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Basketball contract: applying the SIPRES method in the process of evaluating the negotiation template*

by

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Abstract: In a negotiation process, knowing the preferences of the decision-maker and building a negotiation offer scoring system are very challenging tasks. There are many different methods that can be used to develop such a negotiation support tool, including, but not limited to, techniques based on the multiattribute utility theory (MAUT) or the outranking relation, for instance SAW, AHP or PROMETHEE II. In this paper we present the procedure of evaluating the negotiation template using an unconventional and inventive method called SIPRES, which combines the key elements of the revised Simos' procedure and the ZAPROS method to elicit the negotiator's preferences over some reference solutions. This transparent and easy to implement technique – thanks to the ZAPROS-like approach applied within it – allows the decision-makers to define their preferences in a simple manner, providing an effective method for analysing the trade-offs between the alternatives using selected reference alternatives only. Simultaneously, the revised Simos' procedure, applied in the method, allows for determining the cardinal scores of the alternatives. Thus, sophisticated negotiation analyses can be carried out. As an illustrative example the problem of basketball contract negotiations is discussed.

Keywords: negotiations, basketball contract, MCDA, SIPRES

1. Introduction

The sports industry is presently an important part of economic activity. In 2018, the global sports market was valued at nearly US$ 488.5 billion with growth averaging at 4.3% since 2014 (Górecka, 2020). With global sports industry revenues of US$ 129 billion in 2019, generated from a number of sources, such as television rights, ticketing, sponsorships, endorsements, merchandising, and sales of sporting goods, it is evident that professional sport is, indeed, a billion

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dollar business today (see website references www 4; www 5). And negotiations are an integral part of this business.

The purpose of this paper is to use the SIPRES method to evaluate the negotiation template for basketball contract negotiations, showing that it can facilitate the negotiation process owing to its properties, such as lucidity and user-friendliness. At this point it is worth mentioning that according to Forbes (www 1), the National Basketball Association (NBA) values are up nearly six-fold over the past decade. In the 2018-19 season each team was worth at least US$ 1 billion and the average NBA team had a valuation of US$ 2.12 billion (about 14% higher than in the 2017-18 season). Moreover, across the 2018-19 season, the NBA generated about $ 8.76 billion in revenue – the league's average revenue per team was $292 million (10% up) (www 2; www 3). Dealing with teams that have negotiated thousands of contracts may be intimidating. Certainly, this requires good preparation.

This paper consists of an introduction, conclusions and four main sections. In the subsequent section the practical aspects of the basketball contract negotiations are described. The following section discusses the issue of pre-negotiation preparation, and more specifically the negotiation offer scoring methods. Then, in the next section the SIPRES method is presented. The last of the main sections, in turn, contains a detailed description of the case study.

2. Basketball contract negotiations

Since professional sports became a large business industry, we can distinguish many different areas that can generate substantial income. We can discuss it on the organizational level (e.g., clubs, venues, agencies, etc.) as well as on the individual level (e.g., athletes, coaches). In the majority of situations it takes individual negotiations to achieve consensus, sign contract, and thus cooperation can be initiated.

Basketball is one of the most popular team sports in the world, where most frequent negotiations take place between the club and a player or his/her agent. On the professional level all contracts are negotiated by the agent. During the negotiations the agents seek to achieve the best contract, bonuses and other terms. It can be assumed that they seek for their clients best monetary interest and strive for maximum monetary satisfaction (Franklin, 1998). It is very important to involve the athlete in the preparation process, so that agent has the best knowledge of expectations of his/her client, whether it is security, a certain length of a contract or particular salary and bonuses (Burke, 1993). In order to smoothly go through the negotiations, the agent, together with the client, must prepare a couple of alternatives, which can increase the chances of signing the agreement. Some range of flexibility and acceptable alternatives for both sides of the agreement can greatly improve the chances of making a deal. In the world of professional sports agents are usually lawyers, experts in a particular

sports discipline or former athletes, who have a great deal of experience in the sports market and also contacts and relationships in the environment of a given discipline (Conlin, Orsini and Tang, 2013).

Each time a player is changing the club a new contract is being negotiated. The recent, *2020 Basketball Migration Report* indicates that players' transfer market has been continuously growing for the last decade, reaching new highs. Figure 1 presents the evolution of international transfers in basketball for men (blue line) and women (pink line). Interestingly, some 7,371 players were involved in at least one international transfer during one season. The report says that all FIBA Regions, except for the Americas, are seeing an increase in the numbers of international transfers. Typically, the contract negotiations take place during the off-season, period free of competitions, however the FIBA report data shows that with the growing number of transfers during the season, the work of an agent and the negotiations take place continuously.

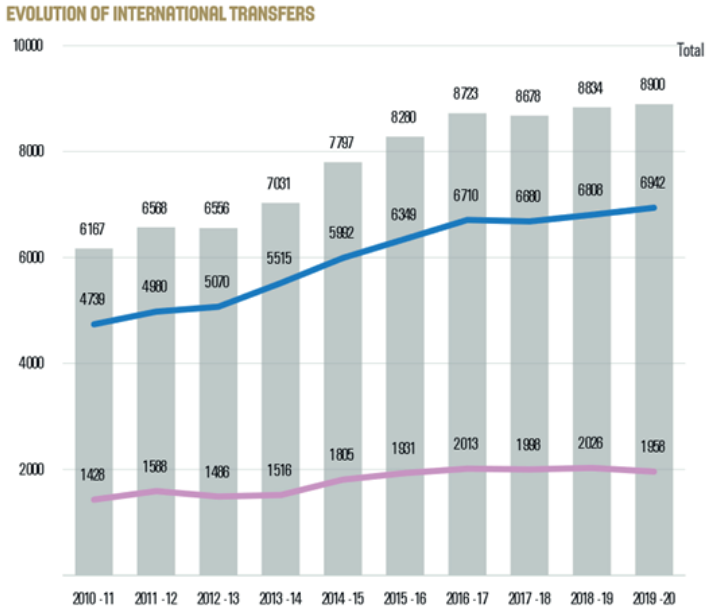

Figure 1. Evolution of international player transfers in seasons 2010/11-2019/20. Source: International Basketball Migration Report 2020, FIBA and CIES Sport Observatory, 2019, http://www.fiba.basketball/documents/ibmr2020.pdf, accessed on: 23.12.2020.

The negotiations can take place directly between two interested parties (usually done by domestic players) or through an intermediary like agent, manager (for international transfers) or parent of a player. Nevertheless, it is always a

process where two sides of negotiations seek the best conditions for themselves. On the club side we can talk about certain qualities and characteristics that are desirable in a player, so his presence in the team's roster can give a team competitive advantage. On the player's side, considering that playing basketball professionally is his or her job, negotiating the highest possible salary is the main aim. However, this may differ depending on the age, status and stage of the career, where playing for the team that guarantees most playing time or a chance to combine studies with the professional career is the priority.

Players can negotiate different levels of salary depending on the league they play in (see Table 1). The highest salaries are available in the NBA with average salary at US$ 7.7 million (the highest at US$ 40.2 million), followed by the top European and Asian clubs. For some players, playing in those top leagues, there is not much else they are looking at to negotiate. However, it may be quite important to secure appropriate insurance, which, besides covering the medical and rehabilitation costs, secures the salary for the player in case of a longer period of inability to play.

For those playing in the lower level leagues, the average salaries are around US$ 20,000-US$ 100,000 and in case of those contracts additional benefits are, as a rule, being negotiated. What players are interested in are amenities such as a high standard apartment, a car or meals that allow players to feel comfortable while being away from home. Considering the large number of international transfers in basketball in recent years, one of the additional conditions negotiated in basketball contracts are plane tickets for the player and/or his family.

Typically, the negotiation process is very personal and conditions vary from contract to contract, although the club budget may limit the number of additional provisions in the contract. Worth mentioning is the fact that some of the leagues have a salary cap, which means that limited amount of money can be spent on players salary (Dietl et al., 2011).

3. Pre-negotiation preparation – negotiation offer scoring methods

According to Confucius 'success depends upon previous preparation, and without such preparation there is sure to be failure'. Hence, it is not surprising that the theory of negotiation recommends extensive preparation before starting negotiations (Stein, 1989; Zartman, 1989; Simons and Tripp, 2003). The preparation includes recognizing the negotiation problem, getting to know your needs and limitations, as well as understanding what the other party wants and anticipating their limitations. It also includes the evaluation of the negotiation template (Górecka, 2015).

The negotiation template shows the structure of the negotiation problem by defining a list of negotiation issues and their feasible options. On its basis a set of potential negotiation offers may be determined, specifying various combinations

Table 1. Overseas basketball salary chart

Location	**League**	**Typical/average salary in USD (US $)**	**Maximum salary in USD (US$)**
US	NBA	7.7 million	40.2 million
Europe	EuroLeague	65,000-100,000	5 million
Spain	Liga ACB	130,000	5 million
Turkey	BSL	250,000-450,000	2.6 million
Europe	Lower tier leagues	1,000-3,000 per month	-
China	CBA	1 million	3 million
Australia	NBL	60,000- 100,000	-
Taiwan	SBL	1,400-2,000 per month	12,000 per month

Source: Overseas Basketball Players Salary. Global Table Chart, https://www.loveatfirstfit.com/guides/overseas-basketball-players-salary-table-chart-for-leagues-around-the-world/, accessed on: 23.12.2020.

of options for all the negotiation issues considered. Since comparing the offers taking into account many different criteria is, on the whole, quite difficult, a negotiation offer scoring system is usually constructed to support negotiators in their task. This system assigns scores to the potential offers, which makes comparisons easier (Górecka, 2015).

There are many different MCDM/A methods (see, e.g., Figuera, Greco and Ehrgott, 2005, and Yoon and Hwang, 1995) that can be used to develop a negotiation support tool in the form of a negotiation offer scoring system, e.g., SAW (Keeney and Raiffa, 1976), AHP (Saaty, 2006; Saaty and Vargas, 1991), PROMETHEE II (Brans and Vincke, 1985; Brans, Vincke and Mareschal, 1986), TOPSIS (Hwang and Yoon, 1981), or MARS (Górecka, Roszkowska and Wachowicz, 2014, 2016). However, their use is associated with certain difficulties. For instance, according to experimental research on electronic negotiations (Wachowicz and Kersten, 2009; Wachowicz and Wu, 2010) only few negotiators are able to interpret correctly the utility values and compare effectively the quality of the offers described by the SAW-based scores. In turn, the application of the technique based on AHP, which is applied in Web-HIPRE system (Mustajoki and Hämäläinen, 2000), where negotiators use a nine-point verbal scale and pair-wise comparisons of the elements of the negotiation template, assumes the compensation among the negotiation issues and is limited to supporting the discrete negotiation problems only. Additionally, pair-wise comparisons may be very challenging, which is also the case in the MARS approach (Górecka, 2015). The ranking of offers, constructed using the PROMETHEE II method, may change diametrically if new options are added, since this approach suffers from rank reversal phenomena (De Keyser and Peeters, 1996). Finally, application of

TOPSIS to evaluation of the negotiation template (Roszkowska and Wachowicz, 2015; Wachowicz and Błaszczyk, 2013) limits the possibilities of defining individual preferences by the negotiators, as the concept of distance measurement in appraising the attractiveness of offers is used there (Górecka, Roszkowska and Wachowicz, 2016).

On the one hand, an experimental study on MCDM by Roszkowska and Wachowicz (2014) showed that the decision-makers often describe their preferences qualitatively, in a verbal or visual way (Górecka, 2015). On the other hand, quantitative methods are widely used in negotiation support for revealing the negotiators' preferences and constructing a negotiation offer scoring system (Kersten and Noronha, 1999; Raiffa, Richardson and Metcalfe, 2002). This is because the quantitative approach allows for conducting sophisticated analyses of the negotiation process, for instance: visualizing the negotiation progress, measuring the scale of concessions, searching for the improvements in the contract negotiated by the parties, finding the arbitration (fair) solution of the negotiation problem, as well as generating general descriptive conclusions (Filzmoser and Vetschera, 2008; Kersten, Vahidov and Gimon, 2014).

Taking all that into consideration, an innovative tool for evaluating the negotiation template, called SIPRES, was developed (see Górecka, 2015). It combines the key elements of the revised Simos' procedure (Figueira and Roy, 2002) and the ZAPROS method (Larichev and Moshkovich, 1995) to reveal the negotiator's preferences over some reference solutions. This transparent and easy to implement technique allows the negotiators to define their preferences in a simple, visual way, leading to a cardinal scoring system. Hence, advanced symmetric and asymmetric negotiation analyses can be carried out.

Since in the SIPRES method the negotiation template can be defined descriptively and the method itself is user-friendly, neither tedious or strenuous, nor complicated for the decision-maker, and ultimately the cardinal scores are obtained for alternatives/offers, it seems to be ideal for the evaluation of the negotiation template in the here considered example of basketball contract negotiations.

4. The SIPRES method

The acronym SIPRES stands for: **Si**mos' **P**rocedure for **Re**ference **S**ituations. It was introduced in 2015 (Górecka, 2015) as an extension of the work on the MARS approach – a tool for the verbal evaluation of the negotiation template (see Górecka, Roszkowska and Wachowicz, 2014 and 2016). It was applied thereafter in the road route selection process (see Górecka, 2016).

SIPRES is based on two methods: the revised Simos' procedure (Figueira and Roy, 2002) and ZAPROS (Larichev and Moshkovich, 1995). It was designed to obtain a complete ranking of the alternatives with scores measured on a

cardinal scale. An overview of the SIPRES algorithm is given below (see also Górecka, 2015 and 2016).

Let $F = \{f_1, f_2, ..., f_n\}$ be a finite set of n evaluation criteria/negotiation issues; X_k – a finite set of possible verbal values on the scale of a criterion $k = 1, 2, ..., n$, where $|X_k| = n_k$; $X = \prod_{k=1}^{n} X_k$ is the set of all possible vectors in the decision/negotiation space of n criteria; and $A = \{a_1, a_2, ..., a_m\} \subseteq X$ is a subset of X describing the alternatives/offers considered.

The SIPRES procedure consists of the following steps:

1. Determining the evaluation scale for each criterion/issue considered in the decision-making/negotiation problem.

2. Preparing a set of blank cards and a set of cards with hypothetical alternatives/offers (each with the best evaluation/resolution levels for all the criteria/issues but one), as well as the ideal and anti-ideal reference vectors (with the best and the worst evaluations for all the criteria/issues, respectively), and sorting them from the worst to the best one.

Introducing blank cards between two successive cards, if necessary, according to the following principle: the greater the difference between the evaluations of the alternatives/offers, the greater the number of blank cards:

- no blank card means that the alternatives/offers do not have the same evaluation and that the difference between the evaluations is equal to one unit u used for measuring the intervals between evaluations,
- one blank card means a difference of two units, two blank cards mean a difference of three units, etc.

Determining how many times (the proportion) the best alternative/offer is better than the worst one in the ranking.

3. Processing the information obtained as in the revised Simos' procedure in order to obtain the normalized scores for the elements compared, i.e. to form the Joint Cardinal Scale (JCS).

Information is processed as follows (Figueira and Roy, 2002, pp. 322-323):

(a) Let n^* be the number of positions in the ranking, $e_r^{'}$ – the number of blank cards between the positions r and $r+1$, and z – the ratio, showing how many times the best element in the ranking is better than the worst one. We calculate:

$$e_r = 1 + e_r^{'} \qquad \forall r = 1, ..., n^* - 1 \tag{1}$$

$$e = \sum_{r=1}^{n^*-1} e_r \tag{2}$$

$$u = \frac{z-1}{e} \tag{3}$$

retaining six decimal places for u.

Subsequently, we determine the non-normalized score $p(r)$ for each position in the ranking:

$$p(r) = 1 + u \cdot (e_0 + ... + e_{r-1}), \tag{4}$$

where $e_0 = 0$.

We round these scores to two decimal places. If there are several elements in the same position r, all of them obtain the same score $p(r)$.

(b) Let g_k be an element in the position r, and $p_k^{'}$ – the non-normalized score of this element, $p_k^{'} = p(r)$. We calculate:

$$P^{'} = \sum_{k=1}^{n} p_k^{'} \tag{5}$$

$$p_k^* = \frac{100 \cdot p_k^{'}}{P^{'}}. \tag{6}$$

Subsequently, we determine $p_k^{"}$ by deleting some of the decimal digits from p_k^*. Let s be the number of decimal places taken into account. We compute:

$$P^{"} = \sum_{k=1}^{n} p_k^{"} \leq 100 \tag{7}$$

$$\varepsilon = 100 - P^{"} \leq 10^{-s} \cdot n \tag{8}$$

$$v = 10^s \cdot \varepsilon. \tag{9}$$

Finally, we set $p_k = p_k^{"} + 10^{-s}$ for v suitably selected elements and $p_k = p_k^{"}$ for the other $n - v$ elements. We obtain $\sum_{k=1}^{n} p_k = 100$, where p_k is the normalized score of the element g_k, with the required number of decimal places.

The choice of the v elements, whose scores will be rounded, is performed using the following algorithm (Figueira and Roy, 2002, pp. 323-324):

[i] For each element g_k we determine the ratios:

$$d_k = \frac{10^{-s} - (p_k^* - p_k^{"})}{p_k^*} \tag{10}$$

$$d_k^* = \frac{(p_k^* - p_k^{"})}{p_k^*}. \tag{11}$$

[ii] We define the set $M = \{k : d_k > d_k^*\}$, $|M| = m$.

[iii] We create two lists, R and R^*:

- the list R, consisting of the pairs (k, d_k), sorted in the ascending order of d_k,
- the list R^*, consisting of the pairs (k, d_k^*), sorted in the descending order of d_k^*.

[iv] We split the set of n elements into two subsets: F^+ and F^-, where $|F^+| = v$ and $|F^-| = n - v$, as follows:

- if $m + v \leq n$, then F^- consists of the m elements of M and the last $n - v - m$ elements of R^*, which are not in M; while F^+ consists of the first v elements of R^* which are not in M;
- if $m + v > n$, then F^+ consists of the $n - m$ elements not belonging to M and the first $v + m - n$ elements of R, which are in M; while F^- consists of the last $n - v$ elements of R, which are in M.

4. Replacing the evaluations/resolution levels in each vector, describing the alternative/offer considered in the decision-making/negotiation problem by the corresponding scores from the JCS and defining for each alternative/offer the distance from the ideal alternative/offer, using the formula:

$$L_i = \sum_{k=1}^{n} (p_k^{\max} - p_{ik}) \tag{12}$$

where p_{ik} is the score from the JCS, substituting the assessment of alternative/offer a_i according to criterion/issue f_k, and $p_k^{\max}$ is the score for the best possible assessment for a given criterion/issue.

5. Building the complete final ranking of the alternatives/offers according to the distance values L_i in the ascending order.

The key characteristics of the SIPRES approach are presented in Table 2.

5. Illustrative example

The present study illustrates the application of the SIPRES method in basketball contract negotiations, namely the application, serving for building a negotiation offer scoring system for a Polish player at the age of about 25, a representative of the country, a medallist of the Polish Championship, who is negotiating a foreign contract at the peak of her career. International negotiations always take place with the participation of the manager or agent, who communicates directly with the club and the player. His job is to negotiate the best possible offer for his player, therefore knowing player's goals should be his main concern.

In the negotiation process the following issues are discussed:

- f_1 – contract length,
- f_2 – salary and bonuses,
- f_3 – additional benefits (plane tickets, insurance, apartment, car, meals).

Table 2. The SIPRES approach – summary

Application
Designed to reveal a sound preference relationship that can be used in future cases; especially valuable in the case of decision-making/negotiation problems with mostly qualitative parameters and no objective model for their aggregation
Decision-making problem
More oriented to problems with a rather large number of alternatives, while the number of criteria is usually relatively smaller
Decision-makers
Does not require any special knowledge of decision analysis from the decision-makers since the information requested from them is particularly clear and easy to define; allows decision-makers to define their preferences visually in a simple and user-friendly way, based on a 'card-playing' procedure; focuses only on essential differences and, thus, decreases the complexity of judgements required from the decision-makers
Methodology
Combines the key elements of the revised Simos' procedure and the ZAPROS method to construct universal decision rules in the criteria space and then use them on any set of actual alternatives/offers; allows for comparing complete alternatives/offers, which is a natural way of comparing; does not require determining the weights of the criteria/negotiation issues separately – they are derived from the alternative-to-alternative comparisons

Source: own elaboration, based on Górecka (2016).

Basketball contract for a professional player includes all of the negotiated terms that are considered as a compensation for players' work as well as other terms that simply make up for players well-being while being away from home. Both are important from the point of view of player's satisfaction as well as motivation, which should be maintained on the highest level possible, since the basketball season is quite long (about eight months, not including the pre-season). The main point of most negotiations in sports is focusing around the salary and once it is agreed by both sides, other terms are discussed and included in the contract. Some salary options can be dependent on the duration of the contract or some financial terms can be renegotiated after the first year of agreement. Typically, the most desired length of a contract is two years, ideally with the option of the renegotiation of the financial terms. A two-year contract helps the player to settle better with the team and club, and helps achieve the long-term goals of both the player and the club more effectively. It also provides a player with a certain type of occupational safety, which means that there is no need to search for a new club after each year. Shorter contracts (one year long) mean that there is a certain insecurity every year after the completion of the season, even though it might be a desired option for someone who is eager to have new experience in the new location every year. Longer contracts, of three or more years, are very rare and are desired neither by the players nor clubs. Therefore, from the point of view of the player, the most desirable is a two-year contract with the possibility of renegotiation after one year. A one-year contract is acceptable, when other options (less than one year or for three or more years) are unfavourable.

Salary and bonuses are the key factors from the point of view of the overall player satisfaction and motivation. Playing basketball professionally is a job, so compensation is a crucial part of the contract. The salary level depends on the players' skills, abilities and experience, but, on the other hand, it will depend on the club budget. A season salary oscillating around 100,000 EUR is a very good salary and very few players can ask for it while negotiating a new deal. Most likely only top European, Asian, or WNBA teams can offer such a salary. Top teams usually play for the highest trophies, which means that they also compensate players for achieving club goals, like winning the championship or any of the three top spots in the league. An additional subject of the team bonus can also be winning the country cup tournament and winning or at least playing for the final rounds of the international club competition. Depending on the budget, clubs can also offer additional bonus for each won game. This can serve as an additional motivation before each game of the particular season. The level of this bonus can vary depending on the club budget, but it can be up to a couple hundred euro. A salary at the level of 25,000 EUR marks the lowest range of desirable season salary and is possible to achieve in mid-level teams. For all players, competing at the top level, any salary ranging from 25,000 up to 100,000 could be acceptable and very desirable. Any salary below 20,000 EUR is not an attractive offer from the point of view of a high quality player.

Therefore, from the point of view of the player, the most desirable would be to receive an offer with the salary up to 100,000 EUR, with additional bonuses that reward the season success and also each game that the team has won, but also the option of 25,000 EUR with the bonuses mentioned is acceptable. The least desirable option is that with a salary below 20,000 EUR without additional bonuses.

The last group of benefits that could be negotiated with the contract include some of the typical things that complement the main terms of the contract, but have a significant influence on the overall satisfaction of the player in the new place of work and the well-being. Those benefits include detailed arrangements concerning items like plane tickets, contract and medical insurance, apartment and a car for the duration of the contract.

Typically, teams offer two round-trip (RT) tickets for a player, which already indicates that there would be a possibility to travel home for a Christmas break. This is a standard offer and anything above that is a bonus for a player and they can use it for another trip (if the season will allow for that), or it can be used by any member of the family to come for a visit. However, there can be an option with only one RT ticket or none. This will already indicate that the ticket covered by the club will only bring you from and to your home and any possible Christmas break will require you to purchase your own ticket. A contract with no plane ticket or even with an option where you have to buy your own ticket and it will be reimbursed is very rare, but typically it raises some sort of concerns in players if the club has some financial problems or a tight budget and cannot afford it. It may raise some suspicion towards the other terms of the contract.

Another benefit, important for a player, is an insurance policy, since sports usually entail definite risks, and basketball, in particular, is a contact sport and can cause many different injuries that could prevent a player from playing for a certain period of time. During this time there is a need to seek medical assistance and fulfil basic life needs. The insurance, depending on the option, can help cover some costs of necessary surgeries and rehabilitation. In case of longer convalescence, the insurance could also refund entire or part of the lost salary from the contract, during which a player got injured.

For the duration of the contract the club shall provide suitable living conditions organizing an apartment with the adequate standard. An adequate standard would typically mean that the apartment is modern, clean, spacious, so the player can feel comfortable during the entire stay away from home. The most desirable situation is when a player has an apartment for individual use, where he or she can have some privacy and can feel like at home. A less comfortable situation is when clubs arrange apartments, which are shared by two or three players. It might be a good idea for the younger players, who will appreciate some company and support at home.

Additionally, some clubs, due to cooperation with some local restaurants,

offer in their contracts meals that the players can have during the day. That is again a good option for younger players and all those who value some extra free time and local cuisine. This is very often perceived as some sort of compensation that the club cannot offer in the form of additional money, but creates a situation, where a player can save certain amount of money, which he or she will normally spend on groceries.

Last but not least, a car can be added to the contract. Typically, clubs with bigger budgets can offer a car to their players, usually rented for the season, or there is a sponsor that has an option to provide cars (e.g., a local car dealer). Having a car definitely makes a player's life easier, because irrespective of the weather and time of the day he/she can safely get around. Also, a car provides some level of independence in terms of actively spending free time, thus allowing players to travel within the foreign country.

Therefore, from the point of view of the player, the most desirable is to negotiate three RT plane tickets, with a possibility to use them for any break that players might have during the season or to designate family members to use it for visiting travel, as well as a high standard apartment and a car for own use throughout the season. In addition, the club should provide an insurance covering all the medical and rehabilitation costs in case of an injury of the player, as well as the salary in case of inability to continue the season. The option with two RT plane tickets, insurance, a standard apartment and a car, but including one-two meals provided by the club is acceptable, while other options with one RT plane ticket and insurance, but shared apartment and a shared car or an option without any of those benefits are unfavourable for the player.

To determine the evaluations of possible offers, submitted in the course of contract negotiations from the point of view of the basketball player, the SIPRES method will be applied. The implementation of the individual steps of the algorithm is shown below.

Step 1. Negotiation issues and options determined by the basketball player and her agent within the analysed negotiation problem are presented in Table 3. As can be seen, the negotiation template is defined descriptively for all three issues considered.

Step 2. The ranking of cards with hypothetical alternatives (offers), determined by the basketball player, is presented in Table 4. The ranking includes the offers with the best resolution level for all the criteria (issues) but one, along with the ideal and anti-ideal alternatives ([A1, B1, C1] and [A3, B3, C5] respectively). Furthermore, in the last column, the information is provided on how many times, in the basketball player's opinion, the best alternative ([A1, B1, C1]) is better than the worst one ([A3, B3, C5]).

Step 3. The information on basketball player's preferences is processed as described in the revised Simos procedure to obtain the normalized evaluations for the elements compared, i.e. to form the Joint Cardinal Scale (JCS). The calculations performed are shown in the tables below (see Tables 5-7).

Table 3. Negotiation template

Issues		Options - notations	Options – descriptions
f_1	**Contract length**	**A1**	**Favourable:** 2-year contract with an option to renegotiate terms after the first year (1+1)
		A2	**Suitable/neutral:** 1-year contract
		A3	**Adverse:** contract for less than 1 year or for 3 or more years
f_2	**Salary and bonuses**	**B1**	**Favourable:** a high salary around 100,000 EUR per season, bonus for achieving top spots in the league (1-3) and bonus for winning the cup, bonus of 200 EUR for each game won
		B2	**Suitable/neutral:** a season salary of 25,000 EUR, bonus of 100 EUR for each game won
		B3	**Adverse:** a salary per season lower than 20,000 EUR, no bonuses
f_3	**Additional benefits**	**C1**	**Very good:** 3 RT (round-trip) tickets with a possibility to designate family members to use it for visiting travel, insurance covering all the medical and rehabilitation costs in case of an injury as well as the salary in case on inability to continue the season, own high-class/standard apartment, own high-class car
		C2	**Good:** 2 RT tickets, insurance covering all the medical and rehabilitation costs in case of an injury and refunding part of the salary, own high-class/standard apartment, own standard car, 1-2 meals per day paid by the club
		C3	**Average:** 2 RT tickets, insurance covering all the medical and rehabilitation costs in case of an injury, small standard apartment for private use, standard car for private use, 1-2 meals per day paid by the club
		C4	**Bad:** 1 RT ticket, insurance covering medical and rehabilitation costs in case of an injury, car shared with teammate, apartment shared with teammate, 1 meal per day paid by the club
		C5	**Very bad:** the player has to buy tickets on their own, no or low insurance, no car, no meals, own room in a multi-person apartment

Source: own elaboration.

Table 4. Basketball player's preferences based on the card play procedure

A3	B3	C5	
Blank card			
Blank card			
Blank card			
Blank card			
A1	B1	C5	According to the basketball player negotiating her foreign contract the option [A1, B1, C1] is 6 times better than the option [A3, B3, C5]; thus, z=6 (see the algorithm, sub-step 3a).
A1	B1	C4	
Blank card			
A1	B3	C1	
A1	B2	C1	
Blank card			
A3	B1	C1	
A2	B1	C1	
Blank card			
A1	B1	C3	
A1	B1	C2	
A1	B1	C1	

Source: own elaboration.

Sub-step 3a. Computing e_r (see formula 1) and $p(r)$ (see formula 4). Since according to the basketball player [A1, B1, C1] is 6 times better than [A3, B3, C5], then $z = 6$.

Sub-step 3b. Computing p_k^* (see formula 6), determining $p_k^{"}$ by deleting some of the decimal digits from p_k^* (s=2, because the number of decimal places taken into account is 2), and finding v =6 (see formula 9). Determining d_k (see formula 10) and d_k^* (see formula 11). Finding the set

$$M = \{k : d_k > d_k^*\}, \quad |M| = m = 3$$

(see point 3b ii) and creating two lists, R and R^* (see point 3b iii). Dividing an n-element set of hypothetical alternatives (n =10) into two subsets: F^+ and F^- (see point 3b iv). Since

$m + v$ =3+6=9<n =10,

then F^- consists of the m =3 elements of M and the last

n-v-m =10-6-3=1

element of R^*, which is not in M. In turn, F^+ consists of the first $v = 6$ elements of R^*, which are not in M. Finally, we set $p_k = p_k^{"} + 10^{-s}$ for $v = 6$ elements from F^+ and $p_k = p_k^{"}$ for the other $n - v = 4$ elements. We obtain $\sum_{k=1}^{n} p_k = 100$, where p_k is the normalized score of the element g_k, with the required number of decimal places.

Table 5. Determining the non-normalized evaluations of the hypothetical alternatives ($z = 6$)

Position r	Alternatives in the position r			Number of blank cards between the positions r and $r+1$	e_r	Non-normalized evaluations $p(r)$
	f_1	f_2	f_3			
1	A3	B3	C5	4	5	1.00
2	A1	B1	C5	0	1	2.56
3	A1	B1	C4	1	2	2.88
4	A1	B3	C1	0	1	3.50
5	A1	B2	C1	1	2	3.81
6	A3	B1	C1	0	1	4.44
7	A2	B1	C1	1	2	4.75
8	A1	B1	C3	0	1	5.38
9	A1	B1	C2	0	1	5.69
10	A1	B1	C1	...	...	6.00
Sum				7	16	40.01

Source: own elaboration.

Table 6. Determining the normalized evaluations of the hypothetical alternatives ($s = 2$, $z = 6$)

Position r	**Alternatives in the position** r			$\mathbf{p_k^*}$	$\mathbf{p_k''}$	$\mathbf{d_k}$	$\mathbf{d_k^*}$	**Set M**	$\mathbf{p_k}$
	$\mathbf{f_1}$	$\mathbf{f_2}$	$\mathbf{f_3}$						
1	A3	B3	C5	2.499375	2.49	0.000250	0.003751		2.50
2	A1	B1	C5	6.398400	6.39	0.000250	0.001313		6.40
3	A1	B1	C4	7.198200	7.19	0.000250	0.001139		7.20
4	A1	B3	C1	8.747813	8.74	0.000250	0.000893		8.75
5	A1	B2	C1	9.522619	9.52	0.000775	0.000275	(M)	9.52
6	A3	B1	C1	11.097226	11.09	0.000250	0.000651		11.10
7	A2	B1	C1	11.872032	11.87	0.000671	0.000171	(M)	11.87
8	A1	B1	C3	13.446638	13.44	0.000250	0.000494		13.45
9	A1	B1	C2	14.221445	14.22	0.000602	0.000102	(M)	14.22
10	A1	B1	C1	14.996251	14.99	0.000250	0.000417		14.99
Sum				**100**	**99.94**				**100**

Source: own elaboration

Table 7. R and R^* lists ($s = 2$, $v = 6$, $m = 3$, $n = 10$)

List R					**List R***				
Position r	**Alternatives**			$\mathbf{d_k}$	**Position r**	**Alternatives**			$\mathbf{d_k^*}$
	$\mathbf{f_1}$	$\mathbf{f_2}$	$\mathbf{f_3}$			$\mathbf{f_1}$	$\mathbf{f_2}$	$\mathbf{f_3}$	
6	A3	B1	C1	0.000250	**1**	A3	B3	C5	0.003751
2	A1	B1	C5	0.000250	**2**	A1	B1	C5	0.001313
8	A1	B1	C3	0.000250	**3**	A1	B1	C4	0.001139
10	A1	B1	C1	0.000250	**4**	A1	B3	C1	0.000893
1	A3	B3	C5	0.000250	**6**	A3	B1	C1	0.000651
4	A1	B3	C1	0.000250	**8**	A1	B1	C3	0.000494
3	A1	B1	C4	0.000250	**10**	A1	B1	C1	0.000417
9	A1	B1	C2	0.000602	**5**	A1	B2	C1	0.000275
7	A2	B1	C1	0.000671	**7**	A2	B1	C1	0.000171
5	A1	B2	C1	0.000775	**9**	A1	B1	C2	0.000102
$\mathbf{F^+ = \{1, 2, 3, 4, 6, 8\}}$; $\mathbf{F^- = \{5, 7, 9, 10\}}$									

Source: own elaboration

Tables 8 and 9 present the normalized scores for the hypothetical reference alternatives and the Joint Cardinal Scale, respectively. The normalized scores reflect the scale of concessions required, when the ideal option is replaced by the option under consideration.

Table 8. Normalized scores of the hypothetical alternatives

Alternatives			$\mathbf{p_k}$
$\mathbf{f_1}$	$\mathbf{f_2}$	$\mathbf{f_3}$	
A3	B3	C5	2.50
A1	B1	C5	6.40
A1	B1	C4	7.20
A1	B3	C1	8.75
A1	B2	C1	9.52
A3	B1	C1	11.10
A2	B1	C1	11.87
A1	B1	C3	13.45
A1	B1	C2	14.22
A1	B1	C1	14.99

Source: own elaboration.

Table 9. Joint Cardinal Scale

JCS	
Resolution level	**Score**
C5	6.40
C4	7.20
B3	8.75
B2	9.52
A3	11.10
A2	11.87
C3	13.45
C2	14.22
A1	14.99
B1	14.99
C1	14.99

Source: own elaboration.

Step 4. For each offer the distance L_i from the ideal offer is defined (see formula 12). In order to do that we replace the resolution levels in each vector describing the alternative from the negotiation template by the corresponding scores from the JCS. For instance, the distance value for option a_{22} =[A2, B2, C3] is calculated as follows:

L_{22} = (14.99-11.87) + (14.99-9.52) + (14.99-13.45) = 10.13.

Step 5. Having defined the distance between each alternative (offer) and the ideal one we build the ranking of the alternatives (offers). The distances to the ideal alternative for each of the 45 packages that can be built within the negotiation template as well as their ranks are given in Table 10. The ranking with distances is also presented in Fig. 2.

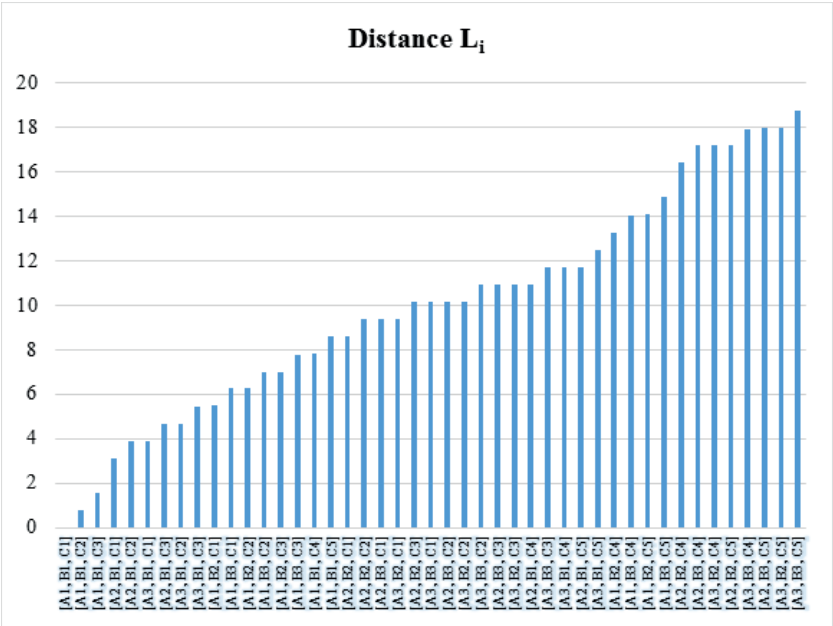

Figure 2. Packages and their distances to the ideal alternative
Source: own elaboration.

The negotiator is involved in the first two steps of the SIPRES method, namely: (1) building the evaluation scale for each criterion/issue considered in the negotiation problem, (2) sorting the alternatives/offers from the reference set from the worst one to the best one, and determining how many times the best offer is better than the worst one. Next three steps, namely (3) construction of the JCS based on the processed information about decision-maker's preferences, (4) obtaining distance values, and (5) building the complete final ranking of the considered alternatives/offers, do not require the decision-maker's participation – they are conducted without any interaction with the negotiator. The scores obtained reflect the distances to the ideal alternative/offer. Therefore, the smaller the score, the better the alternative/offer is.

The distance values presented in Table 10 and Figure 2 may be used in the negotiation process to evaluate the submitted offers. They make it possible to

Table 10. Packages, their distances to the ideal alternative and ranks

i	Criterion value			Score			Distance L_i	Rank
	f_1	f_2	f_3	p_{i1}	p_{i2}	p_{i3}		
1	**A1**	**B1**	**C1**	14.99	14.99	14.99	**0**	1
2	**A1**	**B1**	**C2**	14.99	14.99	14.22	**0.77**	2
3	**A1**	**B1**	**C3**	14.99	14.99	13.45	**1.54**	3
4	**A2**	**B1**	**C1**	11.87	14.99	14.99	**3.12**	4
5	**A2**	**B1**	**C2**	11.87	14.99	14.22	**3.89**	5.5
6	**A3**	**B1**	**C1**	11.10	14.99	14.99	**3.89**	5.5
7	**A2**	**B1**	**C3**	11.87	14.99	13.45	**4.66**	7.5
8	**A3**	**B1**	**C2**	11.10	14.99	14.22	**4.66**	7.5
9	**A3**	**B1**	**C3**	11.10	14.99	13.45	**5.43**	9
10	**A1**	**B2**	**C1**	14.99	9.52	14.99	**5.47**	10
11	**A1**	**B3**	**C1**	14.99	8.75	14.99	**6.24**	11.5
12	**A1**	**B2**	**C2**	14.99	9.52	14.22	**6.24**	11.5
13	**A1**	**B3**	**C2**	14.99	8.75	14.22	**7.01**	13.5
14	**A1**	**B2**	**C3**	14.99	9.52	13.45	**7.01**	13.5
15	**A1**	**B3**	**C3**	14.99	8.75	13.45	**7.78**	15
16	**A1**	**B1**	**C4**	14.99	14.99	7.20	**7.79**	16
17	**A1**	**B1**	**C5**	14.99	14.99	6.40	**8.59**	17.5
18	**A2**	**B2**	**C1**	11.87	9.52	14.99	**8.59**	17.5
19	**A2**	**B2**	**C2**	11.87	9.52	14.22	**9.36**	20
20	**A2**	**B3**	**C1**	11.87	8.75	14.99	**9.36**	20
21	**A3**	**B2**	**C1**	11.1	9.52	14.99	**9.36**	20
22	**A2**	**B2**	**C3**	11.87	9.52	13.45	**10.13**	23.5
23	**A3**	**B3**	**C1**	11.10	8.75	14.99	**10.13**	23.5
24	**A2**	**B3**	**C2**	11.87	8.75	14.22	**10.13**	23.5
25	**A3**	**B2**	**C2**	11.10	9.52	14.22	**10.13**	23.5
26	**A3**	**B3**	**C2**	11.10	8.75	14.22	**10.90**	27
27	**A2**	**B3**	**C3**	11.87	8.75	13.45	**10.90**	27
28	**A3**	**B2**	**C3**	11.10	9.52	13.45	**10.90**	27
29	**A2**	**B1**	**C4**	11.87	14.99	7.20	**10.91**	29
30	**A3**	**B3**	**C3**	11.10	8.75	13.45	**11.67**	30
31	**A3**	**B1**	**C4**	11.10	14.99	7.20	**11.68**	31
32	**A2**	**B1**	**C5**	11.87	14.99	6.40	**11.71**	32
33	**A3**	**B1**	**C5**	11.10	14.99	6.40	**12.48**	33
34	**A1**	**B2**	**C4**	14.99	9.52	7.20	**13.26**	34
35	**A1**	**B3**	**C4**	14.99	8.75	7.20	**14.03**	35
36	**A1**	**B2**	**C5**	14.99	9.52	6.40	**14.06**	36
37	**A1**	**B3**	**C5**	14.99	8.75	6.40	**14.83**	37
38	**A2**	**B2**	**C4**	11.87	9.52	7.20	**16.38**	38
39	**A2**	**B3**	**C4**	11.87	8.75	7.20	**17.15**	39.5
40	**A3**	**B2**	**C4**	11.10	9.52	7.20	**17.15**	39.5
41	**A2**	**B2**	**C5**	11.87	9.52	6.40	**17.18**	41
42	**A3**	**B3**	**C4**	11.10	8.75	7.20	**17.92**	42
43	**A2**	**B3**	**C5**	11.87	8.75	6.40	**17.95**	43.5
44	**A3**	**B2**	**C5**	11.10	9.52	6.40	**17.95**	43.5
45	**A3**	**B3**	**C5**	11.10	8.75	6.40	**18.72**	45
i	f_1	f_2	f_3	p_{i1}	p_{i2}	p_{i3}	**Distance L_i**	**Rank**
	Criterion value			**Score**				

Source: own elaboration.

analyse the offer exchange process, find the concession curves and determine which proposal is the best for the basketball player and should be accepted.

6. Conclusions

As professional sports become increasingly lucrative, more and more athletes are negotiating and signing contracts with teams, agents and sponsors. The SIPRES method, presented in this paper, is a transparent, functional and easy to apply approach that can improve the negotiation process and help both parties sign a win-win contract. It requires decision-makers/negotiators to supply the basic preferential information only: they need to assess trade-offs, which is rather natural since it resembles the analyses carried out in real-life negotiations. Furthermore, when defining preferences, decision-makers/negotiators operate with an intuitively interpreted card tool, which visualizes and thus facilitates the entire process. Consequently, a cardinal negotiation offer scoring system is constructed that can be used in the negotiation process, for instance to measure the scale of concessions or to determine the arbitration solution.

In fact, the basketball player, participating in the case study described in this article, confirmed that arranging offers in accordance with the SIPRES procedure was neither difficult nor time-consuming. The greatest decision-making challenge, causing hesitation and doubt, was figuring out how many times the best offer was better than the worst one.

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