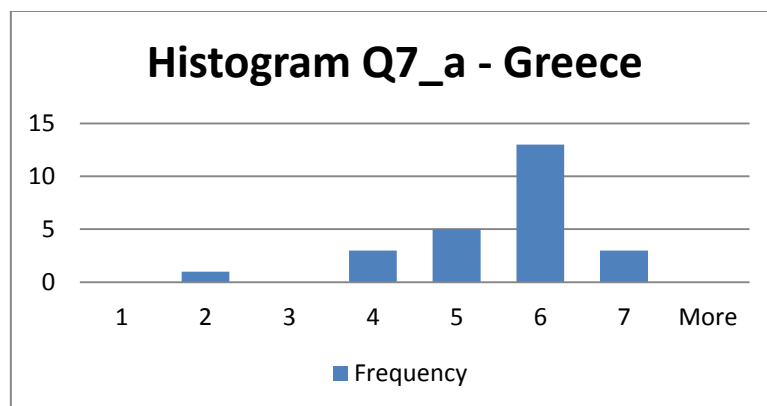
Chart 20: Histogram Q7_a - Greece

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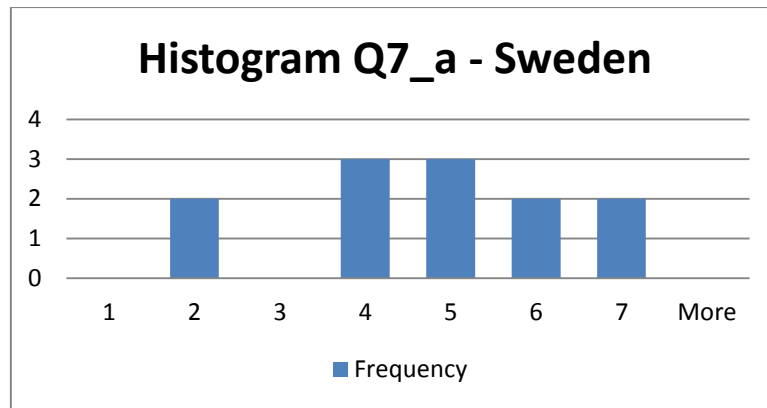
Question 7b, of section 4, was concerned with the 'past outcomes in Negotiations' as a factor influencing demands and aspirations during a negotiation task (see Table 22).

The results in the UK lead to a distribution slightly skewed in the side of the upper side of the scale. The 30.9% of the respondents in the UK selected the value-5 of the scale, expressing a reluctance to assign higher significance to factor under examination. Value-6 concentrated 24.7% of the replies of the total. In the third place with 22.7% of the total responses was value-4. Then, value-7 followed, representing the choice of 11.3% of the participants. 6.2% was attributed to value-3 and 4.1% in value-2. Value-1 was not chosen by any participant.

The median in this question was equal to 5 as was the median. The variance was equal to 1.6 and the standard deviation 1.2. The lower quartile was equal with 4 and the upper with 6.

In Greece 24% of the participants (that can be translated into 6 participants) selected value-7 as their choice. Each of the options value-6, value-5, and value-4 received a 20% slice of the pie. The 12% of the total responses in Greece were assigned in value 3. The remaining 4% of the responses was received by value-2.

The median was equal to 5 and the mean received a value of 5.1. The variance and the standard deviation were equal to 2.3 and 1.5 respectively. The lower quartile was equal to 4 and the upper was equal to 6.

In Sweden the category that managed to gather the most responses was value- 6, receiving the 41.7% of the responses. Both value-2 and value-3 received 16.7% of the Swedish

participants. The remaining was equally divided (8.3% to each) into the values 4, 5, and 7. Value-1 did not receive any responses.

The median was 5.5, the mean was equal to 4.7, the Variance 3.2 and the standard deviation 1.8. The lower quartile received the value of 3 and the upper quartile was equal to 6.

The aggregate results for this question showed a slightly skewed distribution on the upper side of the scale. Value-5 received the higher percentage of responses reaching 26.9%. In the second place was value-6, after 25.4% of the participants selected this category as their answer. In the third place with 20.9% of the total number of experts was value-4. Value-7 received 13.4% of the aggregate responses. Value-3 concentrated 8.2% of the total and value-2 only 5.2%. Value-1 did not receive any responses even in the aggregate results.

The median as the mean of the aggregate results was equal to 5. The variance was equal to 1.8 and the standard deviation was equal to 1.3. The lower quartile was equal to 4 and the upper quartile was equal to 6.

Question 7b:	"How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?"							
Factor (7b)	"Past outcomes in Negotiations"							
Country	UK		Greece		Sweden		All	
Answers (Not Significant- Very Significant)	%	Number	%	Number	%	Number	%	Number
1.	0.0	0	0.0	0	0.0	0	0.0	0
2.	4.1	4	4.0	1	16.7	2	5.2	7
3.	6.2	6	12.0	3	16.7	2	8.2	11
4.	22.7	22	20.0	5	8.3	1	20.9	28
5.	30.9	30	20.0	5	8.3	1	26.9	36

							25.4	
6.	24.7	24	20.0	5	41.7	5	25.4	34
7.	11.3	11	24.0	6	8.3	1	13.4	18
Ranking statistics	Median: 5 Mean: 5.0 Variance: 1.6 SD: 1.2 Lower quartile: 4.0 Upper quartile: 6.0		Median: 5 Mean: 5.1 Variance: 2.3 SD: 1.5 Lower quartile: 4.0 Upper quartile: 6.0		Median: 5.5 Mean: 4.7 Variance: 3.2 SD: 1.8 Lower quartile: 3.0 Upper quartile: 6.0		Median: 5 Mean: 5.0 Variance: 1.8 SD: 1.3 Lower quartile: 4.0 Upper quartile: 6.0	

Table 22: Result for Question7_b
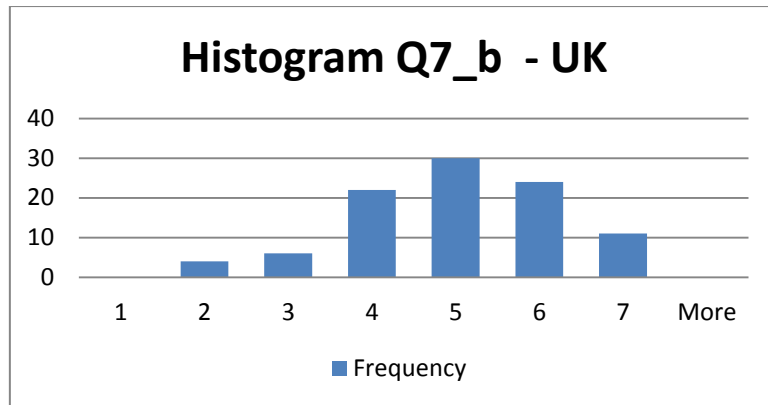
Chart 22: Histogram Q7_b - UK

Chart 23: Histogram Q7_b - Greece

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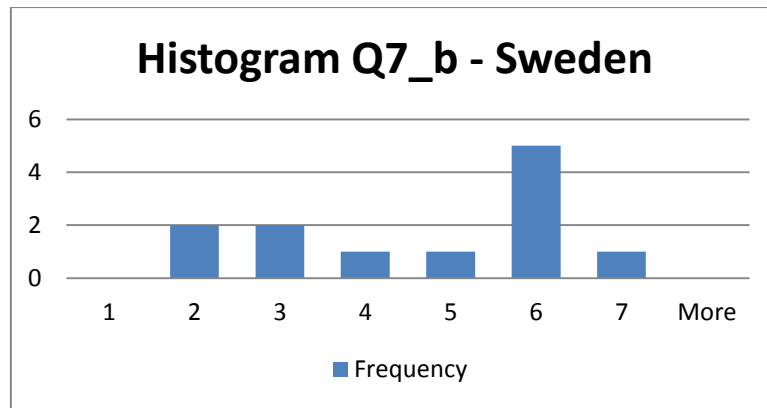
Chart 24: Histogram Q7_b - Sweden

Question 7c was concerned with the variable 'Economic Indices'. The final results aligned with our expectations (see Table 23). In section three, this variable had gathered a high percentage of the total responses and therefore a tendency towards the upper scale was anticipated

The results in the UK were concentrated in the upper side of the scale. The category with the most responses was value 6. Value 6 concentrated 32% of the response. The second in hierarchy, as far as the responses of the experts, was value 5 with 26.8%. A considerable 20.6% has chosen category 4. Both value 9 and value 3 got 9.3% of the total. The remaining 2.1% was assigned in value 2.

The median was equal to 5 and the mean equal to 5.1. The variance was equal to 1.5 and the standard deviation got the value of 1.2. The lower quartile was equal to 4 and the upper was equal to 6.

In Greece, 36% of the responses chose value-6 as their attitude towards this factor. Both values-4 and value-7 received a 20% of the participants. Value-2 concentrated the 16% of the responses. The remaining 8% selected value-3 as their choice.
The median was equal to 6 and the mean was equal to 5.4. The variance and the standard deviation equalled 1.6 and 1.3 respectively. The lower quartile was equal to 4 and the upper quartile was equal to 6.

In Sweden 41.7% of the respondents selected value-6 as their choice. Each of the values-3, and value-7 received 25% of the Swedish participants. The remaining 8.3% was attributed to value-5.

The median was equal to 6 and the mean was equal to 5.7. The variance was 1.3 and standard deviation was equal to 1.2. The lower quartile got a value of 4.8 and the upper quartile was equal to 6.2.

The aggregate results of this question revealed that a vast percentage of 33.6% selected the value-6 of the scale. Value-5 received 23.1% of the total responses if we consider the results in all three countries. Third in the ranking was value-4, with a 20.9% of the total responses. Value-7 received 12.7% of the aggregate responses.

The median of the aggregate was equal to 5 and the mean equalled 5.2. The variance and the standard deviation were equal to 1.5 and 1.2 respectively. The lower quartile was equal to 4.0 and the upper quartile was equal to 6.

Question 7c:	"How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?"							
Factor (7c)	"Economic Indices of the Economy (Inflation, Unemployment, etc.) "							
Country	UK		Greece		Sweden		All	
Answers (Not Significant-Very Significant)	%	Number	%	Number	%	Number	%	Number
1.	0.0	0	0.0	0	0.0	0	0.0	0
2.	2.1	2	0.0	0	0.0	0	1.5	2
3.	9.3	9	8.0	2	0.0	0	8.2	11
4.	20.6	20	20.0	5	25.0	3	20.9	28

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5.	26.8	26	16.0	4	8.3	1	23.1	31
6.	32.0	31	36.0	9	41.7	5	33.6	45
7.	9.3	9	20.0	5	25.0	3	12.7	17
Ranking statistics	Median: 5 Mean: 5.1 Variance: 1.5 SD: 1.2 Lower quartile: 4.0 Upper quartile: 6.0		Median: 6 Mean: 5.4 Variance: 1.6 SD: 1.3 Lower quartile: 4.0 Upper quartile: 6.0		Median: 6 Mean: 5.7 Variance: 1.3 SD: 1.2 Lower quartile: 4.8 Upper quartile: 6.2		Median: 5 Mean: 5.2 Variance: 1.5 SD: 1.2 Lower quartile: 4.0 Upper quartile: 6.0

Table 23: Results for Question7_c
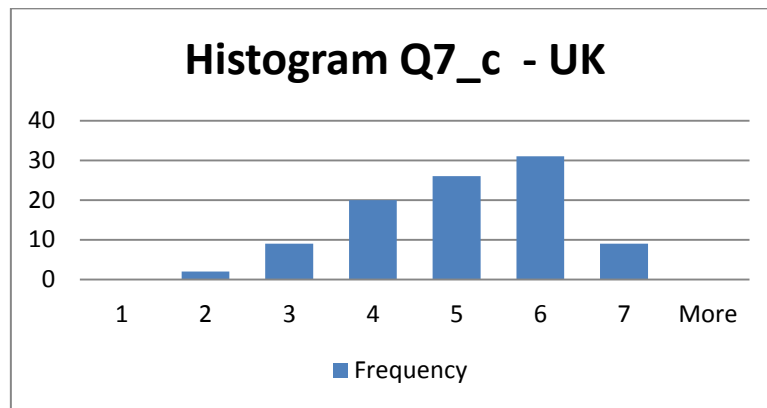
Chart 25: Histogram Q7_c - UK
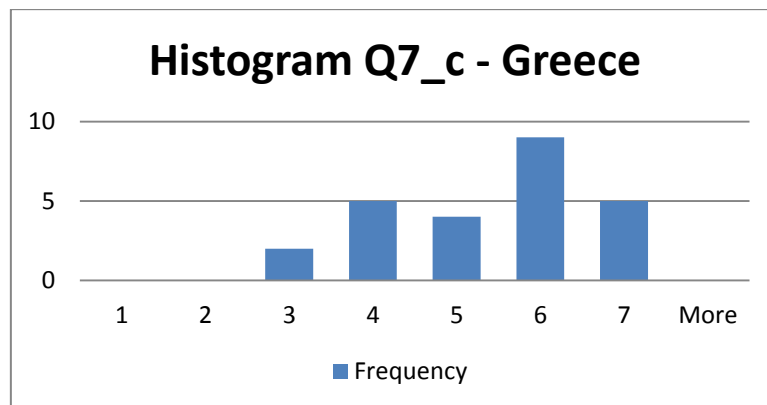
**Chart 26: Histogram Q7_c - Greece**

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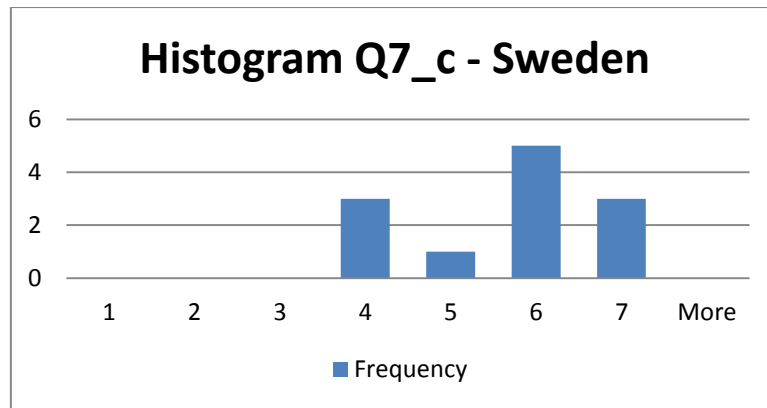
In question 7d the variable 'Relative Bargaining Power Each Party', which happened to be the one that received the greatest percentage in the previous section, was tested again in terms of significance. The results showed a strong tendency to assign a very significant influence of this factor on negotiations (see Table 24).

In the UK there both values of 6 and 7 received a very high response rate equal to 39.2% and 36.1% respectively. Value-5 followed with 17.5% of the total responses. The rest of the options received relatively low response rates. Value- 4 received the 5.2% of the total responses. Each of the options of value-2 and value-3 concentrated the 1% of the participants. Value one has not been selected by any of the respondents.

Both the median and the mean equalled to 6. The variance and the standard deviation were equal to 1. The lower quartile was equal 6 and the upper got the value of 7. These descriptive statistics reveal that the respondents considered this variable of great importance.

In Greece the results showed a tendency to the upper side of the scale. Both options of value-7 and value-6 received a 36% of the total responses. Value-5 was selected by the 12% of the participants in Greece. 8% of the respondents chose value-4 as their selection. Both options of value-2 and value-3 received an equal rate of 4% of the total responses. The other two options did not manage to receive any response.

The median was equal to 6 and the mean equalled 5.8. The value of the variance was 1.8 and the standard deviation was 1.4. The lower quartile was 5 and the upper was 7.

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In Sweden, the majority selected value-5 as their choice. More precisely, Value-5 received the 50% of the respondents. Both values 6 and 7 received a quarter of the total responses. The rest of the options did not receive any response.

The median was equal to 5.5 and the mean was equal to 5.8. The variance was 0.8 and the standard deviation was 0.9. The lower quartile was 5 and the upper was 7.

The aggregate results followed the pervasive trend already mentioned in all three countries. The most popular answer was value-6 which accumulated 37.3% of the aggregate total responses. The second most popular answer was value-7 with a responses rate of 35.1%. Value-5 received 19.4% of the responses. A quite smaller percentage, 5.2, was received by option value-4. Both values 2 and 3 received a percentage of 1.5 of the aggregate total. Value-1 did not receive any responses.

The median of the total was 6 and the mean 5.9. Both the variance and the standard deviation were equal to 1.1. The lower quartile was equal to 5 and the upper one was equal to 7.

Question 7d:	"How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?"							
Factor (7d)	"Relative Bargaining Power of Each Party"							
Country	UK		Greece		Sweden		All	
Answers (Not Significant-Very Significant)	%	Number	%	Number	%	Number	%	Number
1.	0.0	0	0.0	0	0.0	0	0.0	0
2.	1.0	1	4.0	1	0.0	0	1.5	2
3.	1.0	1	4.0	1	0.0	0	1.5	2
4.	5.2	5	8.0	2	0.0	0	5.2	7
5.	17.5	17	12.0	3	50.0	6	19.4	26

| 6.	39.2	38	36.0	9	25.0	3	37.3	50
7.	36.1	35	36.0	9	25.0	3	35.1	47
Ranking statistics	Median: 6 Mean: 6.0 Variance: 1.0 SD: 1.0 Lower quartile: 6.0 Upper quartile: 7.0		Median: 6 Mean: 5.8 Variance: 1.8 SD: 1.4 Lower quartile: 5.0 Upper quartile: 7.0		Median: 5.5 Mean: 5.8 Variance: 0.8 SD: 0.9 Lower quartile: 5.0 Upper quartile: 6.2		Median: 6 Mean: 5.9 Variance: 1.1 SD: 1.1 Lower quartile: 5.0 Upper quartile: 7.0	

Table 24: Results for Question7_d
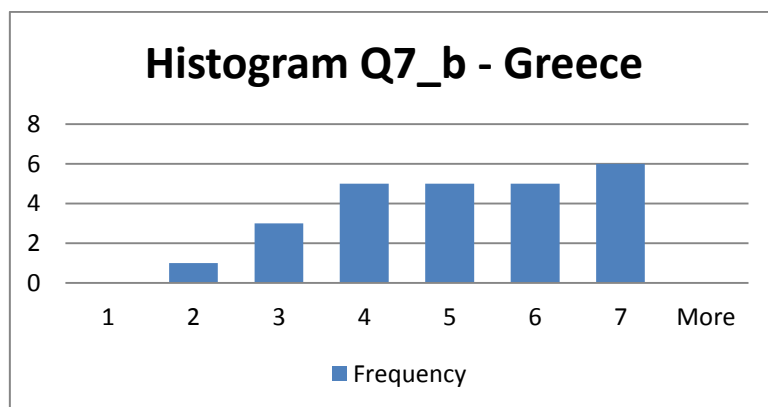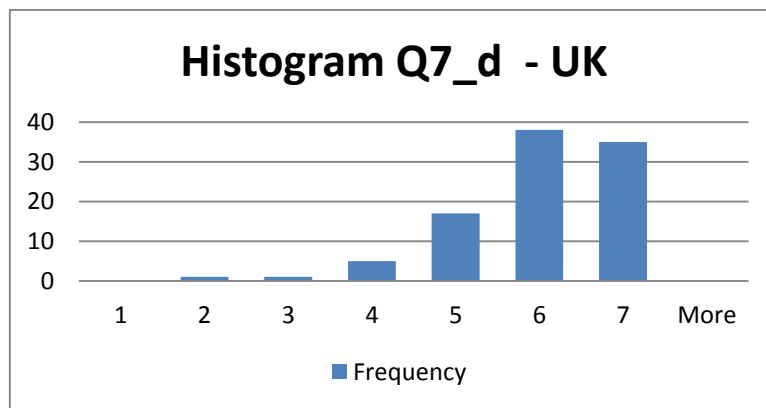

Chart 28: Histogram Q7_d - UK
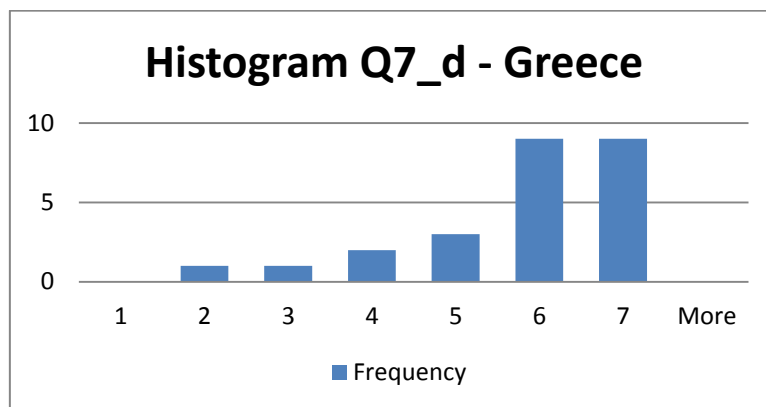
Chart 29: Histogram Q7_d - Greece

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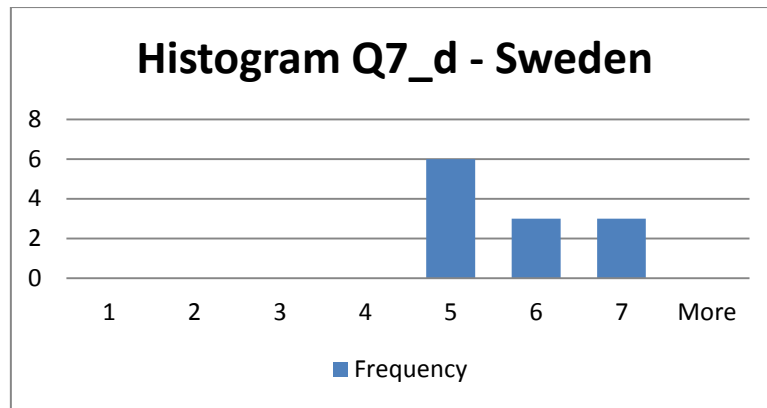
Chart 30: Histogram Q7_d - Sweden

In Question 7e of section 4, the significance of the factor 'Media-Spotlight' was tested (see Table 25).

In the UK the results followed almost a normal distribution. Value-4 concentrated the 25.8% of the responses. Each of the categories 3 and 5 were selected by 21.6% of the participants. Value-2 got 15.5% of responses of the experts in the UK. 11.3% of the academics based in the UK chose category 6 as their answer. Value-1 gathered 3.1% and value 7 only 1.0% of the total participants.

The median was equal to 4 and the mean 3.9. The variance and the standard deviation were equally to 1.9 and 1.4 respectively. The lower quartile was equal to 3 and the upper one was equal to 5.

The results in Greece followed a different distribution. Value-3 and value-4 gathered the greater number of responses; each representing 24% of the total responses. Category 2 was selected by 20% of the respondents. Value-6, followed with 12%. Each of the values 7 and 5 gathered 8% of the total participants and value 1 was selected only by 4%.

The median was equal to 4 and the mean to 3.8. The variance's value was 2.8 and the standard deviation equalled 1.7. The lower quartile was 3 and the upper 5.

The results for this question in Sweden are not evenly distributed compared with the other two countries. As a choice, Value 3 concentrated 41.7% of the participants. Value 5 followed with a considerable 33.3% of the respondents. The remaining was equally divided into the

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values, 1, 4 and 6; each receiving 8.3% of the total participants. The other two categories, 2 and 7 did not manage to attract any confirmatory responses.

The median was equal to 3.5 and the mean got the value 3.8. The variance was equal to 2.0 and the standard deviation equalled with 1.4. The lower quartile was equal to 3.0 and the upper was equal to 5.0.

An examination of the overall results showed that each of the values 3 and 4 managed to gather 23.9% of the total aggregate of the participants. Category 5 received 20.1% of the total and category 2 the 14.9%. Value1 accumulated the 3.7% of all the respondents. The category that received the fewer responses of all was value-7. This category was selected only by 2.2% of the aggregate total.

The median was equal to 4 and the mean was calculated equal to 3.8. The variance got a value of 2.0 and the standard deviation equalled 1.4. The lower quartile was 3.0 and the upper one was equal to 5.0.
This factor, according to the results of the survey, seemed less important for the participants.

Question 7e:	"How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?"							
Factor (7e)	"Media- spotlight" the Attention that the Negotiation Process Has from the Media"							
Country	UK		Greece		Sweden		All	
Answers (Not Significant-Very Significant)	%	Number	%	Number	%	Number	%	Number
1.	3.1	3	4.0	1	8.3	1	3.7	5
2.	15.5	15	20.0	5	0.0	0	14.9	20
3.	21.6	21	24.0	6	41.7	5	23.9	32

4.	25.8	25	24.0	6	8.3	1	23.9	32
5.	21.6	21	8.0	2	33.3	4	20.1	27
6.	11.3	11	12.0	3	8.3	1	11.2	15
7.	1.0	1	8.0	2	0.0	0	2.2	3
Ranking statistics	Median: 4 Mean: 3.9 Variance: 1.9 SD: 1.4 Lower quartile: 3.0 Upper quartile: 5.0		Median: 4 Mean: 3.8 Variance: 2.8 SD: 1.7 Lower quartile: 3.0 Upper quartile: 5.0		Median: 3.5 Mean: 3.8 Variance: 2.0 SD: 1.4 Lower quartile: 3.0 Upper quartile: 5.0		Median: 4 Mean: 3.8 Variance: 2.0 SD: 1.4 Lower quartile: 3.0 Upper quartile: 5.0	

**Table 25: Results for Question7_e**
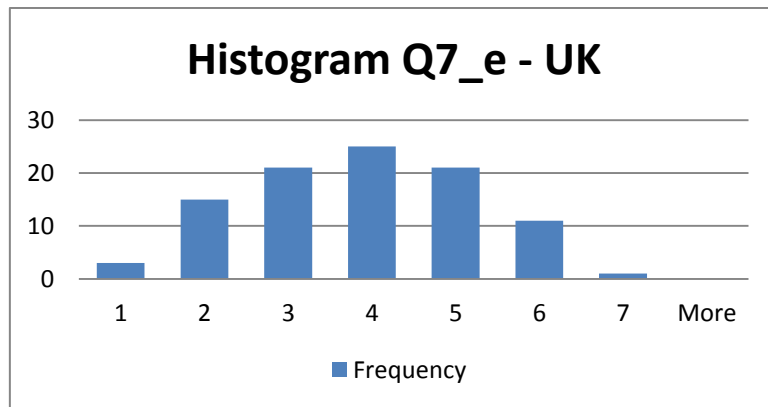
Chart 31: Histogram Q7_e – UK
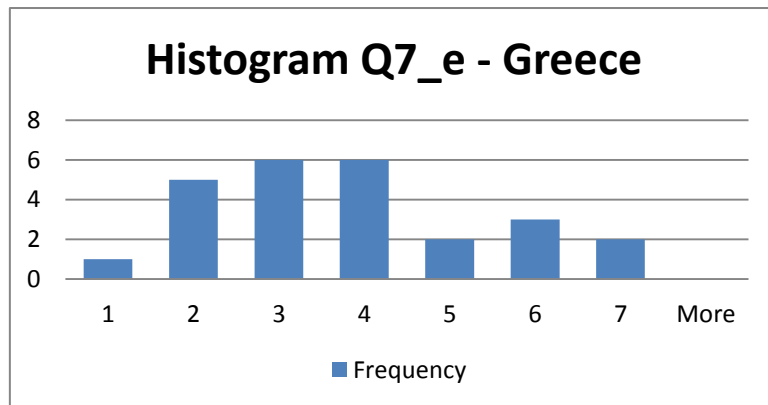
Chart 32: Histogram Q7_e - Greece
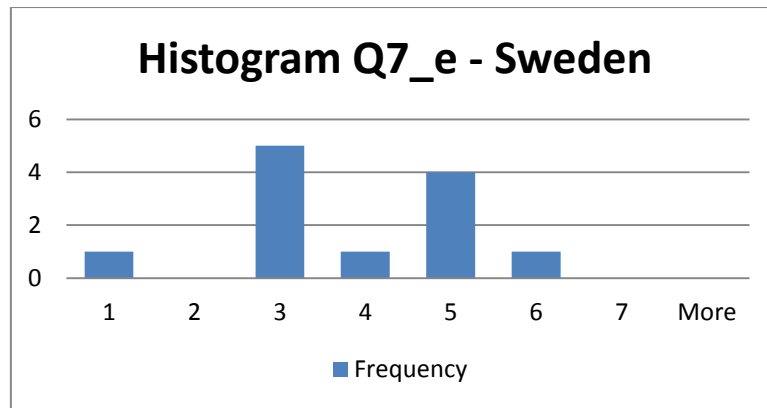
Chart 33: Histogram Q7_e - Sweden

In question 7f of section four the significance of the factor 'Special Economic Events' was taken under consideration (see Table 26).

In the UK, value 4 was selected by most participants, accumulating 36.1%. The category that received the second largest percentage was value 6 which received 22.7% of the responses. Value-2 followed, with a percentage of 12.4%. Similar slice of the pie was assigned to value 2, 11.3%. Despite the large percentage of value-4 and value-6, only 9.3% of the total responses attributed to value-5. Value-7 gathered 5.2% of the respondents and value 1 only the 3.1%.

The median was equal to 4 and the mean equalled to 4.3. The value of the variance was 2.3 and the value of the standard deviation was calculated 1.5. The lower quartile was equal with 3 and the upper quartile was equal with 6.

The distribution in Greece for this particular question seemed slightly skewed in towards the upper side of the scale. Value-7 received the most responses, reaching 36.0% of the total. Value 6 received a considerable amount of the total responses. The final percentage of this category was 28%. Value-5 followed, representing the attitude of 20% of the participants. Value-4 received only 8% of the total responses. Each of the values 2 and 3 were selected by the 4% of the participants. None of the respondents selected value-1.

The Median was equal to 6 and the mean 5.7. The variance was calculated 1.9 and the standard deviation equalled 1.4. The lower quartile was equal to 5.0 and the upper quartile was equal to 7.

The results in Greece signal that the experts in this country assign greater significance to the 'Special Economic Events.'

In Sweden the results followed a similar path as in Greece. The main bulk of the responses have been concentrated in the upper side of the scale. Value-5 received the greater amount of responses. More precisely, 41.7% of the participants selected value-5 as their choice. Both value-4 and value-6 received the same amount of responses. Each received a slice of 25%. The remaining 8.3% selected value-7 as their answer in this question. The rest of the values did not receive any response.

The median was equal to 5and the mean was equal to 5.2. The variance was calculated 039 and the standard deviation was equal to 0.9. The lower quartile was 4.8 and the upper quartile equalled to 6.0.

In the aggregate results, value-4 received the greater number of responses. Value-4 was the choice of 29.9% of the respondents. Value-6 received 23.9% of the total aggregate of the participants. The third larger percentage was received by value-5. In short, 14.2% of the respondents chose value-5. Value-7 gathered 11.2% of the total. Value-3 and value-2 were really close, receiving 9.7% and 9% respectively. A minor percentage of 2.2 selected value-1. The median was equal to 4 and the mean was 4.6. The variance was calculated 2.4 and the standard deviation equalled 1.6. The lower quartile was 4.0 and the upper one equalled 6.0.

Question 7f:	"How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?"							
Factor (7f)	"The Existence of a Special Economic Event (Economic Crisis, EU-Membership, Euro-Membership)"							
Country	UK		Greece		Sweden		All	
Answers (Not Significant-Very	%	Number	%	Number	%	Number	%	Number

Significant)								
1.	3.1	3	0.0	0	0.0	0	2.2	3
2.	11.3	11	4.0	1	0.0	0	9.0	12
3.	12.4	12	4.0	1	0.0	0	9.7	13
4.	36.1	35	8.0	2	25.0	3	29.9	40
5.	9.3	9	20.0	5	41.7	5	14.2	19
6.	22.7	22	28.0	7	25.0	3	23.9	32
7.	5.2	5	36.0	9	8.3	1	11.2	15
Ranking statistics	Median: 4 Mean: 4.3 Variance: 2.3 SD: 1.5 Lower quartile: 3.0 Upper quartile: 6.0		Median: 6 Mean: 5.7 Variance: 1.9 SD: 1.4 Lower quartile: 5.0 Upper quartile: 7.0		Median: 5 Mean: 5.2 Variance: 0.9 SD: 0.9 Lower quartile: 4.8 Upper quartile: 6.0		Median: 4 Mean: 4.6 Variance: 2.4 SD: 1.6 Lower quartile: 4.0 Upper quartile: 6.0	

Table 26: Results for Question7_f
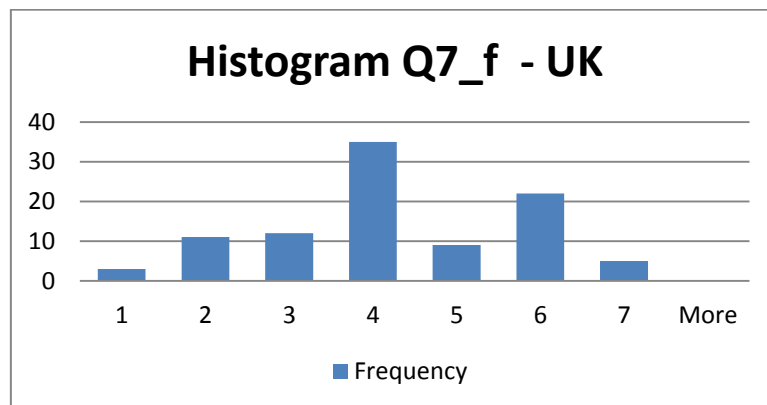
Chart 34: Histogram Q7_f - UK
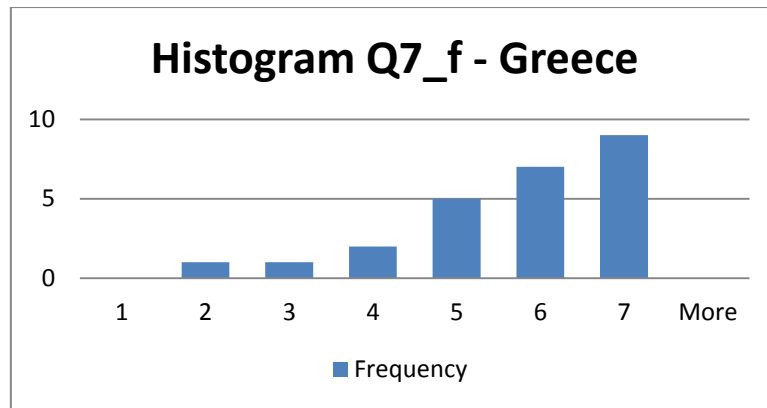
Chart 35: Histogram Q7_f - Greece
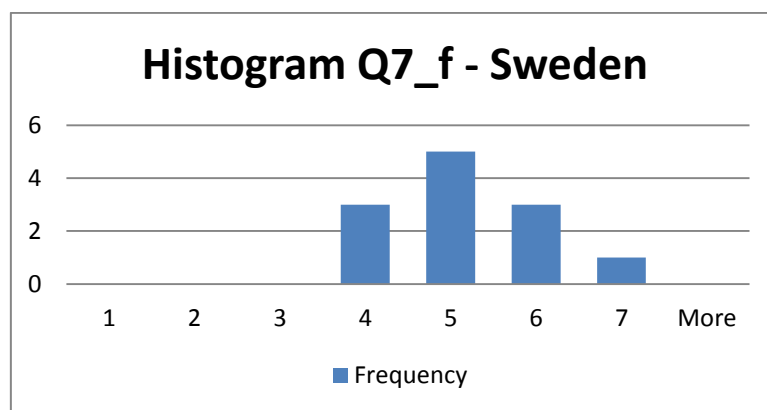
Chart 36: Histogram Q7_f - Sweden

6.6 Explanatory Insight from the Open Question.

The open question at the very end of the questionnaire managed to gather a number of interesting comments. These comments addressed concerns, suggestions and insights that helped us understand better the issues that negotiation analysis has to confront.

Some of these comments pointed out some concerns about the abstract nature of some questions that were incorporated in the questionnaire. However, the questionnaire was amended according the suggestion received in the pilot phase thus, nothing could be done about these specific problems.

Others gave us some useful comments about specific factors that prevail in the country on which they are based. Despite the importance of these comments, the proposed theory aimed

to have a great degree of generalizability hence some country-specific factors had to be omitted or smoothed in order to meet the aforementioned aim.

Some of these comments were suggestions on how to approach this study. For example one of the comments, encouraged us to use a historical perspective in order to add more insight to the study. Others addressed the importance of solidarity between the trade union members. Of course, as it was mentioned earlier, this is something that it taken as granted in our research. Trade union members have homogeneous members. Moreover, further attention to varieties of capitalism and institutional theory was suggested by one of the participants. However, this is something that the study already took into account, even if, it is not straightforward from the distributed questionnaire.

A number of comments underlined the importance that personal characteristics of the negotiators have in the negotiation process. Nevertheless, this study has a different objective and does not focus on some characteristics of the negotiator such as leadership skills. Thus, this study aims to define the result without assessing the personal characteristic of the negotiators that will influence the final distribution and the details of the outcome.

Nevertheless, a few of these comments worked as useful food for thought in order to incorporate them in future research.

6.7 Conclusion

In this chapter confirmatory evidence to support the first research question was sought. Therefore, an electronic questionnaire was designed and distributed in three countries (the UK, Greece and Sweden).

The final results supported the importance of variables that have been employed by the researcher. It is worth mentioning that in all three countries, similar results have been observed. Moreover, the basic concepts that have been used as building blocks, gathered considerable support by most academics that participated in the survey. All attitude questions addressed the importance of variables used in the proposed theory, adding extra validity to the confirmatory evidence revealed by the main body of the questionnaire.

In addition, no considerable objections about the theoretical concepts and the variables used have been made in the section of the open questions. The open questions offered the opportunity to the participants to express their suggestions about other variables that have not been mentioned in the questionnaire. Moreover, they could address their objections about the concepts employed as building blocks in the theory. However, mostly comments that could be used in future research projects appeared in these sections.

To sum up, the final results verified that the set of variables employed in the system are perceived as extremely influential by a pool of experts who have expertise on labour-management negotiations.

7. Numerical Experimentation

7.1 Introduction

In order to examine all the possible results that can be generated by the system that was created for the purpose of this study, a numerical analysis of all possible calculations was made. More precisely, with the term numerical experimentation the following process is inferred. By generating all different values for each uncertain variable the computation of all possible results for the 'Final' latent variable are made.

7.2 Conducting the Numerical Experimentation

The proposed set of rules, in this study, has 6 inputs that get values from ranges with 3 elements. The 3 –combinations for all 3 are 2^3-1=7 (excluding the empty set), so each input be assigned with one of 7 different combinations from its range of values. Thus, all possible combinations of inputs to the system for all 6 input variables are 7^6=117649. The time for a simple scenario (when each variable has one only one value) is less than half a second. To conduct all the 117649 scenarios the system needs approximately sixteen minutes.

These combinations were constructed with the help of the developed software (see Chapter 5) and their results were stored in a table of a database. The first 6 fields of the table contain the actual values of the input variables the next 4 the results for the current inputs and the last field contains the code of the record which is actually the number of the Row. The structure of the table is the following:

Column Name	Type	Comment
i1	[nvarchar](255)	Input for Inflation Rate
i2	[nvarchar](255)	Input for Unemployment Rate
i3	[nvarchar](255)	Input for Relative Profitability (RP) of the Firm or Sector
i4	[nvarchar](255)	Input for Management
i5	[nvarchar](255)	Input for Labour
i6	[nvarchar](255)	Input for Economy Coordination
r1	Float	Output for CC

r2		Float				Output for NC-C				
r3		Float				Output for C-NC				
r4		Float				Output for NC-NC				
code		Integer				Nr. of Row				

<div align="center">

Table 27 Developing the Software

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A typical example of a row follows:

i1	i2	i3	i4	i5	i6	r1	r2	r3	r4	code
Low	Low	Low Average	Medium High	Medium High	1 2 3	50	13,75	11,25	25	972

<div align="center">

Table 28: A Row of a Full Scenario

</div>

7.3 The Calculated Results

7.3.1 The Histograms of each Cell

In figure X the histogram for r1 can be found, figure Y contains the histogram for r2, figure Z and figure ZZ show the histograms for r3 and r4 respectively. In the figure GG a histogram for columns r1, r2, r3 and r4 (result columns) can be found giving a general overview of the frequency of the outcomes. The intervals of all histograms have a width of 5 units helping to classify all the observed results. In the following sections instead of columns r1, r2, re and r4 the terminology of the proposed theory P1, P2, P3, and P4 will be used when analyzing the histograms and some specific results.

In the first (Chart 37) the histogram of the outcomes for P1 (Cell 1) of the matrix can be found. The histogram in Chart 37 reveals that the P1 has a slightly stable tendency to have a considerable number of outcomes from 35 to 70 percent; results that can be seen as outputs that have considerable feasibility to be the real outcome. Nevertheless, the main bulk of results are concentrated from 10 to 30 percent showing that a solution to the PD game is not a straightforward task and many times the negotiators might reach a different outcome.

Compared with rest of the cells the most striking fact that should be addressed is that in the upper intervals are a few outcomes that show a great dominance of the cooperative result. These high percentages do not appear in the rest of the cells. This can be interpreted according to the following argument.

In order to achieve the cooperative result, the necessary conditions that would facilitate it, should be very favorable and the strategies very pervasive among negotiators. Therefore, if some exceptional conditions prevail in the economy or in the particular firm in which the negotiations are conducted then it would be pretty apparent for all the parties that they should reach a cooperative outcome.

The most important finding that should be addressed here is that the results showed in the histogram of the cooperative solutions reveal that the proposed theory has a slight tendency to foster trust between the negotiators. The system is generating plenty scenarios that promote the cooperative solution influencing positively both or one of the negotiators in order to adopt fostering strategies.
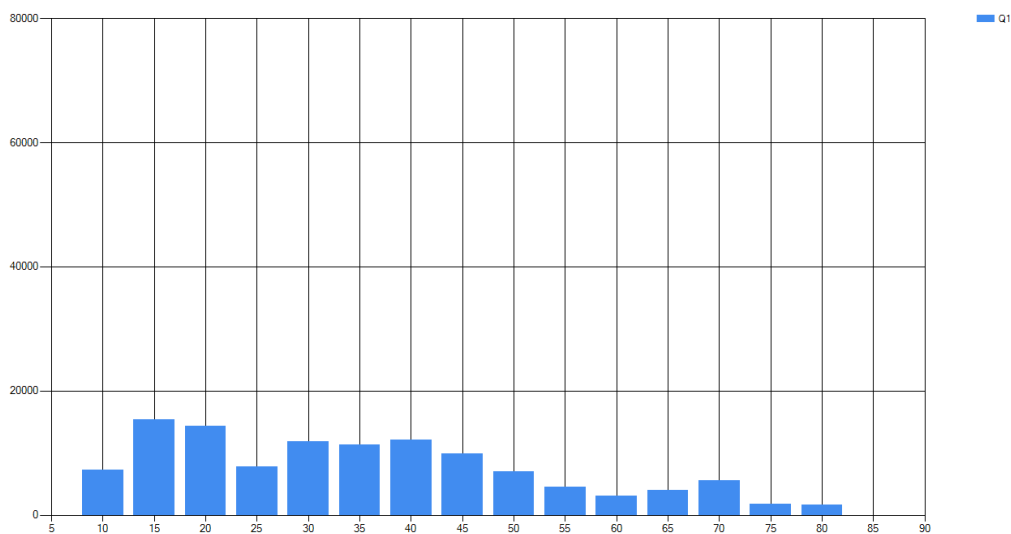
Chart 37: Histogram of P1

Interval	Width	Quantity
0	2.5	0
5	5	0
10	5	7252

15	5	15435
20	5	14308
25	5	7840
30	5	11858
35	5	11368
40	5	12103
45	5	9898
50	5	7056
55	5	4508
60	5	3038
65	5	4018
70	5	5586
75	5	1764
80	5	1617
85	5	0
90	5	0
95	5	0
100	2.5	0

<div align="center">

Table 29: Intervals and Frequency for P1

</div>

In the following two figures below the histogram of all possible outcomes for P2 and P3 are presented. As expected from the formation of the rules and their outcomes the results range for P2 was from 5 to 30 percentage units. The range for P3 was from 5 to 25.

For P2 the results show extremely high concentration to the intervals 10, 15 and 20 with the interval of 15 having the greater value. Similarly, for P3 the results are concentrated around the10 to 15 but that results are slightly skewed in the in left side with interval of 10 having the most outcomes.

These results and their differences in the aggregate generated outcomes between P2 and P3 have been in accordance with the initial design and the expectations generated from the rules of the system. Both of these cells by definition of the PD game that was used in order to

describe the negotiation process do not have a prominent position as an outcome space as no special forces lead us to each cell. Nevertheless, in real life the differences in bargaining power between the two parties can lead the outcome in one of the aforementioned cells. Giving a P2 a greater probability steams from the fact that management usually takes the final decision on the agreements and therefore we assume that it has some extra power on driving the result.

Moreover, P3 is slight weakened compared with P2 because in the proposed theory, initiating a strike, which is one of the key strategic results driven by labour, is considered a result included in the cell NC-NC.
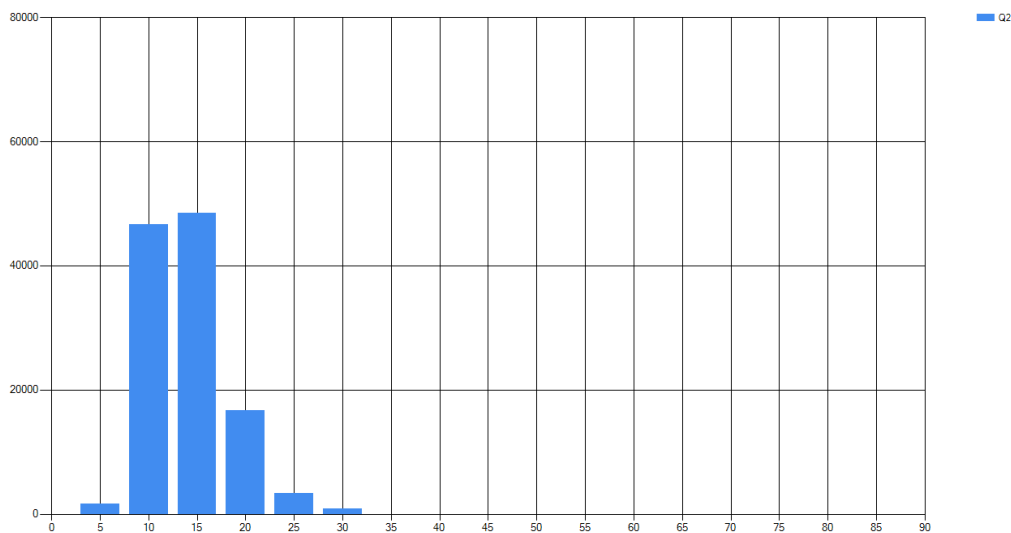
Chart 38: Histogram for P2

Interval	Width	Quantity
0	2.5	0
5	5	1666
10	5	46640
15	5	48452
20	5	16748
25	5	3327
30	5	816
35	5	0

40	5	0
45	5	0
50	5	0
55	5	0
60	5	0
65	5	0
70	5	0
75	5	0
80	5	0
85	5	0
90	5	0
95	5	0
100	2.5	0

Table 30: Intervals and Frequency for P2
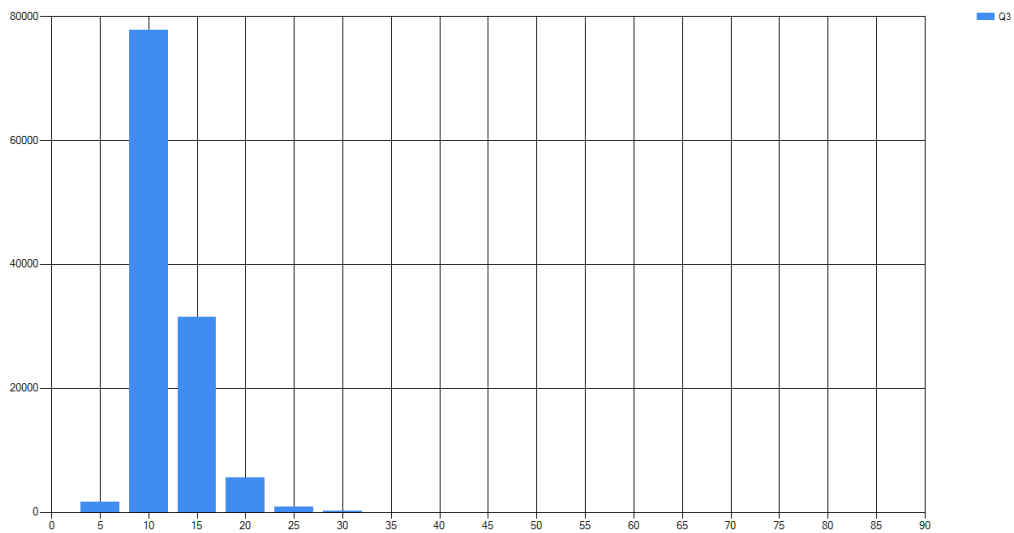
Chart 39: Histogram for Q3

Interval	Width	Quantity
0	5	0
5	5	1666
10	5	77852
15	5	31452

213

20	5	5533
25	5	906
30	5	240
35	5	0
40	5	0
45	5	0
50	5	0
55	5	0
60	5	0
65	5	0
70	5	0
75	5	0
80	5	0
85	5	0
90	5	0
95	5	0
100	2.5	0

Table 31: Intervals and Frequency for P3

In Chart 40 the histogram of the Non-Cooperative results (P4) is presented. In this cell the results are mainly concentrated between 30-60 percent revealing a something relevant to a uniform distribution in the aforementioned range. The interval that has the most generated results for P4 is the 35 followed by the 50. The large number observed for the interval of 50 is in accordance with the endogenous dynamic that this cell has by definition. Negotiators due to rationality, fear or lack of information have a great tendency to resign to strategies that will lead to a non-cooperative solution that will results in non-optimal results. Another interesting thing is that the interval 10 has a large number of appearances, showing the intention of the propose theory to underline that this cell has always probability even small to appear as the result of the negotiations.
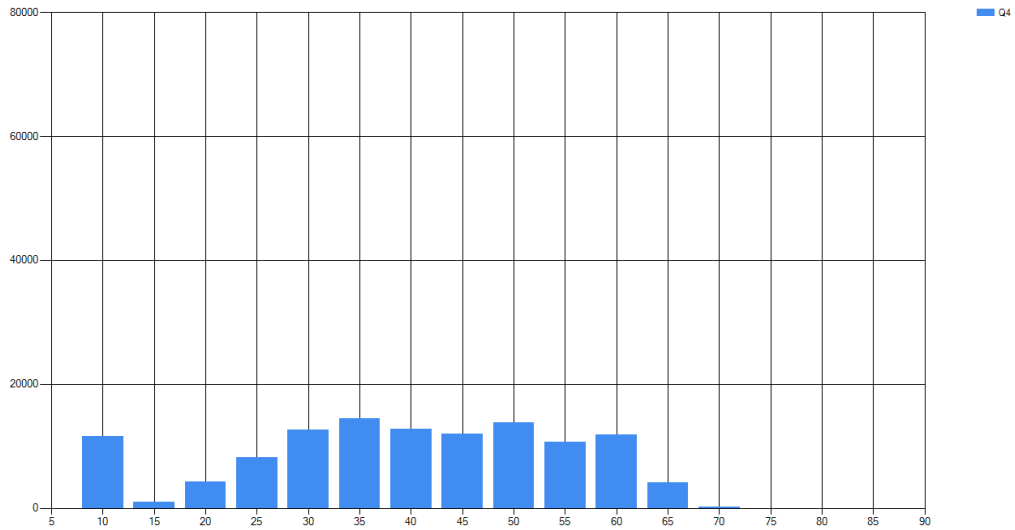
Chart 40: Histogram for P4

Interval	Width	Quantity
0	2,5	0
5	5	0
10	5	11613
15	5	931
20	5	4312
25	5	8183
30	5	12691
35	5	14504
40	5	12740
45	5	12005
50	5	13867
55	5	10633
60	5	11809
65	5	4165
70	5	196
75	5	0
80	5	0
85	5	0
90	5	0

95	5	0
100	2,5	0

The next two figures (JSK and LLS) display comparatively the distributions of the results in each cell (P1, P2, P3, and P4) after running all 117649 scenarios. It is obvious from this comparative histogram in Figure (JSK) that the PD game is resembled with some accuracy, as the P2 and P3 appear mainly with small probabilities such as 10 and 15 and the P4 has a strong presence in the results with probability around 50. The cell with the cooperative outcome (P1) is the one that appears with the higher number of estimations in the upper side as in the intervals 75 and 80.
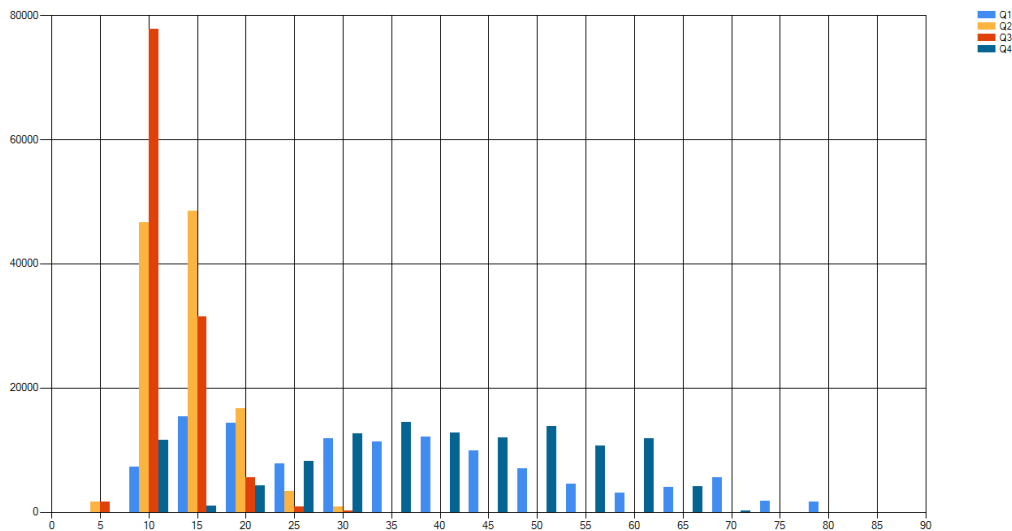
Chart 41: General Histogram

Interval	Width	Frequency: r1 (P1)	Frequency: r2 (P2)	Frequency: r3 (P3)	Frequency: r4 (P4)
0	2,5	0	0	0	0
5	5	0	1666	1666	0
10	5	7252	46640	77852	11613
15	5	15435	48452	31452	931
20	5	14308	16748	5533	4312
25	5	7840	3327	906	8183
30	5	11858	816	240	12691

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35	5	11368	0	0	14504
40	5	12103	0	0	12740
45	5	9898	0	0	12005
50	5	7056	0	0	13867
55	5	4508	0	0	10633
60	5	3038	0	0	11809
65	5	4018	0	0	4165
70	5	5586	0	0	196
75	5	1764	0	0	0
80	5	1617	0	0	0
85	5	0	0	0	0
90	5	0	0	0	0
95	5	0	0	0	0
100	2,5	0	0	0	0

Table 33: All Distributions for P1, P2, P3 and P4
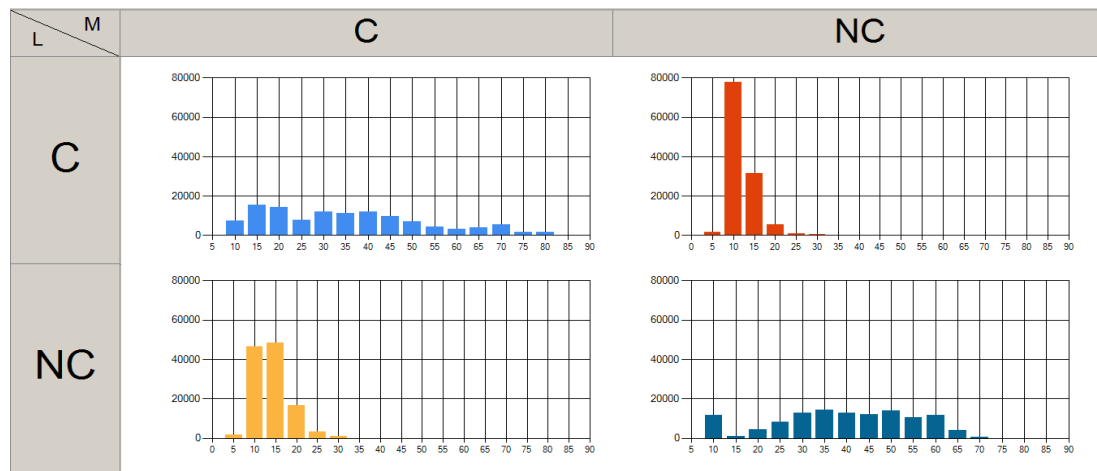
Chart 42: Histogram of each Cell

The system produces 2851 different tetrads of results. The most frequent of these tetrads can be found in the Table 30. In this table we have included only those results with frequency over 500.

Rank	C-C	C-NC	NC-C	NC-NC	Frequency
1	20	10	10	60	1911
2	70	10	10	10	1764
3	75	7,5	7,5	10	1715
4	80	5	5	10	1617
5	64	12	12	12	1617
6	72	8,5	8,5	11	1617
7	67	11	11	11	1617
8	71,33	9	9	10,67	1617
9	15	20	10	55	1173
10	15	15	15	55	828
11	17,5	15	10	57,5	816
12	10	30	10	50	765
13	15	15	10	60	663
14	12,5	17,5	10	60	663
15	10	15	10	65	663
16	15	12,5	10	62,5	663
17	10	20	20	50	589
18	45	10	10	35	588
19	17,5	12,5	12,5	57,5	576
20	21,25	20	10	48,75	561
21	25	25	10	40	510

Table 34: Results with Frequency over 500

7.4 Descriptive Statistics

In Table 37 some basic descriptive statistics like the average values (AVG), the standard deviations (STDEV), the variances (VAR), the mode values (MODE), the mean values, the maximum values (MAX) and the minimum values (MIN) of the results are presented.

	C-C	NC-C	C-NC	NC-NC
AVG	35,27	13,78	11,8	39,15
STDEV	18,2	4,04	3,04	15,02
VAR	331,12	16,32	9,23	225,47
MODE	15	10	10	60
MEDIAN	33,78	13,12	11	40
MAX	80	30	30	70
MIN	10	5	5	10

Table 35: Basic Descriptive Statistics

7.5 Other Important Facts by the Generated Results

In Table 32 below, some basic facts are presented:

- How many times the maximum value appears in which quadrants

- How many times the maximum value is 25, 30, 40, 45 or 50 units greater than the second highest (symbolized as 25+ , 30+, 35+, 40+, 45+, 50+ respectively)

- How many times the maximum value is greater than the second highest value only by 10 units or less (10-)

- How many times a quadrants has absolute majority (more than 50 units) and

- How many times a quadrants has absolute majority (more than 50 units) and maximum value is 25 units greater than the second highest

The aggregate results reveal that the proposed theory has a low tendency to favour non-cooperative results in its attempt to depict the difficulty in solving social dilemmas. Nevertheless, a considerable amount of results favour the cooperative solution revealing that there is some available space for negotiators through trust and communication to achieve integrative agreements.

	C-C	NC-C	C-NC	NC-NC	%
Appearances of Maximum	52185	0	0	65464	100
25+	22148	0	0	36186	49,58
30+	18963	0	0	29933	41,56
35+	16268	0	0	23594	33,88
40+	14945	0	0	16749	26,94
45+	12789	0	0	7666	17,39
50+	12250	0	0	2352	12,41
10-	12887	0	0	10143	19,58
Absolute majority (>50)	22197	0	0	31213	45,40
Absolute majority (>50) and 25+	21021	0	0	30674	30674

Table 36: Frequencies of Specific Scenarios

In table 38 shows how many times C-C and NC-NC prevail having their values 25, 30, 40, 45 or 50 units greater than the second highest quadrant. In the chart 43 these cases have been symbolized as 25+ , 30+, 35+, 40+, 45+, and 50+ respectively.
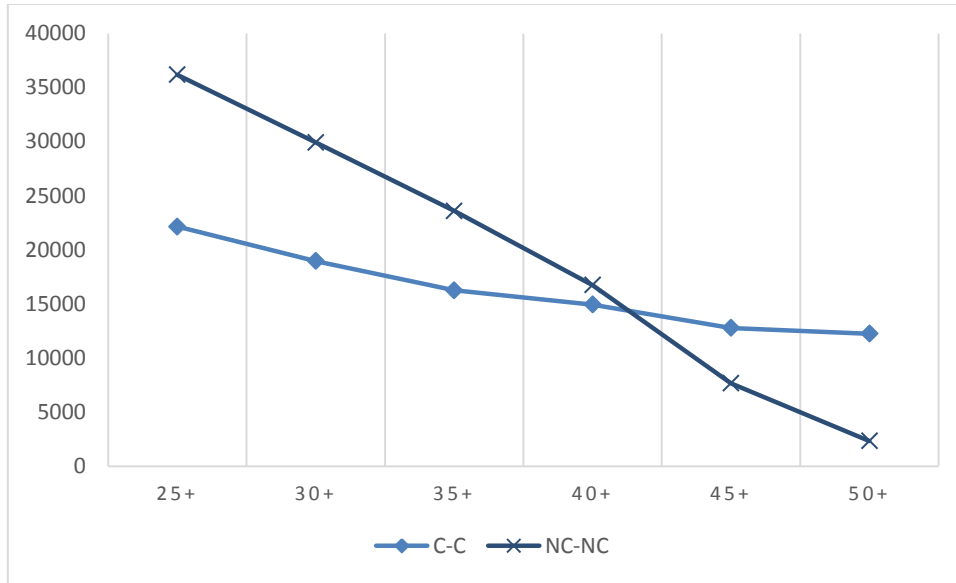
Chart 43: Prevailing Frequencies

7.5.1 Specific Cases Relevant to Institutions

It might be interesting to address some specific cases that are relevant with the institutional environment. In the table 33 the analysis of the generated results for six scenarios are presented. The first two roads show the result for the all four cells when EC is equal to 1 and EC is equal 3, respectively. The results, as expected show, a greater tendency to find a cooperative solution when EC has a the maximum, value revealing the attitude that institutions facilitate through easing exchanges the necessary trust to achieve more optimal results.

The other four scenarios reveal the influence of the institutional setting when firms are performing relatively bad or relatively good. Similarly, the results revealed that cooperative solutions are slightly inflated for the cases that EC takes the maximum value compared with the scenarios that EC has the minimum value.

	C-C	NC-C	C-NC	NC-NC
EC=1	34,63	13,21	11,60	40,56
EC =3	43,70	12,84	10,86	32,59

EC=1 and RP=Low	20,00	14,81	12,41	52,78
EC=3 and RP=Low	29,44	15,93	12,96	41,67
EC =1 and RP= High	63,89	10	10	16,11
EC =3 and RP = High	72,22	6,67	6,67	14,44

Table 37: Specific Scenarios

7.6 Conclusion

The results generated from the numerical experimentation elucidated some important aspects of the proposed theory.

First, it is important to address that the proposed theory managed accurately to resemble the PD game as the all the results reveal the general tendencies of the game. The probability P4 has a considerable amount of results in which it appears as the winning-result.

Second, taking into account all the possible outcomes from the System we can see that there is a tendency under favorable conditions to promote integrative solutions that will increase the joint outcome for both sides. Despite the tendencies that negotiators have to resort on distributive outcome through non-cooperative (NC-NC) strategies the system often estimates high probabilities in the C-C solutions that will influence negotiators positively. Creating anchoring effects towards C-C solutions the negotiators will force themselves to adopt cooperative strategies. Thus, by estimating high probabilities for P1, when the conditions favour an integrative agreement, the system will exert a 'positive anchoring' effect on the negotiating parties. This anchoring effect will be a common ground upon which both sides can work in order to achieve an integrative outcome. Therefore it is valid to argue, that by providing estimations that clearly favours the comparative outcome, higher levels trust will be fostered. Both parties will have a perception on what the environment prescribes as best alternative to happen. The generated results for P1 represent for each specific case the 'objective' scope available to the negotiators in order to achieve an integrative agreement. In this point of view, C-C has a quite high number of results on which it appears as the maximum probability in the matrix thus, promoting the aforementioned goal. The general overview offered by the results generated by the numerical experimentation, allow us to back up the second research question of this study; that the proposed theory through a Decision Support System can foster trust among negotiators and facilitate integrative agreements. As

long as the results generated by the DSS have a great tendency to lead the towards an integrative agreement it can be argued that the proposed theory can promote integrative agreements through fostering trust.

8. Interviews

8.1 Introduction

The main aim of this chapter is to discuss the findings derived from a set of interviews that were conducted with a number of experts in the field of negotiations and employment relations.

Interviews have been used as a complementary qualitative method so as to get high level of insight in our research. Due to the multidimensionality of the research problem in our endeavour, we used a multi-method approach to shed light to its facets. As we already stated in the methodology chapter, interviews are a commonly used tool for qualitative research in Social Sciences. Their structure can vary according to the depth of insight sought by the interviewer (Robson, 2002).

Because of the supplementary purpose of the interviews the form of the questionnaire was kept simple and smooth in order to be easily followed by the interviewees. In particular, a semi-structured questionnaire with six open-ended questions and one closed question was created. It is important to address, that the interviewee had to align with the options offered by the system. As a matter of fact, in order to elicit high-level insight, the questionnaire used in the interviews was a hybrid according the distinction used by Powney and Watts (1987) of "respondent" and "informative" type of interviews.

The aforementioned choice to conduct interviews with the help of a semi-structured questionnaire was taken after considering mainly two reasons. On the one hand, the concerns about the available time of the interviewee as all candidates were high ranked officials or politicians and on the other hand the necessity for flexibility due to the different professional background and training of the interviewees, that varied from economics to law studies.

In general, an attempt was made to avoid conceptual cues that might lead to manipulated answers and biases. However, some degree of bias was present as the DSS was constructed

upon specific theoretical concepts that had to be mentioned in the questions due to the time-constraints and the aim of the interviews.

More precisely, the set of items of the questionnaire incorporated a constructed example that depicted a real life collective bargaining process (see Appendix II). Moreover, it contained open-ended questions, which aimed to elucidate the most important aspects that influence negotiations and to identify the importance that Institutional frameworks have in a negotiation process. The constructed example was used as a case study, for validating the DSS, as it was used by the interviewees in order to assign values in the variables of the system. The set of open questions served mainly an exploratory purpose that can be summed up on how the Decision Support System can be ameliorate to achieve better results in terms of depicting the reality.

Nevertheless, it is worth mentioning that the objective of the questionnaire was to elicit high level feedback on different variables that could be used in a Decision Support System in order to make our predictions more credible. In addition its aim was to assess, in the degree that such an assessment is possible, the usefulness of the DSS as a tool.

The selection of the right kind of experts was performed under careful consideration. The candidates should had specific high-ranked employment related positions and profiles.

The pool of experts used in our research had to satisfy specific criteria. As matter of fact, the selection of the sample could be characterized as a "purposive sampling" (Robson, 2002). For this sample high level experts that served from key positions within relevant jurisdiction as Ministries of Finance or Ministers of Employment and Social Affairs have been sought. An Academic background, in relevant discipline, was weighed as an important feature as the expert would be able to understand better the theoretical constraints that our research encountered. Another feature used in order to qualify a person as a candidate for our sample was the participation of that person in a Labour Union position that attributed to this person a real-life experience on wage negotiations. Purposive sampling was necessary in order to gain the high quality feedback we were aiming by this qualitative method; meeting the complex requirements of our research.

8.2 General Comments Derived from the Interviews

The feedback received from the interviews could be characterized as quite interesting and useful in order shed some light on the practical limitations that a DSS encounters in real life. Moreover, fruitful comments on the set of variables used in the DSS have been made by the experts that participated in the process. These comments can work as the basis for a future version of the DSS, by adding and subtracting variables from the current version. In addition they can serve as food for thought to expand the theoretical underpinnings of this research.

As stated by all experts that participated in the process of interviewing there is a pervasive objective problem for any researcher that wishes to tackle our research problem; the multidimensional complexity that characterizes negotiations.

Negotiations are affected by various environmental and personality factors that in conjunction with the mix-motive tinge that has been already mentioned in the literature review, renders the process rather difficult to construe on terms of causality and effect. Therefore, the concerns addressed, either explicitly or implicitly by almost all interviewees, have been expected and can be seen as a rather fair criticism to our research quest. Nevertheless, the complexity, if interpreted as multidimensionality, should be dismantled into smaller sections or categories so as to work on the relevant assumptions governing our attempt to model the process.

Explicit statements such as: *'that this issue is very complex and somebody cannot easily identify if a solution that seems cooperative in our eyes, might be the result of pressure and consensus from the one or the other party' or 'the problem you try to cope with, is a multidimensional and a very complex problem as I have addressed in the beginning of our conversation, and I frankly believe that it is difficult to find the best finite set of variables that would solve the problem.'* and implicit statements like: *'these "variables" you are looking for differentiate themselves among countries, sizes of businesses and other more specific/specialized and subjective factors.'* reveal that even high ranked officials with advance level of expertise and rich practical experience on matters of negotiations do not have a clear and well defined viewpoint on what consists the ideal set of variables that could be used for the construction of a DSS for negotiations on wage bargaining. However, phrases

like *'the variables used in the system cannot be too many in order to be easily used by the experts, allowing him or her to have a clear picture on of the process.'* indicate that in spite the complexity there is a consensus that a small finite set of variables should be used in order to construct a DSS like the one I have attempted to produce.

As a matter of fact, even these experts that acknowledged the complexity of the problem cannot avoid being biased towards issues of the negotiation process relevant to their training. This was a vivid proof of the vast complexity of negotiations; making agents incapable of tackling the problem under a holistic view. In particular, experts with economic background focused more on the nature of the labour market. On the contrary, experts with academic training on law studies addressed more issues relevant with employment regulations and the institutional framework affecting negotiations.

As collective agreements have been a main component of the variable Economic Coordination in our system, many experts focused more on the characteristics of those agreements.

Therefore an important issue raised from most of the interviewees was the level on which these collective agreements had been discussed and finalized. This comment was inspired by the real-life constructed example we offered them during the interview. More precisely, there was a concern if the agreements had been referring at an economy wide level, or at an industry level. The lack of this information can be seen as an important element of the process as it can reveal and signal some kind of connection between the final agreement on the firm level and the agreement reached in the collective bargaining.

A careful examination of our case study shows that there is an explicit reference that there is a division between the sectorial level on which the collective bargaining takes place and the firm level on which a follow up negotiation will take place after an agreement is reached on the sectorial level.

Nevertheless, any concern about the level of on which the collective agreements have been discussed can be considered rather important as it could signal to any user of the DSS the importance of these agreements on the final negotiations that might affect the employees in total or as individuals.

Despite the importance of the aforementioned comment, it is valid to argue that example of the case study contained the necessary information for the participant to understand on which level the collective agreement is taking place. However, it is also true that it this case-study the facts were not repeating themselves. There was an attempt by the researcher not to reveal too much information trying to keep the case study in a user-friendly length. In a real-life application of the developed tool, this kind of problems will not be present. It is obvious that it will be already known to the expert-user of the DSS the level on which collective agreements take place, if any in the economy.

An important comment that derived from the informative questions of our questionnaire was the hidden aspect of a continuous transition that markets such as the labour market usually experience.

A race-to-the-bottom trend that is observable in the social policies in Europe was mentioned by the majority of the interviewees. This aspect reveals an important factor for any DSS that aims to help settlements in negotiations tasks relevant to wage bargaining. Any similar system in the long-run has to take into account the existence of political economic trends that might change the importance of some variables that are used.

For example, most experts underlined the option most modern enterprises have to relocate their plant if it is more profitable to them. This option from the side of the firm had a great impact on the bargaining power of their employees in many countries and their governments that aim to implement independently their social policy. In the majority of the interviews, specific examples are found about firms that had to leave the country due to global political economic changes. Minister 2 mentioned that:

'*international circumstances imposed both plants to be relocated to other eastern European countries*'

An explicit reference to the observed investment flow to the Central and Eastern European countries was made here.

Similarly, concerns have been addressed about the current trends in the labour market and the business environment in Europe. The widespread access in open sources of knowledge renders some advantages of the Western societies obsolete. These trends will exert some pressure on the employment benefits in many of those countries in the western world. This trend is better outlined by the words of one of experts that argued:

'Through the acquisition of knowledge and information from the developing world the weakening of labour markets, in terms of social benefits, in Europe and the US will be inevitable.'

This and other similar remarks underline the new level of fierce competition that is emerging globally. It reveals a new trend that might cause the emergence of a new reality in employment relations throughout the European countries.

Other forces that add up to the resultant trend that was mentioned in the previous section are the high volume of undeclared work force (through the high influx of immigrants) and the subsequent distortions in the labour market and the welfare state that might follow such an event.

The continuous and increasing flow of immigrants from the developing world to the European states will firstly add extra pressure on the social security systems and secondly might cause distortion on labour markets of these countries. The local workers should be ready to accept new terms in their employment contracts that might lead them to lose many of benefits that are currently enjoying. Minister 2 gave a vivid example illustrating that many SMEs, in a country that faces an influx of illegal immigrants, might be tempted to resort in employing undeclared workers causing distortion in the labour market and tax evasion. As consequence, the governments might have to be ready to abandon most of the privileges offered by their welfare states in order to create a competitive environment that will be able cope with the new conditions have been developed.

Both forces, relocation of the firm and high volumes of immigration definitely influence the current status quo and exert pressure that might lead to a new reality in employment relations. Therefore it is important to bear in mind that any DSS should be periodically revised at some

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point in the near future in order to explore if these kinds of trends caused a significant change in the way we conceive the Labour-Management negotiations.

8.3 Predicting the Result in the Case Study

In the first question (see Appendix II), all experts managed to assign estimations that are in accordance with the expected results. With the term expected results, the results generated by our tool when testing the case study taking into account the definition of the variables are inferred.

All of them predicted that the probability of a cooperative-cooperative result will be higher compared with the rest of the cells. Two of them assigned 80 per cent probability that the result will land on that cell. The other Minister predicted that 50 per cent would be the probability that the solution will end up on that cell. All of them split the remaining percentage in equal parts and distributed to the rest of the cells. Therefore, we can argue that most experts understood the case study and from an early stage of the interview got some familiarity with the purpose that the system is serving.

Management / Labour	C	NC
C	80	6.66
NC	6.66	6.6

Table 38: Probabilities Assigned by Minister 1

Management / Labour	C	NC
C	75	0
NC	0	25

Table 39: Probabilities Assigned by Minister 2

Management / Labour	C	NC
C	50	16.6

NC	16.6	16.6

8.4 Challenging the variables of the System

The first question that challenged the variables used to the proposed theory was the following: B2: 'Which other variable could be part of the system in order to achieve better estimations of the above probabilities?' (see Appendix II). This question served a very important twofold purpose in my questionnaire. On the one hand, I was seeking for any straightforward answer which would provide new ideas and material for further research. On the other hand, it was an implicit way, to reflect on the validity of the variables that are already used in the DSS as criticism on them and fruitful attempts to substitute them with new ones could arise.

Nevertheless, there were not that many suggestions on adding different variables on the system. Moreover, there was not any suggestion for a totally new set of variables. Of course it is worth mentioning that this question has already been partially answered by some of interviewees in earlier stages of the interview as they have made valuable comments on information needed in order to prescribe their estimation in the first question of the interview. In order, to cross validate the variables that are already used in the system, the next question in the questionnaire was asking if they would exclude any of the existing variables of the system (question B3, see Appendix II).

However, in this question we could expect some conformity from the expert to the researcher. Due to the face to face nature of the procedure the danger of the development of some kind of sympathy between the interviewer and the interviewee was apparent. This kind of sympathy could call the latter to be less harsh on the variables of the DSS used by the researcher. There was no simple way to bypass this problem of sympathy, if it was present, given the time limitations of the procedure.

Nevertheless, in order to seek objectivity we have focused on asking a lot of questions, about what kind of variable would you add or use if you would make an attempt to create a DSS on

negotiations, and then which variables you would change or cease from the existing variables of the system.

The aim of these two (B2, B3) questions was twofold. Firstly, to elicit valuable insight on potential variables that could be used in the system and secondly to test the validity of the variables already used in the system.

The majority of experts suggested that it would be interesting to incorporate somehow in the system a variable that would capture the size of the firm for which the negotiation task is refereeing to.

According to their opinion it is important to add such a variable because it would serve as another node in the rules, having a decisive role under which legal framework the employers and the employees of the firm are negotiating. In many countries the number of employees of a firm is the criterion in order to classify the firms to the following categories: Small, Medium, or Large. Firms that are classified as Small or Medium Enterprises are usually free from the obligation to align with the collective agreements that might take place in the economy-wide or industry-wide level.

However, the lack of a variable capturing the size of the firm inside which the negotiation task takes place can be overcome through the variable called "Institutions".

Any user could interpret the small size of the firm, this is a fact that the user in real life will know, as firms that act under a decentralized institutional framework that can be interpreted as a system where firms are free from any binding collective agreement that might apply in the rest of the economy. Therefore the broader definition of the variable "EC" serves this interpretation quite well and it is possible to incorporate the case of a firm that is too small and not legally obliged to follow any of collective agreements.

The size of a firm might be connected with problems concerning influences by the shadow economy. For example, Minister 2 gave us an example of distortion of the labour market that is directly connected with small-sized family owned companies that are typical examples of enterprises in Southern Europe. Under the contemporary competitive environment, and the influence of the illegal migration influx in Europe, some owners of the SMEs face

temptations that affect the labour market and subsequently the negotiation task in these countries. Owners of small firms resort in 'undeclared work' especially in countries where the legal frameworks are weak in terms of combating tax evasion. As Minister 2 has argued economies like Greece where tax evasion is pervasive there are plenty firms that encounter this temptation; making the problems of distortion even more acute.

In order to clarify this statement, Minister 2 used an example. During the period that Minister 2 was in charge of the Ministry of employment a businessman approached him and challenged the expert to review his business plan. According to *Minister 'a businessman… claimed that if he had employed only legal-insured employees his business plan would be unsustainable.'* Unfortunately the figures showed that this was the truth. Therefore the issues about the productive capacity and the 'black labour market' that arise in such economies are very important in terms of viability of the model of production. These shadow economic forces, which affect the choices of the entrepreneurs, should be bared in mind when constructing a DSS for negotiations.

However, it would be interesting to add a variable that would classify a firm according to its size and thus, alter the set of the rules that would govern results of the negotiation task accordingly. Especially, this variable could be used in an earlier stage that would serve the purpose to filter which would be the variables used in the system each time depending on the prior choices of the expert. In a new version of the system that would have include two stages with a different set of variables and on the other hand a different logic governing the relations between these variables, the size of the firm would be an indispensable part.

Driven from the size of the firm, one expert suggested that would be helpful to add variable that would signal the working skills that are necessary in order to get a job in the firm under examination. Minister 1 that was more concerned with the nature of the labour market addressed the necessity for having a variable that would classify the employees that are participating in a negotiation task according to their skills. The suggestion of this variable was probably subconsciously connected with three reasons:

- First of all, the expectations that labour markets, according to the skills of labour they represent, are organized in a different way

- Secondly, Labour Unions traditionally show different levels of militancy depending on the kind of workers they represent and

- Thirdly, to signal the pool from which the firm can draw is employees. Nevertheless all of these reasons are correlated with the market structure

This suggestion is made because it was the same expert that focused intensively, from the beginning of the interview, on way the labour market is organized. Therefore, it is valid to argue that this suggested variable has an aim to add some further clarification on the relative bargaining power between the two parties. In a follow up question about why Minister 1 is mentioning the labour skills he or she stated that her primary intention is to assess the bargaining power of the two parties.

In our system there are two variables representing the bargaining power of each group; the relative bargaining power of Management (M) and the relative bargaining power of the Labour (L) force of the firm.

Both variables serve the aforementioned arguments. The experts that would be the user of the system will have the experience, either because of his position as a negotiator or his expertise, to evaluate the relative bargaining power taking into account the structure of the labour market, the militancy of the Union that traditionally is connected with skills of the work force represented by Union and the difficulty to substitute the employees of the firm. Instead of having an additional variable that would clarify what kind of skills are necessary in order to be a candidate for the jobs connected with the negotiation task, our trust relies on the expert-user of the system. The user should deploy his or her knowledge related to the structure of the labour market when assigning values to the variables 'M' and 'L' of the DSS of this study. Both these variables are participating through a set of rules in the formation of the value assigned in the latent variable called Relative Bargaining Power.

An interesting suggestion was the proposal of the variable that would measure the firm's export orientation. Minister 1 made this suggestion and underlined that it would be nice to have such a classification.

The profits of a firm that this system captures in the variable 'Relative Profitability' can be the result of high volumes of exports. This might immune the firm from internal economic conditions rendering the system incapable to conceive the external environment that is influencing the firm. Nevertheless, it is important to address that when such a firm is under consideration other issues arise that should be taken into account. The impact of the exchange rate and the macroeconomic policy of the state should be taken into account when examining firms that their profits depend highly on their exports.

In terms of generality of the DSS it is not necessary to justify the source of income of the firm as the employees that will negotiate and as a consequence use the DSS are going to be in the country where the firm is located and moreover, have all relevant information.

The proposed theory is concerned more on the conditions both labour and management are facing where the plant is located rather than the conditions that are experienced by the firm on the demand side of their products or services.

Another variable that has been suggested by one of the experts was connected with the growth projection of the economy in which the negotiations are taking place. Minster 3 with certitude insisted that a variable that would capture the future growth of the economy should be encompassed in a tool similar to our system. In this suggestion there was a further comment on how the actual synthesis of the rules should change in order to integrate in the system such new kind of variable. The name used by the expert for this variable was "Growth Projection" and he or she prescribed the following changes in the system

Depending on the value assigned to this variable, the probabilities in the matrix should be altered; reinforcing one of the two non-symmetrical (in terms of strategies) cells. The Minister 3 suggested that around 10 units should be deducted by P1 if 'Growth Projection' is prosperous or ominous and added to P3 or P2 respectively. In short, by adding this variable the power balance between the two parties becomes more fragile.

The last question of this section, B4 (see appendix II), was concerned with the scales used in each variable of the system, none objection was made by all experts. All Ministers said that they would not make any amendments to this part of the tool. This fact, added extra validity to the choice of the particular scales used for each variable.

8.5 Questioning the Theoretical Background of this Endeavour

The last set of questions symbolized with C (see Appendix II), aimed to test the validity of the theoretical concepts used in the proposed theory. The first question was concerned with the influence of the institutional framework of each country on to the negotiation task. As far as the influence of the institutional framework governing employment relations, a unanimous agreement on its importance was expressed. Nevertheless, there was a distinction of the kind of influence exerted by the institutional setting in some countries. When answering the question about the institutional framework, Minister 3 argued that:

'Some countries have long tradition and indeed better results can be produced through a procedure that follows specific steps. Of course in other countries...., things are more complicated.'

This statement reveals that countries have to be divided into categories, according to the different forms of institutional framework they represent. Moreover, there was consent by all experts that each institutional setting represents the acceptable rules by the society, and it defines the obligations that each party has to align with. For instance, as Minister 2 stated, the institutional setting might expert pressure to the employers and employees to follow the agreements that had been reached in a wider level in the economy. As a matter of fact, we can argue that it is highly important to take into account the institutional setting when researchers wish to examine wage bargaining and negotiations.

The last question of the interview was aiming to elicit feedback on the theoretical framework we used in order represent in a form of a game the negotiation task. More precisely, this question was concerned with the wide-known concept of the 'Prisoner's Dilemma' that has been used by many researchers in order to explain many social phenomena. Thus the last question was about the ability of the Prisoner's Dilemma to represent a negotiation task (see appendix II).

All experts, even though being penurious in their answers, expressed their confidence about the compatibility of the 'Prisoners Dilemma' with our research quest. As a matter of fact, all

of them argued that the 'Prisoners Dilemma' if accompanied with the right kind of assumptions, enclosing all peculiarities of the negotiation task, it can be seen as a theoretical framework to represent alternative strategies, and outcomes of a negotiation task between employers and employees. They acknowledged the applicability of the concept in the terms of game theory and envisaged our aim to use it in our theoretical model that our system is based on.

8.6 Conclusion

To sum up, our attempt to interview experts with experience on negotiations and wage bargaining assist us to elucidate many facets of the DSS both in terms of theory and applicability. Our target was to deploy this method in order to elicit information that was relevant to our research but not yet encountered by overviewing the literature or by answers derived by the open question of the electronic survey. Therefore, the main goal of this chapter was to provide fruitful suggestions in order to expand our knowledge on the employed theoretical background that has been mobilized. Moreover, an attempt to validate the tool that has been developed was made. These goals were accomplished to the outmost. The valuable feedback generated from this set of interviews can serve as the raw material to develop future versions of the system which can be tested in follow up research projects.

9. Discussion

9.1 Introduction

In this chapter all the important aspects and the main findings of this research endeavour will be highlighted. There will be a general overview of the process followed in order to tackle the two research questions that have been set in the outset of the thesis. Subsequently, the most intriguing results will be addressed and a brief analysis of their meaning relevant to our work will be made. In the end of the chapter all the supporting evidence, which has been generated by the multi-method approach, will be presented and the applicability of the system will be addressed.

In order to confront with research questions of negotiation analysis that contain elements of different fields of sciences, there are a number of issues that should be discussed.

The most prominent is that there is an apparent difficulty of this quest. The negotiation task as a mixed-motive process which is influenced by a variety of factors such as behavioural biases, lack of competency from the side of the negotiators, institutional arrangements, and personal motives is by definition a very difficult theme to examine following strict scientific methods. Therefore it can be argued that there can be many variables that exert an influence over the negotiators strategic behaviour.

Despite this difficulty, negotiations are a very interesting and exciting topic to conduct research on. As a matter of fact, interesting findings have being presented from different fields of study that are related to the topic. Taking this into account, this research made an attempt to combine different elements emanating from most of these fields. This attempt could be proven very fruitful and provide a useful road map in order to assess the strategies adopted by the negotiators and, in turn, the nature of the final agreement. In order to construct the proposed theory (see Chapter 3) a broader rationale of selecting elements from the different fields has been followed.

As stated before, this research followed a deductive approach in order to produce its theoretical contribution. Moreover, the selection of the concepts and findings that have been derived from the literature were influenced by the above-mentioned broader rationale.

Nevertheless, the review of the literature was mainly focused on the theoretical gaps and the impediments that hinder integrative solutions in negotiations.

This rationale focused mainly on synthesizing a PD game that would resemble real-life negotiations leading either to distributive or integrative bargaining. Another distinctive feature behind the process of selecting the particular building blocks and variables of the theory was the prescriptive character and usefulness of these factors. The necessity to incorporate features that would be understood by a wide range of experts and practitioners but that would be also accepted by scholars of the field had a central position in our rationale. The above mentioned rationale of selection, as expected, had some important implications on the essence of the proposed theory. For example, very complex elements that could be characterized as excessive abstraction from reality have been eliminated from being part of the proposed theory. Similarly, this rationale led to the exclusion of solutions that are derived from the 'game theory,' even though interesting notions of this field have been employed in order to describe the conceptual narrative of the theory proposed in this thesis.

The same line of thought has been followed in the process of designing the outcome of the proposed theory. Despite the objective difficulties on assigning quantified outcomes on the generated estimates of the system, specific quantifiable outcomes were provided. This ambitious and risky task was prescribed due to the willingness of the researcher to align with the aforementioned goals of the prevailing rationale.

The purpose of the system is to provide a prediction on what kind of strategies the negotiators will adopt and thus, where the outcome of the negotiation process will settle.

9.2 Surveys

In order to achieve the validation of the first research question (RQ1: Which are the most important variables that influence negotiators in negotiations tasks between Labour and Management?) three surveys have been conducted in three different countries of the European Union (the UK, Greece, and Sweden). Moreover, the purpose of the surveys was to confirm the importance of the conceptual framework that has been adopted in the proposed

theory. In addition, there was a section that aimed to confirm the scale used for the coordination variable of the system.

The most prominent results that were in alignment with the proposed theory derived from section 3. This section included fifteen choices that represented possible variables which could be used for the creation of a similar system. There was another option labelled 'none of the above' if any of the participants wanted to reject all the above-mentioned variables that were in the list. The last option gave the opportunity to the respondent to specify any other variable he or she thought as important.

The results in this section revealed the most important findings of the survey, which served in the maximum the confirmatory purpose of this method. The final results for the variables that have been incorporated in the theory had been more than satisfying. All the variables that have been used in the system have been the top choices of the participants taking the higher positions when ranking them. 'Relative Bargaining power' was the variable that was selected by the most participants in each country, thus in the aggregate results too (91.8%). In the aggregate results it was followed by the 'Unemployment Rate' that was in the second position (71.6%). In the third place (69.4%) it was the only variable of that took a high ranked position but was not included in the constructed theory, the variable called 'Union's Density (if Labour is Unionized).' This choice was made for purposes of greater generalizability of the created system. The aim of the proposed theory was to be as much inclusive as possible. In order to include the scenario of a face-to-face negotiation in a totally decentralized system between an employer and an employee, where Union density has not a real impact, lead to the decision not to include this variable in the system. Then the next three positions were occupied by the other three variables of the system with the following sequence: 'Degree of Centralization' (60.4%), 'Relative Profitability' (56.0%), and 'Inflation Rate' (41.8%).

These results are presented again in this section as they served an important purpose. They have been the main evidence to validate the elements used in the proposed theory. Academics, from three different countries, indicated that all variables used in the proposed theory are according to their view in the top positions of importance.

What might be interesting to address in this section is the high number of preferences that the variable 'Personal Ties Between Negotiators' got in all three countries. This variable is of great importance but it can be classified on the subjective competence of each negotiator affecting his or her concessionary behaviour. However, this is something that should not be incorporated into the system for two reasons. Firstly because the aim of the system is to depict the reality without arbitrary incorporating any personal characteristics of the negotiators as they could not be assessed accurately by the researcher. Secondly, even if it was part of the system it would add high levels of uncertainty into which direction the final outcome would land, as for example 'friendly ties' generate great controversy about the direction they pull the final outcomes.

Something interesting about the surveys that should be addressed is the differences in the results due to the different perception and social identity that is pervasive among academics that are based on the same country. For example, in question 7.f. (Is "The Existence of a Special Economic Event (Economic Crisis, EU- Membership, Euro-Membership)" a significant influential factor in negotiations between Labour and Management?) the results for UK compared with that form Greece showed that 'special economic events' have been confronted as something of medium levels of significance in the UK but as something of great significance in Greece. This difference might be the product of the divergent economic conditions that prevail in each country and not from conflicting steams in the literature. In the UK the markets might work more effective absorbing any exogenous shocks as the 'special events,' on the contrary in Greece the exogenous shocks, due to the rigidities of the market, might have great influence on economic behaviour. Two relevant examples are the recent economic crisis and the accession in the Eurozone.

Section 2 of the survey served a similarly important task. It was constructed in order to verify the level of identification between the scale used in the variable EC and the perception of the academics among these three countries. The results showed that the scale used in this variable is in alignment with the common perception that academics have about which countries should be in the lower and which in the upper limit of such a scale.

Moreover, the general conceptual frameworks that have been employed in order to construct specific parts of the proposed theory have been verified through the first section of the survey. The majority of the participants agreed that the building blocks of theory have an

important role on the negotiation process. All three concepts that were tested, the 'deficiencies of the labour economic models', the 'influence of the Institutional Framework', and the 'resemble of the negotiations with the PD game' attracted positive consent about their importance, from the participants.

9.3 Numerical Experimentation

The use of numerical experimentation served another important aspect of this research. All possible results that could be generated according to the set of rules had to be calculated. This was necessary in order to draw important conclusions about the prevailing tendencies that steam from the proposed theory. This was extremely crucial in order to verify the validity of the second research question that was concerned with fostering trust between the negotiators.

Labor \ Management	C	NC
C	P1	P2
NC	P3	P4

<div align="center">Table 41: Outcome Matrix of the Proposed Theory</div>

Even though the NC-NC (P4) solution (Figure 10) was the one that concentrated the larger number of scenarios where it could be considered as the winner-outcome (greater probability), the cooperative solution C-C (P1) seemed to gather a considerable amount of the generated results where it had the greater probability estimation.

This event may be considered as a force that can lead negotiators to anchor their perceptions on the categorical solutions C-C (P1). It is pervasive that the system promotes integrative solutions especially when the conditions really favour them. Therefore, with the application of the system, two negotiators even if they have slightly diverged perception of the reality, can be led to a cooperative result. Users that are exposed to the objectively assessed estimations provided by the system are becoming familiar with information that can create the necessary common ground in order to foster trust between them. Trust is an important factor that can facilitate the achievement of integrative agreements. Stated differently, creating new informative conditions, that are based on theoretical grounds which promote integrative agreements, is another mean of fostering trust between the two parties. Anchoring both parties to the cooperative result can be seen as a method of fostering trust between them, especially if there have been doubts about which strategy should be followed before using the system.

Moreover, it becomes apparent from the numerical experimentation that the results that lead to a wining outcome with the greatest difference (+50) compared with the rest of the cells, are most of the times these that promote the C-C solution (P1).This reveals that when there is a tendency for P1 to prevail, it does it with a dominant way. This event can be interpreted according to the theory connected with methods solving 'social dilemmas'. For example, there are situations in real life where the solution of a 'social dilemma' can be something obvious or urgent; calling all participants to adopt immediately the strategies that will solve the 'social dilemma.' As a consequence, selecting non-cooperative strategies, which promote inferior outcomes, seems relatively odd or even outrageous in some straightforward cooperative cases.

In addition, there was a tendency from the numerical analysis to promote more cooperative solutions in cases where the variable 'Economy Coordination' had value 3 compared with cases where 'Economy Coordination' had value 1. This was in alignment with the theory that addresses the fact that institutional arrangements are more effective on restraining inflationary pressures, impelling parties which participate in a negotiation process to cooperate.

9.4 Interviews

The set of interviews that was conducted with three high ranked experts was an interesting part of this research as it elicited valuable insights on important facets of the study.

Two of the main purposes for conducting interviews was to validate the variables that have been used in the system and to seek for confirmatory evidence for the theoretical frameworks that have been used in the in the proposed theory. Moreover, explicit questions about what other variables could be used in the creation of a similar system have been incorporated in the questionnaire that was used in the interviews. This fact, lead to the accumulation of plenty ideas that can be used in future research. A number of the interviewees have addressed that such a system could be part of the negotiation process in order to help negotiators to find a common ground in order to start bargaining on specific issues. This was one of the main objectives of this thesis therefore this kind of feedback was quite important to our research quest.

The insights elicited by the set of interviews have been the following:

1) General trends prevail in the labour markets around the globe

2) Confirmatory evidence for the variable used in the system

3) Suggestions for other variables to incorporate

4) Confirmatory evidence for the use of the Prisoner's Dilemma in the proposed theory

Each of them will be discussed separately in the next paragraphs.

Some very interesting findings that steam from the interviews and were addressed by almost all participants are related with the general trends that are pervasive in the contemporary labour markets in Europe and thus, influence directly or indirectly negotiations.

These overarching economic forces that influence the labour markets exert a constant effect on them shaping the perspectives towards the accepted solutions that should prevail. This influence is a very significant fact which reveals that any Decision Support System that wants to be accurate with its predictions on negotiation outcomes has to get revised and updated in the quite frequently. In that way it will incorporate all the necessary changes that might have happened in the wider economic environment. The high influx of immigrants into the European countries and the free access to knowledge are two examples of such general trends that have a significant impact on the labour markets in Europe. Nevertheless, the systems that want to give accurate prediction about the present have to adopt a more static approach.

Another interesting suggestion that derived from the interviews, was the suggestion of quantified rule in order to define integrative agreement on wage bargaining. This proposition had as an aim to define the fair outcome that could be used in order to assert that the two parties adopted a cooperative solution. This rule should have as a benchmark the sum of productivity and inflation; a sum which can be seen as a measure to assess cooperation in real life examples of negotiation.

The set of interviews, as we have already mentioned, served an important confirmatory role of the variables that have been used in the system. All experts who participated in the interviews explicitly stated that they would not change any of the existing variables of the system adding extra validity to the variables that have been part of the system.

Questions about other kinds of variable that could be incorporated in the system revealed very interesting suggestions. A variety of additional variables, that could become part of the system, were suggested by the interviewees. Their main suggestions are discussed in the following paragraph.

A very interesting suggestion was a variable that would incorporate the 'growth projection' of the economy, altering the rules and the assigned outcomes according to its value. Another suggestion included a variable that would classify the firm under consideration according to

its size. Nevertheless, as it has already been discussed in chapter 8, there are some considerations if these suggestions should be part of such a system. The inclusion of some of them should lead to a totally different proposed theory, ceasing some of the existing assumptions and rules of the system generating different results. As a result, most, of the suggested variables elicited by the set of interviews can be seen as important ideas that could be used for future research.

All experts agreed that game theoretic notions can be used in order to describe an accurately a negotiation between Labour and Management. Of course, they underlined that some assumption have to be taken into account in order to use the PD gave in an effective way. Moreover there was a pervasive bias towards the positive contribution that 'Institutions' exert over the final outcomes of wage negotiations. Therefore, it is valid to argue that the theoretical concepts that have been used as building blocks to our proposed theory have been verified even through this method, assigning them extra levels of validity.

9.5 Summary

From the above discussion, it becomes obvious that the two research questions that have been set in the outset of this endeavour have been supported with confirmatory evidence through the various methods employed.

All the variables that have been used in the proposed theory and, in turn, in the constructed system, have been supported through confirmatory results generated by all methods. Interesting suggestions that could be used in future research projects have been made, but the main variables that were used in the theory gathered the necessary support in order to confirm their power as the most important variables that might influence a negotiation task. Nevertheless, future research might be necessary in order to check the influence of some of the variables that have been suggested by the experts.

For validating the stimulus of trust among the negotiators through the use of the system; the method of 'numerical experimentation' was employed. The results from the numerical analysis revealed two important findings. First of all, the average of the total results revealed

a pretty high probability for the cell C-C (P1) signalling that the proposed theory assigns high possibility for solving cooperatively the negotiations dilemma. In addition, the proposed theory when the values assigned to the variables generate a result on the C-C, often assigns higher estimations to this cell in order to create the necessary common ground to initiate process for achieving an integrative agreement. Moreover, there were some confirmatory statements that have been elicited by the interviewees which supported the possible development of trust among negotiators through the use of the system.

10. Conclusions, Limitations and Further Research

10.1 Introduction

The research that was conducted in this thesis can be considered as part of the negotiation analysis scientific field, offering a new theory on how to reach a solution in the 'Negotiation Dilemma' that might arise between Labour and Management. The results that have been generated from this endeavour have important implications on two realms of negotiation. Firstly, the results identified a set of variables that exert high influence on Employees-Employers negotiations. Secondly, it was revealed that these variables in conjunction with the theoretical frameworks that have been selected from the literature can be the building blocks of theory that will aim to predict the optimal behaviour of the negotiators. Moreover, the creation of a 'Decision Support System' that can be used as tool in order to apply the proposed theory was developed through this research study. Thus, applying the proposed theory through the use of the system negotiators can unfold a path of trust that will be based on a notion of 'positive anchoring' when the conditions favour such an anchoring according to theory. In this chapter, firstly conclusions of the thesis will be presented. Secondly, the limitations under which the findings of this research should be interpreted and generalised will be discussed. Finally, suggestions for further research will be addressed.

10.2 Summary of the Main Conclusions

The following points include the main conclusions and results that have been produced throughout this research endeavour. The conclusions are presented according to the chapter that they can be found in:

- The literature review (see chapter 2) revealed that integrative bargaining in order to arise often calls for the solution of a 'Social Dilemma'. In other words, there is a necessity in order to achieve optimal joint outcomes to work on methods that would facilitate integrative bargaining. In order to find a solution to the 'Social Dilemma' the creation of common ground which can foster the necessary trust among negotiators has to be achieved. The differences observed among economic systems

on achieving joint optimal results thus, solving the 'Social Dilemma' induced the reviewing of the literature review on 'Institutionalism'.

- As a consequence the study had as an aim to check the validity of the following two research questions:

  - RQ1: Which are the most important variables that influence negotiators in negotiations tasks between Labour and Management?

  - RQ2: Does the proposed theory via the use of a 'Decision Support System' foster trust between negotiators in Labour-Management disputes, facilitating integrative agreements?

- In chapter 4 the methodology adopted by the researcher is presented. The deductive approach was employed in order to construct the proposed theory, as it had to incorporate theoretical knowledge steaming from various fields as economics, game theory and institutionalism. The aforementioned complexity of this problem lead to the adoption of 'Pragmatism' as a paradigm.

- In chapter 5 the proposed theory is demonstrated. The selection of the variables and the main rules that govern the relationships among these variables are presented. The main contribution of the thesis is presented in this chapter. The proposed theory is the basis for the creation of the Decision Support System that is presented in the next chapter.

- In chapter 6 the creation of the Decision Support System is presented. The system that incorporates the variables and rules of the proposed theory is a useful tool that can generate any combination prescribed in the aforementioned theory. Moreover, the tool had broader generic architecture which allows to apply on it any other proposed theory that incorporates different variables and different rules. This is something very important in case of applying different set of variables in future work.

- In chapter 7, which incorporated the Surveys that have been distributed in three European countries (The UK, Greece, and Sweden), the main validation of RQ1 took place. The results verified that the set of variables used in the system is a combination of the variables that are thought to be the most influential by a pool of experts.

- Chapter 8 included the results from the 'simulations' of the system. All possible results that can be generated by the system were calculated. Important insight for the validating RQ2 was offered through this method. The results revealed that the cooperative result P1 has great anchoring power that can influence negotiators in order to adopt cooperative strategies and overcome the social dilemma achieving integrative outcomes.

- The information that was elicited by the interviews in chapter 9 offered valuable insight in order to understand better the phenomena under examination. The interviews served a confirmatory purpose too. The answers given from the experts verified the importance of the variables used in the system. Moreover, hints of confirmation about the abilities of the system to foster trust have been given. The most important facts of this chapter, however, was the great insight provided by experts about the general ideas that influence negotiations and wage bargaining.

From this set of conclusions the most important contribution of this thesis to knowledge can be seen the proposed theory that combined with Decision Support System can unfold a path of trust which might facilitate the achievement of integrative agreements. Therefore the main contribution can be seen the results from the system that can be used in order to ease the process of solving social dilemmas in a negotiation task.

10.3 The limitations

The main limitations of the proposed theory can be summarized in the following points:

- The negotiation task is perceived in this research as a one-off game; nevertheless real life negotiations may include many rounds and therefore the process be seen to be closer to an iterate game.

- Usually in negotiations there are information asymmetries among the negotiators; something that is not the case in our model at least about a firm's financial stability

- The negotiation process can take the form of another kind of game which is still a representation of a 'social dilemma'; this study includes only cases of negotiation tasks that are similar to the PD game

- The surveys and the interviews that were conducted in this research, involved the participation of experts on making decisions and giving answers upon specific questions; this task is vulnerable in time and availability constraints such as:

    o The time available to finish the whole process and provide their responses,
    o The right preparation and phrasing of the questions and,
    o The selection of the right pool of experts

10.4 Further Research

Based on the findings and the conclusions of this thesis there are some suggestions for future research:

- The creation of a system that will have different stages of input variables creating a different process for applying the rules that would govern such a system, instead of using a version with 6 user-input variables in only one stage

- To conduct experiments with postgraduate students, who will negotiate with and without the use of the system in order to track the applicability of the tool in real-life negotiations

- To incorporate variables that include projection of the future rather than only variables that depict the current economic situation that prevails in the economy

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- The same approach could be followed but by employing a different version of a game that depicts a 'Social Dilemma' rather than the PD game

- To install the system in an employee's organization or a multinational cooperation and get feedback after a year

- Conduct the same Survey in countries that belong in different geographical location (continent) than the countries that have been used in the thesis, in order to explore any differences that might exist on the attitude towards the variables used in the system due to locality and cultural aspects.

11.1 A Set of Statements about Common Beliefs on "Labour-Management Relations" (Participants were asked if they Agree or Disagree with each Statement)

1. "The models of bargaining theory in economics provide a realistic representation of real world outcomes"

	Labour - Management Negotiations: Influential Factors - UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		`All (including current survey)	
Disagree Strongly	16.5%	16	8.3%	1	4.0%	1	13.4%	18
Disagree	21.6%	21	16.7%	2	8.0%	2	18.7%	25
Neutral	37.1%	36	25.0%	3	28.0%	7	34.3%	46
Agree	22.7%	22	50.0%	6	60.0%	15	32.1%	43
Agree Strongly	2.1%	2	0.0%	0	0.0%	0	1.5%	2

2. "The negotiations between employers and employees can, under specific assumptions, be perceived as a game-theoretic problem that takes the form of a Prisoner's Dilemma"

	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
Disagree	7.2%	7	0.0%	0	0.0%	0	5.2%	7

Strongly Disagree	23.7%	23	50.0%	6	24.0%	6	26.1%	35
Neutral	22.7%	22	0.0%	0	32.0%	8	22.4%	30
Agree	42.3%	41	50.0%	6	32.0%	8	41.0%	55
Agree Strongly	4.1%	4	0.0%	0	12.0%	3	5.2%	7

3. "The institutional setting influences the final outcome of a negotiation process between Labour and Management"

	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
Disagree Strongly	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Disagree	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Neutral	4.1%	4	0.0%	0	0.0%	0	3.0%	4
Agree	46.4%	45	83.3%	10	40.0%	10	48.5%	65
Agree Strongly	49.5%	48	16.7%	2	60.0%	15	48.5%	65

11.2 Multiple Choice Questions about your beliefs on the "Labour Market" of Different EU-Countries

4. "In your opinion, which of the following countries has the most flexible labour market?"

	Labour - Management Negotiations: Influential Factors – UK	Labour - Management Negotiations: Influential Factors - Sweden	Labour - Management Negotiations: Influential Factors - Greece	All (including current survey)

UK	72.2%	70	66.7%	8	56.0%	14	68.7%	92
Germany	4.1%	4	8.3%	1	8.0%	2	5.2%	7
Greece	4.1%	4	8.3%	1	4.0%	1	4.5%	6
The Netherlands	10.3%	10	8.3%	1	24.0%	6	12.7%	17
Sweden	9.3%	9	8.3%	1	8.0%	2	9.0%	12

5. "In your opinion, which of the following countries has the most formal institutional provisions on its Labour-Management negotiations? "

	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
UK	2.1%	2	0.0%	0	12.0%	3	3.7%	5
Germany	58.8%	57	25.0%	3	12.0%	3	47.0%	63
Greece	6.2%	6	8.3%	1	20.0%	5	9.0%	12
The Netherlands	1.0%	1	8.3%	1	8.0%	2	3.0%	4
Sweden	32.0%	31	58.3%	7	48.0%	12	37.3%	50

11.3 A List of Factors that Influence the Mind-Set of a Negotiator in a Labour-Management Concept

7. "Please indicate which of the following factors you would consider as highly influential in the conduct of Labour-Management negotiations:

	Labour - Management Negotiations: Influential	Labour - Management Negotiations: Influential	Labour - Management Negotiations: Influential	All (including current survey)

	Factors – UK	Factors - Sweden	Factors - Greece	
1. Relative Bargaining Power of Each Party	89	12	22	123
2. Inflation Rate	42	4	10	56
3. Personal Ties Between Negotiators	36	8	9	53
4. Reputation of Each Party	29	5	10	44
5. Union's Density (if Labour is Unionized)	69	10	14	93
6. Stock Market Indices (e.g. FTSE 100)	6	1	3	10
7. Risk Aversion in the Reduction of their Income/Profits	16	4	6	26
8. Time Near Contract Expiration	22	6	7	35
9. Degree of Centralization on the Bargaining Process	57	9	15	81
10. Relative Profitability of the Firm or the Industry	55	5	15	75
11. Trends of Exchange Rates	6	1	1	8
12. The Option of Escape for the Firm	19	4	6	29
13. Intergroup Attitudes	18	3	5	26
14. Unemployment Rate	66	9	21	96
15. Media Attention on the Negotiation (Bargaining Process)	30	4	8	42
16. None of the Above	0	0	0	0
17. *Other*	17	0	2	19

Other
All of these are possible factors. I have indicated which ones I consider influential in typical circumstances. The question re contract expiration is only relevant in certain countries.
coverage by collective bargaining is far more important than union density... eg. more than 90% of the French employed workforce are covered by the agreements of collective bargaining despite low union density. Productivity is important too and might not be summed up in relative profitability. Various concepts I would recognise are not listed, though may be picked up in eg. intergroup attitudes or media attention (eg. relativities within/across industry)
Depends on sector and industry/occupation
I am assuming we are talking about collective negotiations here.
Inflationary expectations
institutional context
Institutional norms and legal frameworks (national, sub-national), and the norms and values of management and the union
Many of the above and more. I would venture that reasons can be highly distinctive in each case, depending on the context.
many of these options affect the relative bargaining power of each party
mobilisation capacity
Negotiation skills of the union representatives
Organisational culture
quality of the negociators
Risk of redundancies, which is related to the uncertainty of profitability of the industry due to change in legislation, change in government funding, etc.. (I am talking here about the education sector)
The extent to which settlements for the bargaining group have compared favourably to other comparable groups/occupations. Equally, the current 'going-rate' in the sector and the broader economy.
Threat if proximate deadlines
Union(s)' ability to mobilise membership around bargaining agenda for industrial action as well as legal framework for industrial action

11.4 Please Rate some Factors in Accordance with their Significance

7. How significant are the following factors in affecting a negotiator's aspirations and demands during negotiations between Labour and Management?

7.a. "Relative Profitability of the Firm/Sector"

Not Significant → Very Significant	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
1	1.0%	1	0.0%	0	0.0%	0	0.7%	1
2	0.0%	0	16.7%	2	4.0%	1	2.2%	3
3	7.2%	7	0.0%	0	0.0%	0	5.2%	7
4	13.4%	13	25.0%	3	12.0%	3	14.2%	19
5	27.8%	27	25.0%	3	20.0%	5	26.1%	35
6	33.0%	32	16.7%	2	52.0%	13	35.1%	47
7	17.5%	17	16.7%	2	12.0%	3	16.4%	22

7.b. "Past Outcomes in Negotiations"

Not Significant → Very Significant	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
1	0.0%	0	0.0%	0	0.0%	0	0.0%	0
2	4.1%	4	16.7%	2	4.0%	1	5.2%	7
3	6.2%	6	16.7%	2	12.0%	3	8.2%	11
4	22.7%	22	8.3%	1	20.0%	5	20.9%	28
5	30.9%	30	8.3%	1	20.0%	5	26.9%	36
6	24.7%	24	41.7%	5	20.0%	5	25.4%	34

7	11.3%	11	8.3%	1	24.0%	6	13.4%	18

7.c. "Economic Indices of the Economy (Inflation, Unemployment, etc.) "

Not Significant → Very Significant	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
1	0.0%	0	0.0%	0	0.0%	0	0.0%	0
2	2.1%	2	0.0%	0	0.0%	0	1.5%	2
3	9.3%	9	0.0%	0	8.0%	2	8.2%	11
4	20.6%	20	25.0%	3	20.0%	5	20.9%	28
5	26.8%	26	8.3%	1	16.0%	4	23.1%	31
6	32.0%	31	41.7%	5	36.0%	9	33.6%	45
7	9.3%	9	25.0%	3	20.0%	5	12.7%	17

7.d. "Relative Bargaining Power of Each Party"

Not Significant → Very Significant	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
1	0.0%	0	0.0%	0	0.0%	0	0.0%	0
2	1.0%	1	0.0%	0	4.0%	1	1.5%	2
3	1.0%	1	0.0%	0	4.0%	1	1.5%	2
4	5.2%	5	0.0%	0	8.0%	2	5.2%	7
5	17.5%	17	50.0%	6	12.0%	3	19.4%	26
6	39.2%	38	25.0%	3	36.0%	9	37.3%	50
7	36.1%	35	25.0%	3	36.0%	9	35.1%	47

7.e. "Media- spotlight" the Attention that the Negotiation Process Has from the Media"

Not Significant → Very Significant	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
1	3.1%	3	8.3%	1	4.0%	1	3.7%	5
2	15.5%	15	0.0%	0	20.0%	5	14.9%	20
3	21.6%	21	41.7%	5	24.0%	6	23.9%	32
4	25.8%	25	8.3%	1	24.0%	6	23.9%	32
5	21.6%	21	33.3%	4	8.0%	2	20.1%	27
6	11.3%	11	8.3%	1	12.0%	3	11.2%	15
7	1.0%	1	0.0%	0	8.0%	2	2.2%	3

7.f. "The Existence of a Special Economic Event (Economic Crisis, EU- Membership, Euro-Membership) "

Not Significant- Very Significant	Labour - Management Negotiations: Influential Factors – UK		Labour - Management Negotiations: Influential Factors - Sweden		Labour - Management Negotiations: Influential Factors - Greece		All (including current survey)	
1	3.1%	3	0.0%	0	0.0%	0	2.2%	3
2	11.3%	11	0.0%	0	4.0%	1	9.0%	12
3	12.4%	12	0.0%	0	4.0%	1	9.7%	13
4	36.1%	35	25.0%	3	8.0%	2	29.9%	40
5	9.3%	9	41.7%	5	20.0%	5	14.2%	19
6	22.7%	22	25.0%	3	28.0%	7	23.9%	32
7	5.2%	5	8.3%	1	36.0%	9	11.2%	15

8. Please feel free to add any other comments you believe are useful and relevant to the general ideas/concepts of our survey:
as stated many of the factors affect the bargaining power of each side but it is that and how it is perceived that is key
At the end of the day labour markets are buyers market. If it wasn't for employment law firms would be even more cut-throat and unethical in their employment practices. I recently engaged in a discussion with my line manager requesting a salary increase and was told "we've never had trouble filling roles here before". The ease of replacability of staff is being used in HE as a stick to prevent higher pay claims. Keeping your job is the new raise!
Good luck with the research and it would be interesting to see the results of your survey in due course.
I answer many of these questions from the labour negotiator's persepctive. Doing so for the employer is more difficult since their position will depend on a good number of market/sector/workplace contingencies.
I assume that we are talking aobut negiation over pay and conditions. If it waa aobut other issues, for isntance against job losses or formulaitng a leasrnign agreemetn then the answers to your questions may vary somewhat. Although implicit in your survey I think that we cannot underestimate the need for the union and management negotiators to have a good grasp of negoation skills and theory. In retrospect yes it is of vlaue if their is soime empathy between the two parties.
I don't believe that these questions can be properly answered in the abstract. For me there were so many if's, but's and maybe's.
I find the questions hard to respond to without definitions and without discrimination between different sorts of cases. The context is critical.
I found the questions very unclear and without reading the articles (which I don't have time to do) any comments are more speculative than reasoned
Its context is not very clear
my comments are informed by my role as an arbitrator for ACAS, so mostly based on "insider knowledge/experience" of the UK and research interest (outside observer) of other countries
Naturally, I would encourage the use of historical perspective (qualitative, as well as quants, based approaches) to aid the development of insights.

Of particular importance is the expectation of TU members. Usually it is necessary to do some intraorganisational bargaining and attitude setting
Strength/charcteristics of leadership of the different parties (labour and capital) can be crucial.
The tactics of the negotiators is crucial to the outcome (depending on relative power differentials) integrative or distributive bargaining methods. The problem for the negotiators is spotting the tactics and adopting countermeasures before its too late. Nothing is agreed until everything is agreed. Interim agreements can always be thrown out.
There are serious problems with asking and answering questions like this because there are so many interpretations involved. I would never use such a `blunt´ instrument, and have only filled this in to assist you in your research. I consider this kind of `positivist´ approach totally wrong - and have written extentively on it. That said Good luck with the thesis Steve
There is not much in here on solidarity and trust, which are, of course, important factors that influence the success or failure of collective bargaining.
There needs to be more attention paid to the institutional frameworks into which negotiations are made (see varieties of capitalism/ institutional theory), and also more attention to the specific goals/norms/behaviours of management and labour.
These are interesting questions, but some of them need further specification. E.g. The question "The negotiations between employers and employees can, under specific assumptions, be perceived as a game-theoretic problem that takes the form of a Prisoner's Dilemma" requires the respondent to interpret the "specific assumptions".
This is a difficult topic to ask this sort of questionnaire about - the Hicks model of "faulty negotiations" is the best for explaining strikes - but not necessarily for actual wage outcomes which depend on the strike threat rather than its actually happening

12. Appendix II

12.1 Questionnaire Used in the Set of Interviews

A1: Example

The example that we use refers to collective bargaining between Employers Federation and employees Union of a firm Z in a European country X.

Country X, in which these negotiations take place, is in an economic boom and the forecasts of the economics for next year a quite are quite promising, mentioning positive growth rates of the economy. This country is among the three largest countries in Europe in terms of population. Its fiscal policy is characterized by long prudential tradition.

The institutional framework of country X is characterized by long tradition of institutional rules that govern the collecting bargaining processes of the employment contracts. Inflation rate fluctuated the last months between 2.2% - 2.5% and the unemployment level during the negotiations was 6.8% without any significant fluctuation.

The sector in which the firm belongs, is of strategic importance for the country enumerating 850 000 employees with significant exporting dynamics. In the broader industry, if we take into account all the trade unions which have common representation in collective bargaining, they enumerate over 2 million registered members.

The firm Z, is one of the three most profitable firms of the sector, is regarded as one of the major 'players' in the international level. The Labour Union of the employees is regarded as one of the most militant of the country.

The workers asked for an increase of their wages for 6.5% for the next year. However, the federation of the employers declined and counter-offered a raise equal to 3%, an offer that was slightly above the inflation. Taking into account the abovementioned facts I would like

to ask you to fill in the blank cells below in the table, writing down the probabilities you believe that the result would be a product of cooperative strategies or not.

Taking into account the example above I would like from you to fill in the blank cells of table 1 (in the end of the page) with an estimation of probability that the final agreement of the negotiations will be:

P1: The result of cooperative strategies from both sides (Employees – Employers)

P2: The result of a cooperative strategy from the side of the employees and non-cooperative strategy from the side of the employers

P3: The result of non-cooperative strategy from the side of the employees and of a cooperative strategy form the side of the employers

P4: The result of non-cooperative strategies from both sides (Employees-Employers)

Table 1.

Employers / Employees	Cooperative Strategy	Non-Cooperative Strategy
Cooperative Strategy	P1:	P2:
Non-Cooperative Strategy	P3:	P4:

B1: Examining again the case study I would like to ask you to assign values in the variables of the system.

B2: Which other variable could be part of the system in order to achieve better estimations of the above possibilities?

B3: Would you exclude any of the existing variables of the system?

B4: Would you like a different scale in the variables of the system?

General Questions:

C1: Do you believe that the institutional framework relevant to employment relations has a significant influence in the negotiation task between Employees and Employers?

C2: Are you familiar with the concept of the Prisoner's Dilemma?
Is this concept a plausible representation (reproduction), of a large number of negotiations between employers and employees?

12.2 Interview Minister 1

V.B: My quest is to isolate a group of variables that negotiators, between labour and Management, take into account during a bargaining process. Subsequently I want to create a Decision Support System (DSS) with this group of variables that will serve the objective evaluation of reality that both parties face.

Minister1:

It sounds very interesting and at the moment I am conducting a research on wage determination for the European area. At the moment I am back in the University as an academic. I do not know if you already knew that.

V.B: I see that we conduct research in the same field. Do you try to identify if the institutional framework affects the final agreements on wages?

Minister1:

I working on an econometric model and somehow I would like to incorporate the Institutional framework as a variable.

V. B:

Now I would like to give you my example (case study) in order to identify the probabilities for cooperation or no. In particular the final results try to specify the probabilities that the following scenarios might become the reality: C-C, NC-C, C-NC, NC-NC (including the possibility of a strike) revealing if the management is going to be imposed over the Labour or vice versa. These probabilities are going to be depicted on matrix that follows the Prisoners dilemma concept.

Minister1:

From your description I understand your endeavour. Of course, you should understand, that this issue is very complex and somebody cannot easily identify if a solution that seems cooperative in our eyes, might be the result of pressure and consensus from the one or the other party. Nevertheless, such a system could help to create some levels of trust between negotiators.

A1:

V.B.:

You are absolutely right with your comment on the model, but our aim is to simplify the scenario on which it is referring to in order achieve practical application of the system as a tool even if it is a bit abstract on what it is analysing (it is based on abstract theoretical models).

Now, could you please read the case study that I use as an example in order to give me your estimation of the probabilities in the cells of the matrix that is after the end of the example?

Minister1:

I understand your example but I would like first to stand a bit on the approach of the general problem. In each cell, I would define the situation quite differently. I would try to place in each cell the firms according to the sector in which they belong. Then, I would organize the matrix with scenarios according the nature of the labour market. For example, Commerce, Banks, Tourism, and Education. On the other hand it could be something like a tree diagram that in each node we can select the route according the data that are available and the game will develop to a specific way.

It might be better to approach it with a matrix that would try to describe the nature of the labour market and inside the cells to place, as I have already mentioned, the sector signalling the power that each side (Management and Labour) might have.

L⟍ M	Oligopoly	Competitive
Oligopoly	High –High **Banks**	High – Low **Education**
Competitive market	Low – High **Tourism**	Low – Low **Commerce**

V.B.: further in the interview you will see that I make an attempt to incorporate in a different way in my system the bargaining power of the two sides (Labour and Management).

Minister1:

Another variable that you have to take into account is the size of the firm. Depending from the number of employees we can classify a firm into small, medium or large enterprise. It is essential, because according to the size there is a different legal framework that might force or not the firms to follow the **sectoral** (or in your example collective) agreement.

The businesses in Greece are usually quite small, employing two or three people at most. This fact has as a result the lack of harmonization with the pressure on wages. Because They try to keep the wages in a decent level, they do not decrease their prices. This brings the rigidity in the consumer prices both in goods and services.

Moreover it could be useful expect the size of the company to mention what kind of labour the example is referring to. It is important to refer on what kind of labour skills are necessary in order to be employed in these positions, because then we can have a picture of the labour market.

In your example, I face the following problem. How can somebody distinguish one agreement as Cooperation-Cooperation and not as an agreement that was concluded after pressure that was exerted on the one side from the other. We could call that agreement rather consensual than cooperative. This might be connected with the demands of both parties. I read in your example that you mention the proposed demands of both sides for annual wage increase. These might be considered extraordinary under a particular perspective (e.g. inflation rate) and therefore something that ostensibly seems cooperative might not necessarily be the case. I would propose to define a **criterion**/ measurement, that would use the proposed demands of both sides in order to define if the final agreement was cooperative or not.

Another important aspect that should be clarified in your system is the scale-level on which you are referring to when you mention collective agreements. Is it in the industrial level or the firm level? And if these agreements are legally binding or not.

Now in your example if I would like to take into account all the data given in the text I would definitely assign a greater probability to P1. Probably I would give something like 80% and I would equally split the rest 20% in the other three cells.

B2:

V. B.: Which other variable would you add in the Decision Support System for better prediction of the above probabilities?

Minister1:

Another variable that you could incorporate in your model, except the size and the kind of skills needed in order to be employed, the threat that a firm can extern in their employees, from having the option to relocate in a different country, because the contemporary business environment. The eventuality that the plant might leave the country is a strong card in the hands of the employers.

Another interesting addition would be to have variable that would show the level of extroversion of the firm that we refer to. A firm might be very profitable, because it exports vast amount goods abroad. This firm might not be so much influenced by the internal environment of the country. Of course then we should include the effects of the exchange rates in the competitiveness of the firm etc.

B3:

V.B.: Would you exclude any of the variables of the Decision Support System?

Minister1:

I would not exclude any of the variables of the system. Maybe I would substitute unemployment rate with something that would incorporate the expected risk in the future that the employee might become unemployed in the future. I would prefer something that would contain the danger-risk over the time, taking into account the business cycles. I would like to have it similar as way the options work incorporating uncertainty and taking into account expected risk and return.

B4:

V.B.: Would you recommend a different scale for the variables that we use in the Decision Support System?

Minister1:

No, I do not think so.

C1:

V.B. : Do you agree that the Institutional framework covering the employment relations has an important influence in the negotiations between Employers and Employees?

Minister1:

Indeed, the institutional framework has an important influence both in the results and in the bargaining process that is followed in each country. As I mentioned earlier the Institutional framework can exert pressure to the SMEs in order to reach an agreement similar to that of the sectoral collective agreements. At the same time there is also a deeper understanding in the issues concerning employment, from both parties (Labour-Management), facilitating the negotiation process in order to reach an agreement

C2:

V.B.: -Are you familiar with the concept of the game called Prisoner's Dilemma?
-Do you agree it can be used as plausible representation (reproduction), of a large number of negotiations between employers and employees?

Yes, somebody could, always taking into account the necessary limitations, argue that the overall negotiation process could be represented according to the game known as "the prisoner's dilemma."

12.3 Interview Minister 2

V.B.: My interest lies in the identification of the variables which affect the negotiations between employers and employees. For example, if there is an institutional framework of collective agreements that influence the process, the importance if one side (Labour-Management) has greater bargaining power than the other and etc.

Minister2:
There are some subjective factors of great importance which sometimes are not included in a general theoretical model. I will give you an example to show what I mean with this statement.

  The owner of one of the biggest companies in Greece, occupying thousands of employees, and I refer to Mr. X, who I also know on a personal level, treats his workers as if he is one of them. He tries to communicate and work with them in order to achieve proper labour conditions. According to this example, one sees that apart from the existence or non existence of collective agreements, or the size of the company, there are subjective, particular reasons that may influence labour agreements and not only the country's institutional and legal framework in general.

In particular, Mr. X revealed to me that when he was forced to proceed with layoffs due to the economic crisis, he used different criteria than those that are commonly used from the economic perspective. He didn't process to layoff employees based on their performance, but

by looking at their family status. From those who were most likely candidates for redundancy, he chose to show a preference in keeping those who kept a family or had a minor under their protection. What I really want to point out here is that there are occasions where the traditional criteria according to the principles of business management are not followed, and this is not only reduced in cases of small companies.

Another extreme case, going to the opposite direction from the example just mentioned, that shows how things have gone out of hand concerning the unravelling of the labour rights/benefits. For example, during interviews for hiring staff the question raised by a candidate referring to the number of working hours corresponding to the job, became the reason for not hiring this candidate.

Nowadays, the working field in Greece has undergone radical changes, after the latest rough agreements, by introducing more flexibility in the labour market.

Of course, as an introduction another point that should be underlined is that these "variables" you are looking for differentiate **themselves among countries, sizes of businesses and other more specific/specialized and subjective factors.**

In Greece, for example, there is also a distortion in the labour market caused by the arrival of immigrants in vast numbers, which in combination with the problems of the Greek Economy drives many employers to use undeclared workers, magnifying the size of tax evasion and other negative consequences. This is why during the time I served as minister of labour I insisted in the creation of L. I. T. (Σ.ΕΠ.Ε) (Labour Inspection Task) for the control of the black labour (illegal, undeclare). In Greece, due to the existence of small family businesses there has always been a trend for undeclared labour.

Furthermore, I would like to mention the peculiarities of the Greek economy as far as black labour is concerned. During my service I had an experience which shows how difficult it is for Greece to take action against undeclared/unregistered labour. A businessman of a small business, which was involved with the breeding of piglets, was challenging my team with real data, he was offering all the financial-accounting figures-fundamentals of his business and he claimed that if he had employed only legal-insured employees his business plan would be unsustainable. Indeed, the firms that face such kinds of problems are plenty in countries such as Greece, as the greater percentage of their business are small and encounter high levels of tax evasion.

Nowadays, because the era of information has become a reality, not just in theory as it has been perceived in the end of the Nineties, new problems in the field of labour relations emerge. Many advantages (of the Labour markets) in the Western Societies are vanishing and this phenomenon will have a great influence on these societies.

The recent years, there is free access, in knowledge, in the lectures of the best Universities, and in whatever is happening in the world **at the time we speak.** Countries in the developing world (e.g. African) that were isolated from sources of knowledge in the past, now have graduates from the best Universities of the world. Similar reasons offer in the large corporations of Europe and the US new alternatives if they decide to change their location of their plants.

V.B.: Do you consider that the global changes will influence the employment standards in Europe?

Minister2:

Definitely, I remember once in a forum between Minsters of Employment and Social Affairs of Europe and Asia, which was not any fruitful in terms of cooperation as there are dramatic differences between the two sides, that relevant things have been mentioned. For example, some Asian countries allow child labour something that is unacceptable in Europe. Their side was arguing that child labour is necessary in order the large multinational corporations to produce for example the athletic shoes that we all buy in the Western World. Therefore, it is obvious that there was no space for fruitful cooperation among the two counterparts.

However, I want to address something different that is why I mentioned this example. An Indian official stated that in "Every year, in India there are 5 million children that die from famine. These children will try to come to your countries because they know how you live in your societies."

There is a pressure upon Europe and the US in order to carry this external burden in their social states. This widespread spillover of knowledge is going to create losses not only in terms of real wages but in all dimensions that are connected with Labour rights and the social states the way we have used to know them in Europe. Through the acquisition of knowledge and information from the developing world the weakening of labour markets, in terms of social benefits, in Europe and the US will be inevitable.

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The unhindered spillover of knowledge has caused problems in the goods production too. The pharmaceutical companies lose their incentives to produce new drugs as their competitors quick will copy the patent and might release it in the market as generic version.

As already mentioned, these current trends create pressure in Europe and US in order to carry the burden of the extra losses in their markets. The employment rights and benefits will get some external pressure for a race to the bottom; to the most simplistic and probably worse employment and social framework.

V.B: **What is your opinion on the example I have given to you? What would you assign in the matrix?**

Minister2:

According to the example you provided to me and the delineations of the counterparts and the country you refer I would give a greater probability in the P1 event.

V.B: If we would like to give a quantitative prediction of that probability?

Minster2:

This is a very difficult task in order to determine a specific number. Definitely, it would be greater of the rest (P2, P3, and P4).

Maybe I would assign 75 per cent in the first cell and 25 per cent in the last.

B2:

V.B.: Which other variable would you add in the Decision Support System for better prediction of the above probabilities?

Minister2:

The size of the firm and the ability to relocate their plant abroad. Another variable that I would add, except from the size of the firm, it woul be the ability the corporations nowadays have to relocate their plants (production) to more profitable places.

For example, the plant of Goodyear tyres, and the one of Nissan that was under the management of Theoharakis Ltd., the official agent of Nissan in Greece. In these plants the Management and the employees were prone to find most of the times an agreement in their negotiations, nevertheless international circumstances imposed both plants to be relocated to other east European countries. Most of the costs, the Nissan case, passed to the Theoharakis ltd without causing to the Multinational Corporation (Nissan Ltd) any disruptions to their own operations.

It is worth mentioning here, that often in Greece the private sector had the tendency to get to an agreement smoother than the public sector, a sector where bargaining has been most of the times rough. In the private sector, the collective agreements often worked as a benchmark in order to facilitate consent between employers and employees. To sum up, the pasts period that collective agreements covered the private sector bargaining processes, the private sector did not face problems in order to reach an agreement. In generally I would argue that there was an attempt-tendency of cooperation between the two parties.

In any case, the problem you try to cope with, is a multidimensional and a very complex problem as I have addressed in the beginning of our conversation, and I frankly believe that it is difficult to find the best finite set of variables that would solve the problem.

B3:

V.B.: Would you exclude any of the variables already used in the Decision Support System?

Minister2:

I cannot be certain if I would exclude any of these variables that you use in the system, because the ones you use are variables most agents take into account when they conduct their economic transactions.

B4:

V.B.: Would you recommend a different scale for the variables that we use in the Decision Support System?

Minster2:

No

C1:

V.B.: Do you agree that the Institutional framework covering the employment relations has an important influence in the negotiations between Employers and Employees?

Minster2:

Definitely it has an important impact. The institutional framework covering the employment relations has a great influence on the employment relations and consequently on the negotiations between employers and employees.

C2:

V.B.: -Are you familiar with the concept of the game called Prisoner's Dilemma?

-Do you agree it can be used as plausible representation (reproduction), of a large number of negotiations between employers and employees?

Minister2:

 Yes, I am familiar with the notion but because of my background on law I am not the most appropriate person to answer this. Nevertheless, I believe that with the right set of assumptions somebody would be able to interpret the negotiations between management and labour such as following the rationale of the "Prisoners Dilemma"; always referring to a theoretical level.

12.4 Interview Minister 3

V.B: in my research I am interested in isolating a set of variables that negotiators take into account when participating in employers-employees negotiations. My ultimate goal is to create a Decision Support System that will give estimations about what is the probability reaching an agreement after cooperation or not between the two parties.

My questionnaire starts with an example. By assessing this example, you are asked to give your estimations on what is the probability that the final agreement of this negotiation task, is going to end up in one of the cells of the matrix that is in the second page.

As it is described in the example, the four cells P1, P2, P3, and P4 represent the following scenarios for the final outcome: Cooperative-Cooperative solutions from both sides (Labour-Management), Cooperative – Non-Cooperative (rigid strategy from the side of the Management), Non-Cooperative (From the side of the Employees) – Cooperative, and Non-Cooperative – Non-Cooperative from both parties.

Minster3: What exactly do these estimations represent?

V. B.: Each probability represents how many times the final agreement is going to be the result of the strategy combination that is depicted by each cell on the matrix.

Minister3: Just give me some minutes in order to read the example so I can give you an answer.

Indeed, I can see from your example that you are referring to a country with long tradition in collective bargaining and collective agreements, following a prudent fiscal policy. If we would like to reach a conclusion about the final agreement, I believe that it would be an agreement falling into the first cell, P1. If you asked me what would be the actual final agreement I would say something like the inflation plus the productivity would be a fair solution.

V. B.: If we would like to assign the actual numbers, what would be the probabilities that you would assign in the four cells?

Minister 3: As I have already told you I would give a greater percentage in the cooperative solution. I would assign a probability 50% in the first cell and the remaining 50% I would divide it equally in the other three cells. Basically, the probabilities would be P1: 50 and P2, P3, and P4: 16.6.

V. B.: Which other variables do you believe could be part of the system in order to achieve better assessment of the previous probabilities?

Minister 3: The variable that I would consider necessary to be part of your system would be something signalling the growth projection, that definitely influences the expectations of the participants in the negotiation task. I think that the probabilities of the cells that represent combinations of opposing strategies, P2 and P3, would change according the value of the variable that I have suggested.

The influence of the variable "Growth Projection" on these probabilities would be something like the following: Suppose there is an estimation for recession in the upcoming period for the economy, this would have as an impact the increase of the probability P2 where the employers would adopt a tough position and exert pressure on the employees in order to consent in an agreement that would be imposed by the employers. On the contrary, in periods where the variable 'growth projection' would signal a prosperity in the economy the probability P3 would have an increase compared with the rest.

For example the probabilities that I gave before would change if there was a variable measuring the 'growth projection' according to the following rules.

If there was an ominous prediction for future recession, then I would cut ten units from P1 and I would add them in P2, making the final distribution: P1: 40, P2: 26.6, P3: 16.6, and P4: 16.6.

On the opposite, if the value of the variable 'growth projection' is positive, implying positive growth rates, the probabilities would change favouring P3. The probabilities would change to P1: 40, P2: 16.6, P3: 26.6, and P4: 16.6 illustrating a greater tendency for consent by the side of the employers and a greater tendency for further claims from the side of the employees. I

frankly believe that such a variable would be very useful for a system like the one you have created.

V. B.: Would you add another variable except from the one you have already mentioned?

Minister3:

I do not think so. I just believe that it is necessary to have variable that would incorporate somehow the growth rate projection into the system. Besides, the variables used in the system cannot be too many in order to be easily used by the experts, allowing him or her to have a clear picture on of the process.

B3

V. B.: Would you exclude any of the variables already used in the Decision Support System?

Minister3:

No, I would not.

B4

V.B.: Would you recommend a different scale for the variables that we use in the Decision Support System?

Minister3:

No, I would not change the scale the variables have.

C1:

V.B. Do you agree that the Institutional framework covering the employment relations has an important influence in the negotiations between Employers and Employees?

Minister3:

The institutional framework, indeed, influences the process of the social pacts, and helps easing the task of negotiations facilitating an agreement between Employers and Employees. Of course, as you have already mentioned in your example, there must be a long tradition for the good function of the Institutional framework that would secure better results. Some countries have this long tradition and indeed better results can be produced through a procedure that follows specific steps. Of course in other countries, such as Greece, things are more complicated. Once, a well know economic historian have jokingly said that there are four groups of countries: the developed, the developing, Argentina and Italy. I am certain, that if he had examined the case of Greece he would have included Greece in his example as a different category. If we take into account the latest developments in the country we could consider ourselves as a case by our own. I really believe that if the Institutional framework is based on acceptable, from the society, rules it is a positive factor that facilitates the finding of a solution in the negotiations.

C2:

V.B.: Are you familiar with the concept of the game called 'the Prisoner's Dilemma?
-Do you agree or disagree that the negotiation task and its results find partly, a realistic representation through the game called 'the Prisoner's Dilemma'?

Minister3:

Yes, from Game Theory, someone could use this concept (The Prisoner's Dilemma) in order to represent the negotiation process.

13. Appendix III

The results of the Krusakl-Wallis test for each question of the survey are presented in the next section:

	Kruskal-Wallis chi-squared	df	p-value
Q1	11.6928	2	0.00289
Q2	0.6367	2	0.7273
Q3	5.5469	2	0.06245
Q4	1.9755	2	0.3724
Q5	7.9377	2	0.01889
Q6_1	1.5386	2	0.4633
Q6_2	0.4729	2	0.7894
Q6_3	4.033	2	0.1331
Q6_4	1.3757	2	0.5027
Q6_5	3.3234	2	0.1898
Q6_7	2.3339	2	0.3113
Q6_8	4.1554	2	0.1252
Q6_9	1.1714	2	0.5567
Q6_10	1.1732	2	0.5562
Q6_11	0.298	2	0.8616
Q6_12	1.281	2	0.527
Q6_13	0.2883	2	0.8657
Q6_14	2.5458	2	0.28
Q6_15	0.0346	2	0.9828
Q6_16	NaN	2	NA
Q6_17	3.6325	2	0.1626
Q7_a	2.3674	2	0.3061
Q7_b	0.4217	2	0.8099

Q7_c	3.8217	2	0.148
Q7_d	1.5107	2	0.4698
Q7_e	0.1814	2	0.91332
Q7_f	20.4313	2	3.659e-05

14.Appendix IV

A CD –Rom with the code and the software of the Decision Support System is provided in this section.

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