



Menadžment u sportu

naučni časopis iz oblasti menadžmenta u sportu



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Naučni časopis iz oblasti menadžmenta u sportu

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Poštovani,

Pred Vama je novi broj časopisa „Menadžment u sportu“ – naučnog časopisa iz oblasti menadžmenta u sportu. Izdavač časopisa je Fakultet za menadžment u sportu Alfa univerziteta u Beogradu. Časopis je veoma značajan izvor novih naučnih i stručnih informacija, obzirom da je jedini ovakve vrste u regionu. Redakcija časopisa predano radi na podizanju ugleda i nivoa značajnosti časopisa. Časopis izlazi jednom godišnje sa radovima koji se objavljuju na srpskom i engleskom jeziku.

Pozivamo sve zainteresovane istraživače u oblasti menadžmenta u sportu i iz drugih srodnih oblasti povezanih sa sportom da svojim naučnim i stručnim radovima daju doprinos razvoju časopisa.



Violeta Šiljak, Ogovorni urednik

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FAKTORSKA STRUKTURA TEHNIČKO-TAKTIČKIH AKTIVNOSTI POSMATRANIH TOKOM MEČEVA NAJBOLJIH IGRAČA STONOG TENISA U SVETU

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Apstrakt

U istraživanju koje je imalo za cilj utvrđivanje fundamentalnih dimenzija prostora tehničko-taktičkih aktivnosti analizirano je 154 meča u kojima je nastupilo 77 igrača u završnom turniru na Olimpijskim igrama održanim 2008. godine u Pekingu. Tehničko taktička aktivnost je bila opisana preko skupa od 16 varijabli.

Faktorski model je opisivao 75.9659% ukupno registrovane varijanse. Faktorska analiza podataka o mečevima je produkovala faktorsku strukturu sa šest fundamentalnih dimenzija koje su interpretirane kao: Faktor uspešnosti igrača u meču, Faktor trajanja meča, Faktor morfoloških dimenzionalnosti, Faktor efikasnosti igrača u odbrani, Faktor efikasnosti igrača u kontranapadu i Faktor efikasnosti servisa u meču.

Ključne reči: Olimpijske igre u Pekingu / tehničko-taktička aktivnost / faktorski model.

Uvod

U sistematskom trenažnom procesu kojem se podvrgavaju igrači stonog tenisa, osnovu za planiranje i programiranje trenažnog rada predstavlja analiza takmičarske aktivnosti. Na taj način se dobijaju objektivne informacije o zastupljenosti i efikasnosti izvođenja osnovnih tehničko-taktičkih elemenata tokom stono-teniske igre. Na osnovu ovih podataka i njihove analize mogu se identifikovati značajne smernice za sprovođenje inicijalne i etapne selekcije u stono-teniskom sportu, ali i informacije na osnovu kojih je moguće racionalno planirati i programirati trenažni proces. Osnov za takav pristup treningu treba da budu *modelske karakteristike* vrhunskih igrača stonog tenisa, koje u ovom trenutku nisu poznate. Ovaj zahtev je dodatno usložen nepoznavanjem strukture prostora u kojem se ispoljavaju tehničko-taktički elementi tokom igre.

Zbog toga su ciljevi istraživanja identifikovani kao potreba za eksploracijom strukture tehničko-taktičkih aktivnosti vrhunskih igrača u svetu. Naime, virtuelno beskonačan broj različitih načina izvođenja tehničko-taktičkih elemenata, koje koriste vrhunski igrači stonog tenisa u svetu, sasvim sigurno može da se opiše preko ograničenog skupa fundamentalnih sposobnosti, koje je bilo potrebno, odgovarajućom metodologijom, identifikovati. Identifikacija latentnih dimenzija odgovornih za varijabilitet koji se registruje u posmatranim tehničko-taktičkim elementima, predstavljala je osnovni zadatak istraživanja. U tom smislu je u istraživanju primenjen metodološki aparat primeren potrebi egzaktno eksploracije latentne strukture, koji pripada statističkim multivarijantnim tehnikama i procedurama.

U radovima istraživača koji su analizirali tehničko-taktičku aktivnost igrača stonog tenisa u uslovima takmičenja preovlađuje deskripcija nastupa sportista stono-tenisera na velikim takmičenjima - Olimpijskim igrama i drugim velikim međunarodnim turnirima (Cai, 1996). Tako se u analizi ženskih singlova na 43. svetskom prvenstvu u stonom tenisu ukazuje na superiornost kineske ženske reprezentacije, kako u tehničko-taktičkom smislu, tako i na planu mentalnih kvaliteta koji se poboljšavaju iz dana u dan. Na istom takmičenju je urađena i komparativna analiza kineskih i evropskih igrača koji su nastupili u takmičenju parova (Tang, 1997). Istaknuto je da je tehnika u zauzimanju položaja za napad servisom, kao i za odbranu od servisa, glavni faktor od uticaja na uspešnost u igri. Analizirana je i individualna tehnika vrhunskih igrača - Seungmina tokom završnog olimpijskog turnira na 28. olimpijskim igrama održanim u Atini (Hao et al., 2007). Analiza je obuhvatila polufinalne i finalne mečeve, a primenjene su metode dokumentarnog pregleda, video opservacije, izračunavanje trofaznog indeksa i matematičko statističke tehnike opisa tehničko-taktičke aktivnosti.

Vrlo su malobrojna istraživanja tehničko-taktičkih elemenata vrhunskih igrača stonog tenisa u koja svakako spada istraživanje Zanga (Zhang, 2006) u kojem se uspeh kineskih stono-tenisera prvenstveno pripisuje trenažnom usavršavanju taktičkih kvaliteta igrača. Trenažni zadaci se pažljivo kreiraju na osnovu kvantitativnih pokazatelja do kojih se dolazi naučno zasnovanim analizama, što su autori ilustrovali opisom takmičarskog ponašanja igrača i igračica tri nivoa majstorstva. U ove radove svakako treba uvrstiti i analize koje se sprovode na populaciji kineskih juniora stono-tenisera (Li et al., 2000).

Za ovo istraživanje mogu biti od značaja rezultati analize faktora koji utiču na pobedu, odnosno na poraz u stono-teniskim mečevima (Wu et al., 1998). Autori u zaključku analize koja je obuhvatila vrhunske igrače stonog tenisa ističu da se vrhunski sportski rezultati u ovom sportu mogu postići samo uz izraženu izvanrednu voljnu komponentu koju treba da prate i ostale psihološke osobine u kombinaciji sa odličnom tehnikom, taktičkom i fizičkom pripremom. Interesantno je i istraživanje koje je za predmet imalo identifikaciju najznačajnijih faktora od uticaja na efikasno igranje stonog tenisa (Wu and Zhang, 1993). Autori su identifikovali brzinu i spin kao ključne faktore za koje su u istraživanju dokazali da se nalaze u visoko značajnim funkcionalnim vezama. Za potrebe istraživanja je korišćen instrumentarijum, koji je posebno razvijen za kvantitativno određivanje relevantnih parametara spina, čijom se primenom došlo do interesantnih podataka o povezanosti nivoa sportskog majstorstva igrača, fizikalnih svojstava reketa, tehnike pokreta šake i intenziteta spina (Wu et al., 1998).

Generalizacija i fuzija faktora koji utiču na efikasnost igrača stonog tenisa u uslovima sportskog nadmetanja je bila predmet istraživanja koje je sproveo Raz (Raz, 1991). Autor ističe potrebu da se razvojem individualnih metoda igrač dovede u stanje koje maksimizira njegove igračke potencijale.

Materijal i metode

Istraživanje je koncipirano kao opservaciona, eksplorativna, *ex post facto* studija, koja ima za cilj ispitivanje strukture prostora u kojem se manifestuje tehničko-taktička aktivnost vrhunskih igrača stonog tenisa u uslovima sportskog nadmetanja.

Iz populacije vrhunskih igrača stonog tenisa za potrebe istraživanja posmatran je uzorak ispitanika koji obuhvata igrače učesnike završnog turnira na Olimpijskim igrama održanim u Pekingu 2008. godine. Efektiv uzorka ispitanika iznosi 77 igrača, što uz činjenicu da se radi

o najboljim igračima sveta, predstavlja uzorak na kojem je moguće primeniti odgovarajuće statističke procedure.

Uzorak je formiran od 77 mečeva, što u statističkim okvirima predstavlja veliki uzorak potreban za relevantno zaključivanje. Svaki od mečeva je analiziran dva puta, odnosno za pobjednika i za poraženog, što čini efektiv uzorka mečeva od 154 jedinice posmatranja.

Za svakog od takmičara su se prikupili podaci u sledećim varijablama: Država iz koje igrač dolazi-PSTATE, Starost igrača -PAGE, Telesna masa igrača-PBM, Telesna visina igrača-PBH, Indeks telesne mase igrača-PBMI, Dominantna ruka igrača-PDH, Broj odigranih mečeva igrača-PNOMATCHS, Broj odigranih setova igrača-PNOGAMES, Konačan plasman igrača - rang-PPLACER i Kategorija igrača-PCAT

Analizirani mečevi su bili opisani preko sledećih varijabli: Ishod meča-MRESULT, Kolo takmičenja-MROUND, Broj setova u meču-MNOGAMES, Trajanje meča-MTIME, Osvojeno poena u meču-MPTS, Ukupno osvojeno poena servisom u meču-MSERVICE, Procenat osvojenih poena servisom u meču-MSERVICE%, Ukupno osvojeno poena trećom loptom¹ u meču-M3BALL, Procenat osvojenih poena trećom loptom u meču-M3BALL%, Ukupno osvojeno poena napadom² u meču-MATTACKING, Procenat osvojenih poena napadom u meču-MATTACKING%, Ukupno osvojeno poena odabranom u meču-MDEFENDING, Procenat osvojenih poena odabranom u meču-MDEFENDING%, Ukupno osvojeno poena protivnapadom u meču-MCTRATTACKING, Procenat osvojenih poena protivnapadom u meču-MCTRATTACKING%, Ukupno osvojeno poena na ostali način u meču-MOTHER i Procenat osvojenih poena na ostali način u meču-MOTHER%

Svi prikupljeni podaci su se analizirali u skladu sa metodologijom statističkih analiza potrebnom za donošenje relevantnih sudova o postavljenim hipotezama istraživanja.

Statistička obrada je obuhvatila: deskriptivnu statističku analizu, analizu kvantitativnih razlika, korelacionu analizu i multivarijantnu analizu.

Rezultati i diskusija

Tabela 1. Aigen vrednosti

Vrednost	Aigen vrednosti			
	Aigen	% Ukupno var.	Kumul. Aigen	Kumul.%
1	3.555291	22.22057	3.55529	22.22057
2	2.692100	16.82563	6.24739	39.04619
3	2.019984	12.62490	8.26737	51.67109
4	1.441921	9.01201	9.70930	60.68310
5	1.357672	8.48545	11.06697	69.16855
6	1.087576	6.79735	12.15454	75.96590

¹ Izraz koji se koristi za opisivanje aktivnosti igrača koji servira, a koji često dobija poen tzv. trećom lopticom, gde je servis prva loptica, a vraćanje servisa druga loptica.

² Poen dobijen napadom - žestokim udarcem, top spinom, agresivnim blokom i sl.

Tabela 2. Faktorska opterećenja

Promenljiva	Faktorska opterećenja - normalizovani varimax					
	Faktor 1	Faktor 2	Faktor 3	Faktor 4	Faktor 5	Faktor 6
MRESULT	0.559738	0.043839	-0.172062	0.406121	0.048737	0.353401
MROUND	-0.706194	0.009909	-0.123921	0.343254	0.077410	0.265567
MNOGAMES	-0.199139	0.839389	0.009372	0.291993	-0.212467	0.145371
MTIME	0.040351	0.857774	0.168898	0.125863	-0.221481	0.069532
MSERVICE	-0.129454	0.232249	-0.291623	0.428373	0.031862	0.520290
M3BALL	-0.044935	-0.010332	0.047909	-0.007092	-0.071928	0.862389
MATTACKING	0.158826	0.836666	-0.082284	-0.161599	0.184978	-0.038974
MDEFENDING	-0.069100	0.123396	0.167368	0.861295	0.040607	-0.005679
MCTRATTACKING	0.155259	0.022564	0.111560	0.005380	-0.847469	-0.022327
MOTHER	0.012286	0.108838	-0.084500	-0.036633	-0.770182	0.040540
PAGE	0.186961	0.219639	0.342382	-0.382833	0.141163	0.434434
PBM	-0.147022	-0.051734	0.900130	0.095835	0.003849	0.020265
PBH	0.033275	0.109283	0.896346	-0.015178	-0.033385	-0.025453
PNOMATCHS	0.938130	-0.081900	-0.042796	0.006328	-0.072801	0.035904
PNOGAMES	0.902600	0.082250	-0.042712	0.041437	-0.058435	0.086262
PPLACER	-0.878287	-0.035501	0.025189	0.139078	0.046936	0.111812

Pored varijable Indeksa telesne mase, u ovoj analizi su isključene varijable koje predstavljaju zbirne pokazatelje, kakva je varijabla Osvojeno poena u meču, i relativni pokazatelji kakvu prirodu imaju sve procentualno iskazane varijable. Njihovo uključivanje u analizu bi izazvalo kolabiranje korelacione matrice u postupku njene transformacije, što bi onemogućilo dalju analizu.

Faktorska analiza je sprovedena u manifestnom prostoru kojeg definiše 16 varijabli istraživanja. Rezultati ukazuju na realnu zasnovanost latentne strukture prostora kojeg određuje 6 fundamentalnih dimenzija (Tabela 1.). Ovakav model je opisivao 75.9659% ukupno registrovane varijanse.

U modelu latentnih dimenzija analiziranog prostora 1. ekstrahovani Varimax faktor je crpio 22.22057% ukupno registrovane varijanse. Ovaj faktor je statistički značajno saturirao 5 analiziranih manifestnih varijabli (Tabela 2.). Salijentnim vrednostima na ovoj latentnoj dimenziji projektovale su se sledeće varijable:

- Broj odigranih mečeva igrača - PNOMATCHS (0.93813)
- Broj odigranih setova igrača - PNOGAMES (0.9026)
- Konačan plasman igrača - rang - PPLACER (-0.878287)
- Kolo takmičenja - MROUND (-0.706194)
- Ishod meča - MRESULT (0.559738)

Struktura prvog ekstrahovanog Varimax faktora ukazuje na logičke odnose varijabli koji su konzistentni i logički pozitivni, tako da se ova latentna dimenzija može interpretirati kao Faktor uspešnosti igrača.

Daljom analizom projekcija varijabli koje su bile saturirane ovim faktorom ispod praga statističke značajnosti, dolazi se do zaključka da uspešnost igrača prikazuje tendenciju vezivanja sa pokazateljima efikasnosti pri servisu, u napadu i kontranapadu. Od interesa za dalju analizu je i tendencija povezivanja uspešnosti igrača sa starijim uzrastom, što govori u prilog značaju iskustva, ali i sa manje izraženom telesnom masom, što verovatno govori u prilog intenzivnijim sportskim i trenažnim opterećenjima kod najuspešnijih takmičara.

U modelu latentnih dimenzija analiziranog prostora 2. ekstrahovani Varimax faktor je crpio 16.82563% ukupno registrovane varijanse. Ovaj faktor je statistički značajno saturirao 3 analizirane manifestne varijable (Tabela 2.). Salijentnim vrednostima na ovoj latentnoj dimenziji projektovale su se sledeće varijable:

- Trajanje meča - MTIME (0.857774)
- Broj setova u meču - MNOGAMES (0.839389)
- Ukupno osvojeno poena napadom u meču - MATTACKING (0.836666)

Priroda vodećih varijabli koje salijentnim projekcijama saturira drugi ekstrahovani Varimax faktor dozvoljava da se interpretira kao Faktor trajanja meča. Od interesa za analizu je činjenica da više skorove na ovom faktoru, odnosno duže trajanje meča, imaju igrači koji više poena osvajaju napadom.

U modelu latentnih dimenzija analiziranog prostora 3. ekstrahovani Varimax faktor je crpio 12.6249% ukupno registrovane varijanse. Ovaj faktor je statistički značajno saturirao 3 analizirane manifestne varijable (Tabela 2.). Salijentnim vrednostima na ovoj latentnoj dimenziji projektovale su se sledeće varijable:

- Telesna masa igrača - PBM (0.90013)
- Telesna visina igrača - PBH (0.896346)

Pored navedenih varijabli na ovom faktoru se projektovala nesalijentnom, ali još uvek statistički značajnom vrednošću i varijabla Starost igrača - PAGE (0.342382)

Struktura i relacije između varijabli saturiranih trećim ekstrahovanim Varimax faktorom dozvoljavaju da se zaključuje kako se radi o Faktoru morfoloških dimenzionalnosti.

Analiza relacija ovog faktora sa varijablama tehničko taktičke efikasnosti govori o tendenciji da se igrači sa nižim skorovima na ovom faktoru odlikuju većom verovatnoćom osvajanja meča i većom efikasnošću u postizanju poena servisom, ali i sa smanjenom efikasnošću kod postizanja poena elementima odbrane.

U modelu latentnih dimenzija analiziranog prostora 4. ekstrahovani Varimax faktor je crpio 9.01201% ukupno registrovane varijanse. Ovaj faktor je statistički značajno saturirao 5 analiziranih manifestnih varijabli (Tabela 2.). Salijentnom vrednošću na ovoj latentnoj dimenziji projektovale se varijabla Ukupno osvojeno poena odbranom u meču - MDEFENDING (0.861295).

Pored navedene varijable na ovom faktoru su se projektovale nesalijentnim, ali još uvek statistički značajnim vrednostima i sledeće varijable:

- Ukupno osvojeno poena servisom u meču - MSERVICE (0.428373)
- Ishod meča - MRESULT (0.406121)
- Starost igrača - PAGE (-0.382833)
- Kolo takmičenja - MROUND (0.343254)

Vodeća varijabla tehničko taktičke efikasnosti salijentno saturirana četvrtim Varimax faktorom opredeljuje njegovu prirodu, te se zbog toga ova latentna dimenzija definiše kao Faktor efikasnosti igrača u odbrani.

Interesantne su funkcionalne veze koje je moguće sagledati iz strukture faktora. Naime, igrači koji imaju efikasnu odbranu imaju i visoku verovatnoću da će biti i efikasniji u servisu. Sve ovo prati i mlađi hronološki uzrast, ali i veća verovatnoća osvajanja meča.

U modelu latentnih dimenzija analiziranog prostora 5. ekstrahovani Varimax faktor je crpio 8.48545% ukupno registrovane varijanse. Ovaj faktor je statistički značajno saturirao 2 analizirane manifestne varijable (Tabela 2.). Salijentnim vrednostima na ovoj latentnoj dimenziji projektovale su se sledeće varijable:

- Ukupno osvojeno poena protivnapadom u meču - MCTRATTACKING (-0.847469)
- Ukupno osvojeno poena na ostali način u meču - MOTHER (-0.770182)

Struktura petog ekstrahovanog Varimax faktora je definisana brojem osvojenih poena korišćenje top spina, ili žestokim udarcem iz pozadine, odnosno poena osvojenih igrom izbliza, neiznuđenom greškom i sl. Priroda vodeće tehničko taktičke varijable koja se projektuje na ovoj latentnoj dimenziji dozvoljava da se definiše kao Faktor efikasnosti igrača u kontranapadu.

Igrači sa izraženim skorovima na ovom faktoru su hronološki mlađi igrači čiji mečevi imaju veći broj setova i koji sledstveno tome i duže traju.

U modelu latentnih dimenzija analiziranog prostora 6. ekstrahovani Varimax faktor je crpio 6.79735% ukupno registrovane varijanse. Ovaj faktor je statistički značajno saturirao 4 analizirane manifestne varijable (Tabela 2.). Salijentnim vrednostima na ovoj latentnoj dimenziji projektovale su se sledeće varijable:

- Ukupno osvojeno poena trećom loptom u meču - M3BALL (0.862389)
- Ukupno osvojeno poena servisom u meču - MSERVICE (0.52029)
- Starost igrača - PAGE (0.434434)

Pored navedenih varijabli na ovom faktoru se projektovala nesalijentnom, ali još uvek statistički značajnom vrednošću i varijabla Ishod meča - MRESULT (0.353401).

Prve dve varijable koje salijentnim projekcijama saturira šesti ekstrahovani Varimax faktor se nalaze u visokoj funkcionalnoj vezi. Naime, priroda ovih varijabli zahteva njihovo temeljitije razmatranje, jer je servis prvi udarac u setu, kojim se u značajnoj meri opredeljuje razvoj borbe koja sledi.

Efikasnost servisa se ogleda u prvom redu kroz direktno postizanje poena, ali i kroz dovođenje protivnika u podređen položaj, što se najčešće manifestuje kroz poen postignut trećom loptom. Kod analize prirode ovog faktora treba imati u vidu i činjenicu da se varijabla efikasnosti servisa relativno visokim projekcijama povezala sa još tri latentne dimenzije, što za posledicu ima i smanjenje njene projekcije na faktoru koji se interpretira. Navedeno upućuje na zaključak da se radi o Faktoru efikasnosti servisa.

Igrači sa višim skorovima na ovom faktoru su i stariji igrači i imaju i povećanu verovatnoći pobeđivanja u meču.

Zaključak

U istraživanju koje je imalo karakter opservacione, eksplorativne *ex post facto* studije ispitivana je struktura prostora u kojem se manifestuje tehničko-taktička aktivnost vrhunskih igrača stonog tenisa u uslovima sportskog nadmetanja.

Istraživanje je sprovedeno na uzorku od 77 igrača koji su učestvovali u završnom turniru stonoteniskog nadmetanja na Olimpijskim igrama održanim u Pekingju 2008. godine. Uzorak analiziranih mečeva je obuhvatao 154 jedinice posmatranja, odnosno 846 analiziranih setova. Svaki od igrača je bio opisan preko 9 varijabli. Tehničko taktička aktivnost igrača u mečevima i setovima bila je opisana preko skupa od 17 varijabli.

U pogledu osnovnog cilja istraživanja kojim je bilo zadato da se na osnovu izabranih tehničko-taktičkih elemenata, koje izvode vrhunski igrači stonog tenisa u uslovima takmičenja, obezbedi uvid u strukturu prostora tehničko-taktičkih aktivnosti, zaključeno je da je u potpunosti postignut.

Naime, faktorska analiza podataka o mečevima je produkovala faktorsku strukturu sa šest fundamentalnih dimenzija koje su interpretirane kao:

- Faktor uspešnosti igrača u meču,
- Faktor trajanja meča,
- Faktor morfoloških dimenzionalnosti,
- Faktor efikasnosti igrača u odbrani,

- Faktor efikasnosti igrača u kontranapadu i
- Faktor efikasnosti servisa u meču.

Činjenica da je istraživanje obuhvatilo sve igrače i sve mečeve završnog olimpijskog turnira u stonom tenisu na Olimpijskim igrama održanim 2008. godine u Pekingu, daje ovoj studiji poseban značaj. Praktično se može govoriti o istraživanju koje nije sprovedeno na uzorku, nego zaista na populaciji najboljih igrača sveta. Iako je izbor varijabli bio diktiran dostupnim statistikama, dobijeni rezultati govore u prilog tvrdnji da je tehničko taktička aktivnost igrača bila adekvatno pokrivena uz minimalne gubitke u validnosti.

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ENTROPIJA I GRAVITACIONA SILA U SISTEMU KIČMENOG STUBA

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Apstrakt

Razvoj kičmenog stuba podleže istim zakonima koji su uticali na razvoj Vaseljene. Radi sticanja drugačijeg ugla tj., pogleda kroz kliničku prizmu, smatramo da je potrebno izaći izvan svakodnevnih okvira našeg šablonskih razmišljanja. Promene na makro sistemima su reflektujuće reakcije različitih procesa na mikro sistemima. Da bi imali tu moć promene posmatranja ugla neophodno je izvesti „mentalni kvantni skok“ iz jednog mentalnog prostora u drugi. Ovaj rad predstavlja hipotetski i sasvim drugačiji pogled na već do sada poznate procese koji se odvijaju u sistemu kičme a posledično su uslovljeni silama različitog porekla i magnitude.

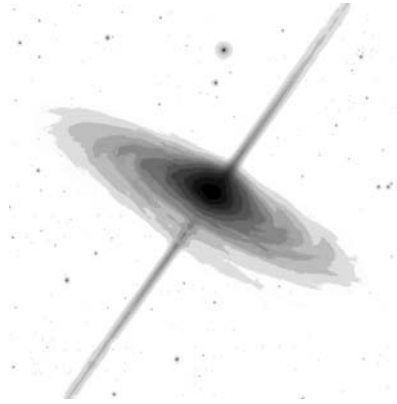
Ključne reči: kičmeni stub / makro sistem / mikro sistem / gravitaciona sila

Uvod

Entropija (grč. *έντροπή*, “obrt ka unutra”), uveo Rudolf Julijus Emanuel Klauzijus 1865; veličina stanja koja se može posmatrati kao mera za “vezanu” energiju nekog zatvorenog materijalnog sistema, tj. za energiju koja se, nasuprot “slobodnoj”, više ne može pretvoriti u rad. Suprotni pojam je ektropija. Od Bolcmana (*Predavanja o principima mehanike*, 1897. do 1904) entropijom se u smislu “kinetičke teorije gasova” označava toplotni sadržaj nekog sistema kao energija kretanja njegovih molekula.

Entropija je težnja sistema da spontano pređe u stanje veće neuređenosti, dakle, entropija je merilo neuređenosti sistema. Najveća uređenost sistema je temperatura apsolutna nula. Pošto ona ne može da se postigne, prema Trećem principu termodinamike (Nernstova teorema) uzima se da entropija asimptotski teži nuli kada temperatura sistema prilazi apsolutnoj nuli. Svi spontani procesi (razvoj organizma u celosti) se odigravaju u smeru porasta entropije.

Uloga entropije i gravitacione sile u spinalnom sistemu



Slika 1. Gravitaciono dejstvo crne rupe i spiralni vir pomoću kojeg usisava svemirska tela

Prema drugom zakonu termodinamike, entropija zatvorenog sistema može samo rasti do maksimuma ili ostati konstantna. To znači da sistem postaje 'neuređeniji' s protokom vremena i sve manje koristan i stabilan s obzirom na izvlačenje korisnog rada iz sistema, tj. na pravilnost funkcionisanja kičmenog stuba u celosti.

Entropija (E_{nt}) kao mera tj. količina neuređenosti sistema, se može shodno gore navedenim razmatranjima posmatrati kao težnja tela ili sistema da se razvija i prelazi u novo više stanje neuređenosti. Bez nje svakako da nema ni razvoja, niti formiranja života, planeta, galaksija, pa ni spinalnog sistema tj. kičmenog stuba. S druge strane, ako se spinalni sistem razvija bez kontrole odnosno, ako se entropija veoma brzo odvija (nekontrolisani proces pri čemu je $G_f \ll E_{nt}$), tada sasvim izvesna mogućnost da će se formirati spinalni sistem sa poremećajima i deformitetima. Faktor koji u najvećoj mери kontroliše entropiju, je **gravitaciona sila** (G_f). Bez njenog dejstva, entropija bi u potpunosti „uništila“ svaku strukturu, ali i obrnuto.

Stoga možemo pretpostaviti, da su osnovni spinalni poremećaji: kifoza, lordoza i skolioza, svojevrsni oblici nekontrolisane entropije.

Da preciziramo, kifoza i lordoza su entropije u sagitalnoj ili 2D ravni, dok je skolioza neuređeni sistem u 3D ravni i predstavlja jedan od najtežih oblika spinalnih deformiteta tj., specifičnog oblika entropije. Skolioze se u gruboj podeli dele na funkcionalne i strukturalne tipove. Shodno toj podeli i entropije možemo slično klasifikovati. Funkcionalne skolioze su spinalni sistemi manje neuređenosti, a strukturalne skolioze predstavljaju entropije visokog stepena.

Normalan razvoj čovekovog organizma a samim tim i kičmenog stuba, je proces usklađivanja međusobnog dejstva (ravnoteže) gravitacione sile i entropije. U principu, normalan rast i razvoj spinalnog sistema tj. njegovu težnju za razvojem, „kontrolise“ gravitaciona sila koja po svojoj prirodi teži da sve čestice „uvuče“ u centar strukture i time kontroliše nivo „ne – uređenosti“ sistema.

Bez suprotstavljene sile, gravitacija bi brzo sažela koštanu masu npr. pršljensko telo u „crnu rupu“ malog prečnika. U tom kontekstu, pojavu hemivertebre možemo posmatrati kao proizvod dejstva jake gravitacione sile koju entropija nije mogla da savlada u potpunosti. Ovakav deformitet predstavlja neravnotežu između gravitacione sile i entropije u korist prve.

Međutim, kod normalnog razvoja pršljenkog tela, pritisak koji deluje ka spolja i potire gravitacionu silu, sprečava kolaps i tako održava telo u normalnim morfo-funkcionalnim uslovima.

Pritisak koji „spasava“ pršljensko telo od sopstvenog kolapsa, vodi poreklo od entropije osteogeneričkih sila i procesa¹, koje se odvijaju unutar ove strukture uzrokujući kretanje čestica unutar jezgra tela sa tendencijom udaljavanja od centra (sa minimalni nivoom entropije), održavajući navedenu strukturu u ravnoteži.

Ove reakcije proizvode energiju potrebnu za rast entropije kao i energiju za savladavanje gravitacione sile. Rast i razvoj pršljenkog tela zahteva veliku količinu energije kako bi se suprotstavile gravitacionoj sili i omogućile nesmetan razvoj navedenoj strukturi. Pored ove, sile drugog porekla (kompresione, torzione, smicajne) takođe ometaju pravilan razvoj pršljena i ostalih tela spinalnog sistema.

Ali, mi prvenstveno govorimo o kontrolisanoj ili pozitivnoj entropiji (kada se spinalno telo², razvija u zdravim okvirima) odnosno, kada gravitaciona sila prati porast entropije pri čemu se neugrožava nivo uredenosti sistema.

Kad govorimo o gore navedenim silama, mi polazimo od dve pretpostavke:

- Prvo, u kojoj meri gravitaciona sila savladava entropiju, u toj meri će i entropija biti izražena i,
- Drugo: gravitaciona sila srazmerno utiče na ispoljavanje entropije i obrnuto.

Podela entropije u spinalnom sistemu

Pre svega, entropija prema svojoj prirodi ispoljavanja može imati pozitivno i negativno dejstvo na spinalni sistem.

Ako pretpostavimo da nekontrolisana ili negativna entropija³ sprečava pravilan razvoj spinalnog sistema (uravnotežen odnos predstavlja stanje kada je $G_f \approx E_{nt}$ – pozitivno dejstvo entropije), tada možemo u načelu prihvatiti sledeće:

Entropije niskog stepena neuređenosti omogućuju pravilan razvoj spinalnog sistema u celosti, bez štetnih posledica po strukturu i funkcionalnost kičme; Entropije ovog stepena su reduktibilne i uspešno se kontrolišu redovnim preventivnim vežbanjem. Međutim, u slučaju da ustanovimo da je entropija nekontrolisana i ugrožava pravilan razvoj spinalnog sistema ($G_f < E_{nt}$ – negativno dejstvo entropije), tada govorimo o sledećim strukturalnim i funkcionalnim poremećajima i predložimo dve podele:

- Entropije slabog i umerenog stepena uzrokuju: nagli rast i razvoj kičmenog stuba, stvarajući (omogućavajući) uslove za razvoj opšteg ili lokalnog mišićnog disbalansa između agonista i antagonista koji imaju za posledicu formiranje kifotičnog, lordotičnog i blažeg oblika skioičnog tipa spinalnog sistema⁴ (poremećaj u 2D i 3D ravni);
- statičku nestabilnost spinalnog sistema u celosti ili pojedinih spinalnih jedinica, ugrožavajući pravilno funkcionisanje i morfološku strukturu u manjoj meri. Kontrola i reduktibilnost ovakvih neuređenih sistema je moguća redovnim korektivnim programima specifične usmerenosti u većoj ili potpunoj meri (u zavisnosti od stepena neuređenosti spinalnog sistema⁵). Ovakav oblik entropije se ispoljava uglavnom u predpubertetskom i pubertetskom periodu.

¹ Osteogeneričke sile – procesi razvoja koštane srži i koštane mase u celosti.

² Spinalna tela su: intervertebralni disk, epifizna ploča i pršljensko telo.

³ Neuravnotežen odnos predstavlja stanje kada je $G_f < E_{nt}$ – negativno dejstvo entropije i vice versa.

⁴ Spinalni sistem se sastoji od aktivne, pasivne i CNS komponente (Panjabi, 1992).

⁵ Stepene neuređenosti spinalnog sistema je nivo entropije u CNS, pasivnoj i aktivnoj komponenti, odnosno njihova pojedinačna i grupna neuređenost sistema.

- Entropije velikog stepena, uzrokuju: Nekontrolisani rast, razvoj i ponašanje spinalnog sistema omogućavajući razvoj opšteg ili lokalnog mišićnog disbalansa između agonista i antagonista kičmenog stuba i nastanak težih oblika kifotičnog, lordotičnog i skoliotičnog tipa kičmenog stuba (poremećaj i deformiteti u 2D i 3D ravni). Ovakve spinalne jedinice su u potpunosti nestabilne a njihova funkcionalnost je drastično smanjena u odnosu na normalno stanje. Kod ovakvih neuređenih sistema, javlja se formiranje spinalnih deformiteta i poremećaja bez mogućnosti korekcije sistemom vežbi i ortopedskih pomagala. Entropije ovog tipa se mogu redukovati isključivo operativnim putem u manjoj, većoj ili u potpunoj meri. Entropije poput ove se kao i prethodno navedene, ispoljavaju uglavnom u dečijem i predpubertetskom periodu.

Kompresione sile i entropija intervertebralnog diska (discus intervertebralis)

Sa morfo-funkcionalnog aspekta, intervertebralni disk je specifično spinalno telo koje je svakodnevno pod uticajem kompresione, torziona i smicajne sile u manjem ili većem obliku, i kao takvo telo ima višestruku ulogu u spinalnom sistemu. U narednom delu teksta objasnićemo vezu između kompresione sile i entropije IVD.

Kad je kompresiona sila minimalna, možemo reći da postoji **pozitivan efekat** kompresione sile i entropije na IVD koji se ogleda u sledećem:

- Kad su kompresione sile niskog intenziteta, shodno tome entropije imaju nizak stepen neuređenosti i time omogućavaju pravilno i nesmetano funkcionisanje (razvoj) intervertebralnog diska (uravnotežen odnos $C_f \approx E_{nt}$ – pozitivno dejstvo entropije). Navedene sile na ovom nivou izazivaju pozitivne adaptacione promene koje rezultuju pravilnim funkcionisanjem (i razvoju) IVD.

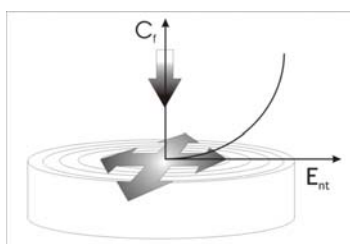
Međutim, povećavanjem intenziteta kompresione sile (C_f), srazmerno tom opterećenju IVD, povećava se i entropija navedenog sistema. U tom slučaju, mi govorimo o negativnom dejstvu kompresione sile koje se ogleda u sledećem:

- Kompresione sile slabog intenziteta uzrokuju stanje nižeg stepena neuređenosti sistema, u kojima se formiraju fibrozne transformacije, delaminacije, mikro pukotine (eng. – cleft formation), male braunove kolorizacije, itd. Uočavaju se početne degenerativne promene⁶ na disku. Neophodno je rasteretiti zahvaćene spinalne jedinice, radi smanjenja entropije. Kod ovako nastalih stanja, neophodno je obezbediti stabilizaciju spinalnog sistema (ili ugrožene spinalne jedinice najčešće na nivou L4 – L5 – S1), konstituisati mišićnu izdržljivost spinalnog sistema, lumbalno – abdominalne regije i pravilni lumbo-pelvični ritam i funkcionalnost.
- Kompresione sile umerenog intenziteta uzrokuju stepen umerene neuređenosti sistema koje karakterišu baldžing stanja sa većim rupturama i delaminacijom anulusa (prouzrokovane torzionom silom) i vidnom migracijom sadržaja jezgra IVD – hernijacije, ka periferiji anulusa fibrosusa tj. ka mestu najmanjeg otpora (uglavnom u posteriorno – lateralnom delu). U ovoj kategoriji su moguće i veće protruzije IVD sa blažim lezijama neuralne strukture (radikulopatije blažeg i umerenog tipa). Vidno uočljive degenerativne promene na disku (rim lezije, radijalne fisure, kalcifikacije velikog tipa, frakture epifizne ploče umerenog tipa itd). U pojedinim slučajevima se preporučuje operativni tretman. Neophodno rasterećenje zahvaćene spinalne jedinice, radi smanjenja entropije. U ovakvim slučajevima, potrebno kao i u prethodnom slučaju obezbediti stabilizaciju spinalnog sistema (ili ugrožene spinalne

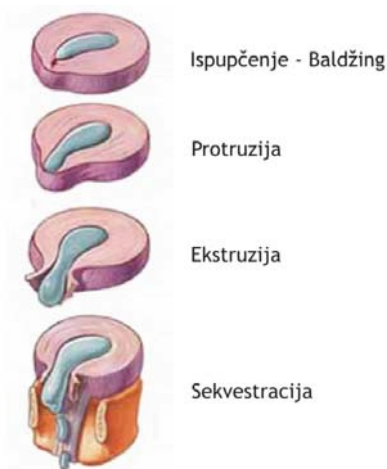
⁶ Degenerativne promene uključuju biohemijske, histološke, metaboličke i funkcionalne promene na IVD.

jedinice najčešće na nivou L4-L5-S1), obezbediti mišićnu izdržljivost spinalnog sistema, lumbalno - abdominalne regije i pravilnu lumbo-pelvičnu funkcionalnost.

- Kompresione sile velikog stepena izazivaju entropije velike neuređenosti i haotičnosti sistema sa masivnim ekstruzijama i sekvestracijama nukleusa IVD u spinalni kanal, narušavanje strukture i funkcionalnosti IVD sa posteriorno – lateralnim i centralnim lezijama neuralne strukture i funkcionalnim ispadima. Ovakvu kliničku sliku obeležava visok nivo ugroženosti spinalne jedinice i njene funkcionalnosti, uslovljen statičkom nestabilnošću i poodmaklim degenerativnim procesima na IVD, spinalnim telima i fasetnim zglobovima i ujedno delimičnom ili opštom telesnom ugroženošću u smislu normalnog lokomotornog funkcionisanja (kretanja). Regulacija (zaustavljanje) ovakvih entropija sa motoričko – funkcionalnim ispadima moguća je samo specijalno dizajniranim vežbama i operativnim putem u posebnim slučajevima.

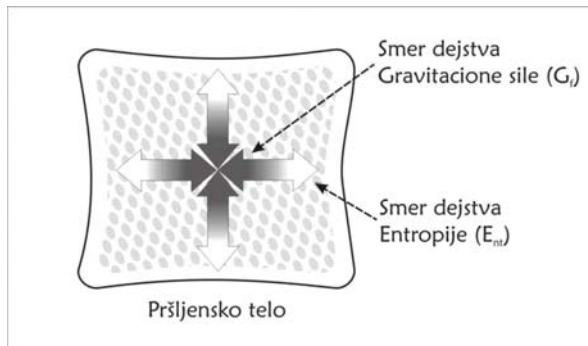


Slika 2. Dejstvo kompresione sile (C_f) na intervertebralni disk stvara novonastalno neuređeno stanje. U zavisnosti od veličine C_f , ispoljiće se i stepen entropije. Ovo upućuje na pretpostavku da veličina entropija sistema (E_{nt}) zavisi veličine kompresione sile (C_f).



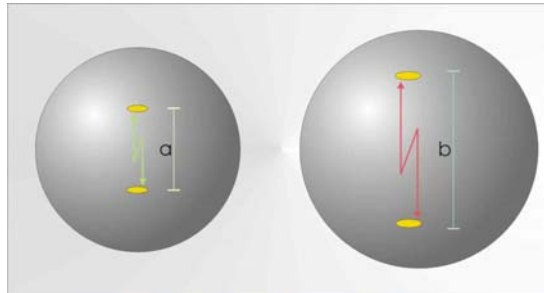
Slika 3. U zavisnosti od veličine C_p ispoljava se i stepen entropije IVD.

Uloga entropije i gravitacione sile na nivou pršljenkog tela (corpus vertebrae)



Slika 4. Večni „rat“ između gravitacione sile i entropije se odigrava ne samo na nivou pršljenkog tela, već i na Suncu. Težnja entropije da savlada gravitacionu silu, omogućava rast pršljenkog tela i razvoj celokupne koštane strukture kičmenog stuba.

Astrofizika je utvrdila da se svemir širi zahvaljujući entropiji, ali i da se galaksije ne šire, već međusobno udaljavaju u tom procesu. Analogno ovoj činjenici, na mikro nivou, možemo konstatovati da se na strukturi kičmenog stuba (mikro svet u odnosu na Vaseljenu i njene procese) odvija potpuno isti scenario.



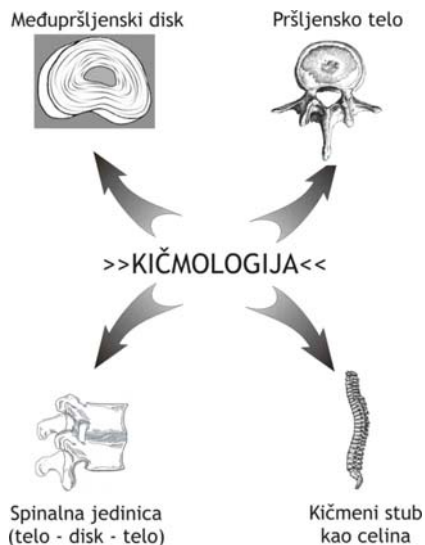
Naime, pršljenska tela (Svemir) rapidno rastu u periodu adolescencije uvećavajući njihovu zapreminu. Shodno promenama u veličini pršljenkog tela, mesta za pripajanje (Galaksije) mišića (dubokog sloja) se udaljavaju. U takvim uslova akceleratnog dejstva imamo nekoliko stadijuma:

- Povećavanje mase i visine pršljenkog tela;
- Privremeno smanjenje volumena mišića dubokog sloja koji su odgovorni za pravilnu statiku posture i njeno pozicioniranje u sistemu prostor-vreme;
- Hipofunkcija muskulature, ligamenata i zglobnih kapsula smislu mogućnosti pružanja reakcije (smanjenje odgovora) na zahteve pomeranja i održavanja kičmenog stuba, stabilnosti zglobova i spinalnih jedinica.

Celokupna biografija kičme („kičmologija“ = patološko – fiziološko – funkcionalni scenario“) odigrava se na četiri značajna nivoa:

- Nivo intervertebralnog diska (IVD),
- Nivo pršljenkog tela (CV),

- Nivo spinalne jedinice⁷ (SpJ) i
- Nivo spinalnog sistema u celosti.



Slika 5. „Kičmologija“ – celokupni patološko – fiziološko – funkcionalni scenario kičmenog stuba se može odigrati na nivou međupršljenskog diska, pršljenskog tela, spinalne jedinice ili kičmenog stuba u celini.

Narušavanje homeostaze bilo kog nivoa, odnosno dela kičme, ugrožava celokupnu strukturu. Ugrožavanje homeostaze može da se odigra u dva osnovna slučaja:

- Iznadne sile velikog intenziteta koje momentalno narušavaju strukturu (sile velike magnitude, različite prirode i porekla) i
- kumulativne sile manjeg intenziteta ali, uz duže vremensko izlaganje, koje u početku nemoraju inicirati negativne efekte na spinalna tela.

Dokle god spinalni sistem raste i razvija, za njega kažemo da je otvorenog tipa. Onog momenta, kad je proces rasta i razvoja završen, tad kažemo da je spinalni sistem ravan, a u trenutku procesa starenja postaje zatvoren.

Periodi rasta, razvoja i starenja kičmenog stuba odvijaju se u više spinalnih dekada.

Pozitivno dejstvo entropije na genuzu morfološkog statusa pršljenskog tela rezultuje u sledećem:

- Entropije niskog stepena omogućavaju pravilan i nesmetan razvoj pršljenskog tela (uravnotežen odnos $G_f \approx E_{nt}$ – pozitivno dejstvo entropije). Udruženim dejstvom gravitacione sile i entropije na ovom nivou izazivaju se adaptacione promene koje rezultuju pravilnim razvojem i funkcionisanjem pršljenskih tela.

Negativno dejstvo aspekt se ogleda u nekontrolisanoj entropiji koju karakteriše smanjena gustina pršljenskog tela i tendencija ka osteoporozu.

Međutim, u slučaju kad je gravitaciona sila veća od dejstva entropije $G_f > E_{nt}$ odigrava se sličan scenario prikazan na slici:

⁷ Spinalna jedinica je sistem sačinjen od dva susedna pršljenska tela međusobno povezana intervertebralnim diskom, sa pratećom ligamentarnom i mišićnom strukturom.



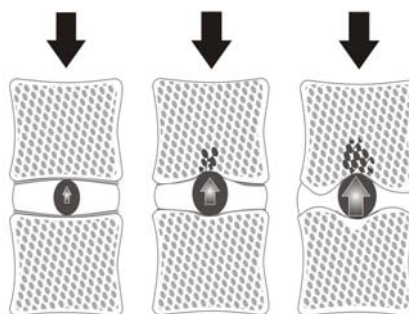
Slika 6. Gravitaciono dejstvo crne rupe „guta“ obližnju zvezdu, zahvaljujuci jakoj sili i time onemogućava putanju (entropiju Svemira) same zvezde. Isti scenario se odvija u procesu razvoja pršljenkog tela pri čemu nastaje hemivertebra kao nepotpuno razvijeno pršljensko telo, spina bifida itd.

Uticaj kompresione sile na entropiju epifizne ploče (hyaline cartilage)

Narušavanje homeostaze bilo kog od gore navedenog nivoa ugrožava celokupnu spinalnu strukturu. Ugrožavanje homeostaze može da se odigra u dva osnovna scenarija (slučaja):

- Iznenaadne i kompresione sile velikog intenziteta koje momentalno narušavaju strukturu (sile velike magnitude i
- kumulativne i kompresione sile malog intenziteta ($C_f \approx E_{nt}$) a dužeg vremenskog izlaganja, koje u početku nemoraju da uzrokuju vidljive i negativne efekte na spinalna tela.

I nivo entropije su frakture epifiznih pločica.



Slika 7. Šematski prikaz ruptуре epifizne ploče (EP) i formiranje Šmorlovog čvora. Usled velike kompresione sile jezgro međupršljenkog diska oštećuje epifiznu ploču i svojom sadržinom prodire u nastalu pukotinu pršljenkog tela formirajući Šmorlov čvor (Schmorl node). Prikaz novonastalog stanja. Entropija slabog stepena neuređenosti (Dejanović & Fratrić, 2007).

Zaključak

Kičma je specifična struktura u lokomotornom sistemu, koji poseduje mogućnost da se samoreguliše i pored velikih trauma i onesposobljenosti. Za njegovo normalno funkcionisanje su potrebni minimalni svakodnevni pozitivni koraci koji čak ne zahtevaju ni velike promene u navikama. Na nama ostaje da shvatimo koliko ćemo produžiti funkcionalnost lokomotornog sistema ako u svakom danu dodamo jednu malu dozu pozitivizma u svakoj dimenziji.

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AKSILOŠKI ASPEKTI NEETIČKOG PONAŠANJA SPORTISTA I NAVIJAČA

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Apstrakt

U ovom tekstu razmatraju se aksiološki aspekti pojava neetičkog ponašanja sportista i navijača. Pojave drastičnog kršenja etičkih kodeksa sportista i moralnih kodeksa navijača, sportskih klubova, sportskih organizacija i sponzora sporta sve više postaju problem koji može, ne samo da ugrozi socijalnu i ekološku sredinu, već i u znatnoj meri utiče na sistem vrednosti sportista i navijača. Kad sportisti i navijači, svojim stavovima i ponašanjem na sportskim priredbama i takmičenjima ne poštuju univerzalne ljudske vrednosti i posebne pozitivne vrednosti koje se sportom održavaju i razvijaju, time ometaju ili onemogućavaju ostvarivanje pozitivnog smera svog smisla života.

Ključne reči: aksiologija / etika / ponašanje sportista / etički kodeks sportista / moralni kodeks navijača / smisao života

Uvod

Svako ima pravo da se bavi sportom i to je aktivnost, odnosno delatnost od posebnog značaja za Republiku Srbiju.

Još iz vremena kada su stari Grci započeli sa olimpijadama kao velikim sportskim takmičenjima, sport je imao za cilj da održava i jača univerzalne ljudske vrednosti: razboritost do ponositosti, skromnost do samokritičnosti, samopoštovanje do častoljubivosti, odmerenost do smirenosti, vernost do iskrenosti; istrajnost i jakost do hrabrosti; pravičnost do pravednosti; uzdržanost do umerenosti; samokontrola do odgovornosti; solidarnost do plemenitosti; poniznost do susretljivosti; pristojnost do stidljivosti, čak i iskrena detinja čednost do ljudske čestitosti i saosećajnosti do čovekoljublja.

Zbog toga i danas sport ima stratešku vrednost i značaj za svako društvo, posebno za psihofizički i duhovni razvoj dece i omladine, tj. za budućnost nacije. "Sport je u Ustavu Republike Srbije definisan kao kategorija od posebnog društvenog interesa i velikim delom se finansira iz budžeta Republike Srbije. Fizička neaktivnost dece, a pogotovo adolescenata, negativno utiče na njihov fizički i duhovni razvoj. Takva situacija ugrožava javno zdravlje, a samim tim i zdravlje pojedinaca, dok istovremeno umanjuje regrutnu bazu za vrhunski sport. Otuda deca u sportu jesu osnovni prioritet Strategije razvoja sporta u Republici Srbiji."¹

Koncept sporta za sve ističe u prvi plan da rekreativni sport mora da karakteriše redovni program vežbanja (ali i primerenog takmičenja) u cilju očuvanja zdravlja i fizičke spremnosti.

¹ Strategiju razvoja sporta u Republici Srbiji za period od 2009. do 2013. godine, *Strategija je objavljena u "Službenom glasniku RS", br. 110/2008 od 2.12.2008. godine.*

Sve je veći broj ljudi kojima sport predstavlja više od borbe za gol, koš, poen, centimetar ili stotinku sekunde. *Rekreativci* uživaju u mnogobrojnim aktivnostima u klubovima, organizovanim grupama ili pojedinačno, a njihov motiv je zdravlje, fizička sposobnost i lično zadovoljstvo. Pobediti sebe, biti aktivan i upoznati se sa svim vrednostima redovne fizičke aktivnosti su sve više opredeljena stotina hiljada ljudi koji pešače, trče, voze bicikl i rolere, plivaju, skijaju, vežbaju, uče određene veštine i td. Među stanovnicima Evropske unije najaktivniji Finci gde se 75% stanovništva bavi sportskom rekreacijom. Slede Šveđani sa 72%, Danci 60%, Irci 53% i Holanđani sa 52%, dok su među najmanje aktivnima Grci sa samo 26%. U Republici Srbiji, Zakonom o sportu² definisana su 22 pojma i sintagme u vezi sa sportom: od sportske aktivnosti³ i sportske delatnosti⁴ do „stručni sportski nadzornik sporta”⁵.

Nigde nije definisana sintagma “sportski navijač” ili “sportska publika” već samo “gledalac”.

Moguće je da se čovek sam bavi sportom, kao što je to slučaj sa fitnessom⁶. Tim terminom iz oblasti sporta označava se čovekov izbor za jednim posebnim načinom života koji podrazumeva vežbanje, pravilnu “sportsku ishranu”, programe psihičkog rasterećenja, relaksaciju, razne estetske programe i sve drugo u vezi sa sportom. Dakle, sport može da bude način života koji na nivou individue ne mora da ima ni sportsku publiku niti sportske navijače.

Kada se organizuju sportska takmičenja i sportske manifestacije (zajedničkim imenom označavaju se kao “sportske priredbe”), onda se podrazumeva da mora da postoji i publika, tj. “sportski navijači” kao sastavni deo sportskog takmičenja. Novinari često sportske navijače nazivaju i “dvanaestim igračem”, što se odnosi samo na fudbal, gde ima jedanaest igrača, ali se on često upotrebljav i u drugim sportovima bez obzira na broj igrača.

Na sportskim terenima i borilištima širom sveta, pa i u Srbiji, događa se nesportsko ponašanje sportista i nesportsko ponašanje navijača u sportu ili sportske publike, koje može da se okarakterise kao nemoralno, ali i ono koje iz aspekta bezbednosti građana i čovekove okoline postaje destruktivno ponašanje, tj. opasno delovanje koje narušava slobodu i prava građana i oštećuje čovekovu okolinu.

Postoji i „Zakon o sprečavanju nasilja i nedoličnog ponašanja na sportskim priredbama”, koji je donešen radi preventivnog delovanja i smanjenja rizika izbijanja nasilja i nedoličnog ponašanja gledalaca (sportskih navijača) na sportskim priredbama.

² “Sl. glasnik RS”, br. 24/2011 i 99/2011- dr. zakoni.

³ “Sportske aktivnosti jesu svi oblici fizičke i umne aktivnosti koji, kroz neorganizovano ili organizovano učešće, imaju za cilj izražavanje ili poboljšanje fizičke spremnosti i duhovnog blagostanja, stvaranje društvenih odnosa ili postizanje rezultata na takmičenjima svih nivoa”. “Sl. glasnik RS”, br. 24/2011 i 99/2011- dr. zakoni.

⁴ “Sportske delatnosti jesu delatnosti kojima se obezbeđuju uslovi za obavljanje sportskih aktivnosti, odnosno omogućava njihovo obavljanje, a naročito: organizovanje učešća i vođenje sportskih takmičenja, uključujući i međunarodna takmičenja, obučavanje za bavljenje sportskim aktivnostima i planiranje i vođenje sportskih aktivnosti; sportsko suđenje; organizovanje sportskih priprema i sportskih priredaba; obezbeđenje i upravljanje sportskom opremom i objektima; stručno obrazovanje, osposobljavanje, usavršavanje i informisanje u oblasti sporta; naučnoistraživački i istraživačko-razvojni rad u sportu; propaganda i marketing u sportu; savetodavne i stručne usluge u sportu; sportsko posredovanje. “Sl. glasnik RS”, br. 24/2011 i 99/2011- dr. zakoni.

⁵ To je te “Stručni sportski nadzornik sporta jeste lice koje obavlja nadzor nad stručnim radom u oblasti sporta, prati i predlaže mere koje preduzima organizacija u oblasti sporta, odnosno sportski stručnjak radi otklanjanja nedostataka, i o uočenim nedostacima u primeni mera obaveštava ministra nadležnog za sport (u daljem tekstu: ministar). “Sl. glasnik RS”, br. 24/2011 i 99/2011- dr. zakoni.

⁶ Termin je engleskog porekla – *fitness*, koji je nastao je od reči *fit* što znači dobra forma, dobra kondicija (biti zdrav i oran).

⁷ Zakon o sprečavanju nasilja i nedoličnog ponašanja na sportskim priredbama “Službeni glasnik RS”, br. 67/2003 i 90/2007. – prečišćen tekst.

“Ministarstvo (unutrašnjih poslova – primedba autora) pred sportsku priredbu povećanog rizika najmanje 24 časa pre njenog početka vrši pregled sportskog objekta na kome će se sportska priredba održati i ostvaruje uvid u organizacione pripreme. Ako organizator sportske priredbe ne postupi po nalogima Ministarstva, a zbog uočenih nedostataka u značajnoj meri može biti ugrožena bezbednost učesnika sportske priredbe, Ministarstvo može zabraniti održavanje sportske priredbe.” (Član 17 stav 3)⁸

Problemi koji se razmatraju u ovom tekstu su aksiološki⁹ aspekti neetičkog ponašanja sportista i navijača. Aksiološki aspekt podrazumeva preispitivanje sopstvenog i tuđeg ponašanja metodom vrednovanja prema kriterijumu sopstvene vrednosne orijentacije, ali i prema univerzalnim vrednostima sopstvene kulture i iz aspekta univerzalnih vrednosti čovečanstva.

Pitanja koja mogu da se postave u vezi sa navedenom temom mogu da budu i sledeća: da li sport zaista čuva i razvija čovekove univerzalne vrednosti; da li neetičko ponašanje sportista uzrokuje neetičko ponašanje navijača ili je obrnuto, i kako ukazati da nesportsko ponašanje ugrožava smisao života sportista i navijača bez ugrožavanja ljudskih sloboda i čovekovog dostojanstva?

Sport čuva i razvija čovekove univerzalne vrednosti

Prema moralnim kodeksima različitih društava različito se vrednuju, pohvaljuju ili kude, sportska dostignuća sportista. Negde se sportski rezultati minimalizuju do marginalizacije ili ograničavaju iz aspekta polova, a negde se preterano ističu pa se na sportiste vrše ogromni pritisci radi postizanja često nerealno zamišljenih rezultata na redovnim ili, posebno značajnim, velikim svetskim sporskim takmičenjima.

Čovekove univerzalne vrednosti su nastale kao ponašanja u ljudskom društvu čija je svrha¹⁰ da se reguliše sklad između individua, kao svesnih, stvaralačkih i slobodnih bića, i opštih vrednosti i interesa društva kao celine. Procesom socijalizacije, društvene norme se usvajaju do nivoa dobrovoljnog prihvatanja kao uobičajenog ponašanja. Postoje tehničke norme (uređuju ljudsko ponašanje prema prirodi), pravne norme (definisane su zakonima i drugim pravnim aktima), moralne norme (uređuju ljudske međusobne odnose pomoću tradicijskih običaja) i duhovne norme (uređuju ponašanje individua prema duhovnim vrednostima konkretnog društva). Svaka norma ima deo u kojem se propisuje situacija (uslovi i okolnosti) kada ona treba da se primeni, zatim naredbu (dužnost) da se nešto učini ili da se uzdrži od

⁸ Zakon o sprečavanju nasilja i nedoličnog ponašanja na sportskim priredbama “Službeni glasnik RS”, br. 67/2003 i 90/2007. – prečišćen tekst.

⁹ Aksiologija (grč. aksios, vredan, i logos, nauka) – filozofska disciplina čiji su predmeti istraživanja čovekove opšte vrednosti i proces vrednovanja. Posebnim čovekovim vrednostima bave se druge naučne ili filozofske discipline: ekonomskim – ekonomija, moralnim – sociologija i psihologija morala, etičkim – etika, umetničkim – estetika, saznanjnim – gnoseologija itd. Aksiologija proučava spoljašnje i unutrašnje faktore procesa vrednovanja, posebne sisteme vrednosti, odnos normi i vrednosti i vrednosne orijentacije.

¹⁰ Svrha (grč. telos, cilj; lat. finis, svrha) misao o nekom zamišljenom nivou kvantiteta ili vrsti kvaliteta, i o celini sredstava i načina da se u konkretnom vremenu i datim uslovima i okolnostima to može da ostvari voljnim čovekovim delovanjem. Svrha uključuje, dakle, uzrok, motiv, zamišljeno ostvarivanje, ali i prihvatanje zamišljenih posledica delovanja radi ostvarivanja zamišljenog. Od svih živih bića, ovakva racionalnost pripisuje se samo čoveku, a Kant je smatrao da je njegova konačna svrha moralno savršenstvo (dostojanstvo), što znači da čovek drugog čoveka nikad ne sme da koristi kao metod i sredstvo, već uvek kao konačnu svrhu (svrhu svih svrha). Pored svrha iz oblasti proizvodnje (čiji je cilj da zadovolje neku čovekovu materijalnu potrebu) čovek je sposoban da ima i svrhe koje su same sebi cilj i imaju smisla u samoj sebi. To su religija, umetničko stvaralaštvo, sport, rekreacija, hobi, meditacija i kontemplacija i slično.

činjenja i kaznu (vrstu i veličinu odgovornosti) koju prekršilac treba da snosi. Za sportiste i gledaoce na sportskim priredbama (navijače u sportu) posebno je važan moral društva i individualna etika (etičnost), kao regulator ponašanja za sve učesnike u sportu.

Čovekova etička dužnost jeste njegov dobrovoljno usvojen stav, uverenje i opredeljenje da nešto "treba" da uradi, na osnovu svog ličnog etičkog kodeksa (individualni kriterijum za dobro i zlo, dopušteno i nedopušteno), bez obzira na to što to može da bude i na njegovu štetu. Kada čovek sam procenjuje ispunjavanje svojih etičkih dužnosti može da oseti lični ponos (ako je ispravno delovao) ili grižu savesti (kao posledicu etičke samoodgovornosti za nedelovanje ili kršenje ličnog etičkog kodeksa). Obično, ispunjavanje ili propuštanje etičkih dužnosti nije vidljivo drugima (pa prođe bez moralnih nagrada ili kazni), ali to dugo može čoveka da "izjeda iznutra", dok sam ne reši problem sa svojom savešću. Svrha postojanja, kao i kvalitet dobrovoljno preuzetih etičkih dužnosti, govori o čovekovoј čovečnosti, tj. o njegovom shvatanju smisla života.

Iz etičke dužnosti poroizilazi etička samoodgovornost. To je posebna vrsta odgovornosti prema sebi koja nije zasnovana na odgovornosti prema moralnom kodeksu, već prema individualnom etičkom kodeksu (moralna odgovornost je odgovornost prema kolektivu ili društvenoj zajednici), za neko učinjeno ili propušteno delovanje u uslovima i okolnostima (etička dilema), kada je trebala da se isvrši neka etička dužnost (uglavnom je to činjenje što je više moguće dobra i izbegavanje zla).

Posledica etičke samoodgovornosti je pojava griže savesti čak i za ona dela koja nikom nisu poznata, ili nisu ni učinjena nego su samo nameravana (planirana ali neučinjena). Postojanje samoodgovornosti manifestuje se osećanjem stida, neodređenim strahom, gađenjem, prezirom prema sebi, duševnim bolom i željom za samokažnjavanjem.¹¹

Kao što su postojanje broja i vrste moralnih nagrada i moralnih kazni pokazatelj postojanja visokog stepena moralnosti u nekom kolektivu, etička dužnost i etička samoodgovornost (koje po svom kvalitetu mogu da se razlikuju od moralne dužnosti i moralne odgovornosti zbog različitih moralnih normi), su pokazatelj prave čovekove individualne moralnosti, tj. etičnosti, tj. čovečnosti.

Postići sopstvenu etičnost znači imati svoj specifičan kvalitet individualnog kriterijuma vrednovanja učinjenih sopstvenih postupaka (poznatih ili ne društvenoj sredini kojoj ličnost pripada), ili samo zamišljenih ili pokušanih, izgrađen na osnovu sopstvenog shvatanja dobra i zla. Takođe, to je i kvalitet i doslednost ponašanja u skladu sa takvim sopstvenim kriterijumom – etičkim kodeksom. Za razliku od moralnosti, koja se procenjuje i vrednuje od strane grupe, kolektiva ili zajednice kojoj individua pripada, a na osnovu opšteprihvaćenog moralnog kodeksa (pozitivno – moralnim nagradama ili negativno – moralnim kaznama), etičnost je kvalitet, procenjivan na osnovu ličnog etičkog kodeksa (izgrađenog kao etički sistem osloncem na odabrani filozofijski stav), koji može da se razlikuje od moralnog kodeksa društvene sredine. Da postoje ove razlike dokazi su istorijski primeri postojanja ličnosti visoke etičnosti u nemoralnim sredinama, ili ličnosti niske etičnosti u visokomoralnim sredinama. Takođe, promena tradicijski konzervativnih moralnih normi (koje mogu da budu zasnovane na predrasudama ili tabuima) dokazuje da jake ličnosti mogu svojom visokom etičnošću da menjaju moralnost sredine, kao što vredi i obrnuto.

Univerzalni etički kodeks je potreban etici sporta, kao jednoj od primenjenih etika, radi vrednovanja svih slučajeva i pojava požrtvovanja (do nenamernog samožrtvovanja radi sportskih rezultata) u individualnom amaterskom sportu, u profesionalnom sportu i u ekipnim sportovima.

¹¹ Naučno nisu objašnjeni uzroci samoubistva, ali sa izvesnim stepenom značajne verovatnoće može da se pretpostavi da jedan od uzroka može da bude i neizdrživo velika etička odgovornost kao posledica vrlo strogog ličnog etičkog kodeksa (moralni kodeks, obično, zabranjuje samoubistvo).

Sportisti u amaterskom sportu teže postizanju što boljih i vrednijih sportskih rezultata. To se može shvatiti kao ispunjavanje moralne dužnosti prema sebi, prema sportskoj ekipi, sportskoj organizaciji, sponzoru, ili prema društvenoj zajednici.

Međutim, pošto je savremeni profesionalni sport postao i neka vrsta "privredne delatnosti", događa se da profesionalni sportisti kao svoj cilj prvenstveno imaju novac bez obzira na sportske rezultate, mada su te pojave ponekad povezane. Vrhunski sportski rezultati donose više novaca, ali ponekad to nije slučaj, što zavisi od vrste sporta.

Navijači, pored ostalih svojih ličnih i privatnih razloga, imaju za cilj da održavaju i jačaju tj. podržavaju i podstiču do preteranosti požrtvovanost sportista kako bi oni postizali sve bolje i bolje rezultate – sve do svetskih rekorda, olimpijskih medalja itd. Neodmerena i preterana požrtvovanost sportista često dovodi, nažalost, do njihovih neetičkih ponašanja koja se ogledaju u uzimanju nedozvoljenih sredstva (čak i droga) da bi „prečicom“ došli do slave i društvenih časti i počasti. Preterana požrtvovanost navijača (navijačkih grupa i grupa „spotskih huligana“) nažalost, često dovodi do nasilja i nedoličnog ponašanja na sportskim terenima i oko njih, čime se gubi smisao sporta kao plemenite i društveno vredne aktivnosti.

Dakle, sport čuva i razvija univerzalne čovekove vrednosti kod sportista i navijača, ali, ponekad se sportisti nesportski ponašaju radi toga što se više koncentrišu na uspeh koji donosi novac a manje na etiku sporta, tj. sportsko ponašanje kao viteško nadmetanje radi pobeđe ili boljih sportskih rezultata.

Sportski navijači (gledaoci – kako se tretiraju zakonom) na sportskim priredbama i takmičenjima, a tamo su obavezni zbog toga što bez njih sport gubi svoj smisao, ponekad zaborave svoju ulogu publike i započnu sa svojim neetičkim ponašanjem koja za osnovu mogu da imaju mnoge političke, nacionalne, etničke, verske i druge motive, sve do čistog huliganizma.¹²

Neetičko ponašanje u sportu

Zloupotreba sporta je u zamahu. Za potrebe opravdavanja ili dokazivanja isplativosti olimpijada ili velikih svetskih prvenstava u mnogim zemljama sveta zloupotrebljava se etika sporta ili „sportski duh“ pa se „pomoću sporta kao sredstva“ želi ostvariti prestiž na nekim drugim ne-sportskim poljima, kao što su ekonomija (postizanje konkurentne prednosti nad suparničkim proizvođačima sportske opreme) ili politika (prestiž političkih stranaka metodama dokazivanja svoje privrženosti sportu i sportistima, tj. najopštijim pozitivnim društvenim vrednostima).

„Pitanje borbe protiv nasilja u sportu uređeno je Zakonom o sprečavanju nasilja i nedoličnog ponašanja na sportskim priredbama. Postoje realni organizacioni, obrazovni i informativni potencijali za sprečavanje nasilja i nedoličnog ponašanja, međutim, ti potencijali nisu institucionalno adekvatno uobličeni niti iskorišćeni. Kao i u drugim segmentima društva osećaju se problemi nastali usled tranzicije. Sa stanovišta ove strategije, problem nasilja u

¹² Nastanak huligana kao aktera i huliganstva kao nacionalističko-teroristički akt, pojavljuju se u Engleskoj početkom šesdesetih godina prošlog veka, a zatim se disperziraju širom Evrope, posebno u Holandiji, Nemačkoj, Belgiji, Italiji i Španiji. Nastanak huliganstva na sportskim priredbama nije slučajna, niti je odvojen od ukupnog društvenog ponašanja. Kao pokret huliganstvo, je postalo jedano od najjačih vrsta uništenja ljudske svesti. Izvor: Nastanak huliganizma u sportu - Sportska publika - Savremeni sport.com Preuzeto 28.05.2012.

U atmosferi sportskog događaja gde su pojedinci (publika-navilači) relativno anonimni i više - manje neorganizovani, pojedinci veoma lako prihvataju negativan obrazac ponašanja i vrlo brzo od navijača "prerastaju" u huligane. Ono što karakteriše huligane jeste to da su oni nasilni sa niskim stepenom tolerancije, destruktivni, skloni uništavanju tuđe imovine (državne - privatne) bez jasnog razloga i bez ikakve koristi za bilo koga. Izvor: Huliganizam u Srbiji - Sportska publika - Savremeni sport.com Preuzeto 28.05.2012.

sportu, ne posmatra se samo kao nasilje navijača, već i kroz pojavne oblike nasilja koji nastaju u odnosima trener-takmičar, trener-roditelj, roditelj-takmičar, roditelj-trener.“¹³

Iako je Zakon o sportu na gotovo sveobuhvatan način uredio oblast sporta u Republici Srbiji, usled niza političkih, ekonomskih, pravnih i organizacionih promena do kojih je došlo u proteklim godinama, provođenje tog zakona je neefikasno.

Sportske aktivnosoti (sportske priredbe i sportska takmičenja), od lokalnog, preko nacionalnog i evropskog, do svetskog i olimpijskog nadmetanja, prate, nažalost i negativne pojave. To nisu samo “incidenti u sportu”, koji mogu da se opravdavaju preteranim žarom sportske igre i preteranim požrtvovanjem sportista i navijača u sportu, već, sve više postaju pojave koje ugrožavaju čovekovu okolinu i opštu bezbednost društva. U Republici Srbiji je poznat slučaj prebijanja do smrti Brias Tatona navijača francuskog Tuluza. Žrtve sportskih huligana mogu da budu i obični građani i njihova imovina a neretko se oštećuje i čovekova okolina.

Agresivnost je jedna od karakteristika čovekove ličnosti. Relativno je trajna, a iskazuje se primenom nasilnih metoda i sredstava prema drugim ljudima ili prema predmetima i prirodi u nekim situacijama kada treba da se reši neki problem. Individue sklone agresivnom delovanju iskazuju takvo ponašanje, obično, kada su ljute, besne, uvređene ili nepravedno kažnjene prema njihovom shvatanju pravednosti. Međutim, agresivnost sportskih navijača je, iz čista mira, okrenuta prema navijačima suparničkog tima bez ikakvih racionalnih uzroka i motiva. Zbog toga je vrlo teško da se objasni huliganizam u čijoj je osnovi jedna tako plemenita delatnost kao što je sport.

Sportski huliganizam može da se temelji na čovekovom egoizmu¹⁴ ali, nažalost, ponekad on ima uzroke i motive iz oblasti politike ili iz drugih pobuda kao što je nacizam, fašizam, antisemitizam, rasizam, nacionalizam, verski fanatizam itd.

“Autori su se opredelili za termin „huligansko nasilje“ upravo zato da bi uspostavili razliku između huligana i navijača. Smatraju svojim pravom da navijačke grupe koje ispoljavaju ekstremno ponašanje, što redovno uključuje verbalno i fizičko nasilje, nazovu „huliganskim“. Diskutabilno je, pri tom, da li će odluka Ustavnog suda koja se očekuje razrešiti ovu nedoumicu, naročito u okruženju gde se oni koji donose odluke, novinari, „sportski radnici“ i ostali učesnici organizovanja sportskih događaja isuviše često pozivaju na „dvanaestog igrača“.¹⁵

Huligane je potrebno razdvojiti od navijača koji na sportske događaje dolaze isključivo zbog uživanja u sportskom takmičenju ili sudelovanja u postizanju vrhunskih rezultata. Zbog toga su navijači obavezni i vrlo dragoceni za sportiste i timove u realizaciji klupskog i svakog drugog takmičenja, od lokalnog do Olimpijade. S druge strane navijači dobijaju svoj deo zadovoljstva – klupske trofeje i pojedinačne vrhunske sportske rezultate svojih miljenika smatraju svojim uspehom, ostvarivanjem svojih želja, ambicija i sportskih ciljeva, čime nadopunjuju osmišljavanje svog smisla života.

¹³ Na istom mestu.

¹⁴ Egoizam – (lat. ego, ja; fr. egoisme, sebičnost, samoljublje) pojam koji je nastao u teroiji solipsizma, po kojoj – “samo ja prema svojoj svesti znam da postojim, dok sva druga bića postoje samo u mojoj predstavi”. U etičkim teorijama, egoizam je princip delovanja sa aspekta sebičnosti, samoživosti i samoljublja. To je delovanje isključivo zasnovano na sopstvenim interesima, bez obzira na opšte interese ili interese drugih individua. Etički egoizam je (nemoralno) ponašanje koje ne uvažava moralni kodeks društvene sredine, a individualni etički kodeks je zasnovan na sumnjivim i sebičnim vrednostima koje nisu u skladu sa opšteprihvaćenim vrednostima društva, a sprovodi se moralno nedozvoljenim metodima i sredstvima i bez obzira na emocije ljudi iz okruženja. Prema psihološkom egoizmu, motivi, kao pokretači delovanja, usmereni su isključivo ka napretku sopstvene ličnosti, po ceni da se “gazi” preko ličnosti drugih.

¹⁵ http://www.bezbednost.org/upload/document/na_putu_prevenicije_nasilja_na_sportskim_priredbama.pdf Preuzeto 2012.05.21.

Požrtvovaniji, strasniji navijači, ili oni ljudi koji su odlučili da smisao svog života grade odabiranjem svrha u vezi sa sportom, često se organizuju kao navijačke grupe sa posebnom etikom ponašanja. U takvim grupama gradi se vertikalna hijerarhijska struktura, slična onoj u vojsci, sa autoritetima svrstanim u kvalitativne nivoe koje članovi grupe treba da dostignu svojim agresivnim stavovima i ponašanjem, često na rubu zakona ili, čak, kriminalnim delovanjem.

Takva ponašanja društvo vidi kao put ka anarhizmu¹⁶, a mladi ljudi, kao šansu da pronađu "sebe" i ostvare svoj smisao života kao "navijač tima", ili, "fan" nekog sportiste, kada već ne vidi bilo kakvu perspektivu da se pokaže na području nauke, umetnosti, filozofije, religije, privrede, politike, sporta, itd.

Korupcija u sportskim klubovima, kod funkcionera pa i sportskih trenera, takođe, pripada području neetičkog ponašanja u sportu. U procesu sportskog treniranja posebno je značajna uloga trenera radi određivanja specifičnih i originalnih metoda i sadržaja treniranja sportista kako bi se postigli vrhunski rezultati. Ponekad, nažalost, oni zloupotrebljavaju svoju ulogu eksperta u predviđanju i dugoročnom planiranju karijere talentovanih sportista kako bi njihovom „prodajom“ na tržištu sporta imali novčanu korist.

Sponzori u sportu, umesto marketinga svoje korporacije i poželjne i društveno odgovorne podrške sportu, često vrše zloupotrebu službe, službenog položaja ili službenih ovlašćenja radi sticanja lične ili porodične koristi, ili koristi za određenu interesnu grupu.

Aksiologija sporta i smisao života

Sportiste i navijače u sportu (sportsku publiku ili gledaoce sportskih priredbi i sportskih takmičenja) dužni smo da vrednujemo kao zrele, odrasle ličnosti koje imaju svoje ljudsko dostojanstvo. Kada su gledaoci maloletne osobe ili deca bez pratnje roditelja, njihovo ponašanje još je više u centru pažnje javnosti i zahtevaju se posebne mere predostrožnosti kako ne bi došlo do ugrožavanja njihovog fizičkog i mentaln og zdravlja ili života.

Kada se kaže da je čovek „ličnost“, to je ona bitna karakteristika čoveka kao ljudskog bića, koja ga razlikuje od svih drugih ljudi, ali ne po tome što je on inače rođenjem od svih drugih ljudi različit, već po tome što je svoju jedinstvenost u svetu izgradio svojim nastojanjima da svrhovito osmisli i ostvari svoje potrebe i želje u životu i odabere samo njemu najvredniji smisao života. Možda zbog težnje svakog čoveka da postane originalna ličnost, u mnogim jezicima sveta termin "smisao" nema množinu. Svaki pojedini čovek može da postane ličnost, ako svojom doslednom i stvaralačkom delatnošću prevazilazi svoj zatečeni položaj u društvenoj sredini time što ga unapređuje i humanizuje.

U etici sporta pojam "ličnost" odnosi se na individuu koja je izgradila svoj karakterističan etički sportski kodeks, koji nije u suprotnosti sa moralom društvene sredine, već ga dosledno održava i progresivno razvija.

Sportisti i navijači u sportu su prvenstveno mladi ljudi koji su još na početku ili su tek stigli do svoje prve „vrednosne orijentacije“. To je relativno stabilna struktura individualnog sistema vrednosti unutar oformljene strukture zrele ličnosti. Ona nastaje kao svesni i podsvesni proizvod

¹⁶ Anarhizam – (grč. anarhia – bezvlašće, prestanak vladavine zakona i autoriteta) je teorija koja polazi od temeljnog stava da u društvu ne treba da postoje bilo kakvi autoriteti. Osnovne postavke ove teorije su: zahtevi za ostvarivanjem apsolutne slobode svake individue oslobođanjem od svake (posebno državne) prinude, makar i upotrebom sile. Najpoznatiji predstavnici teorije anarhizma su: Štiner, Prudon, Bakunjin, Kropotkin. Tolstoj je zagovarao religijski anarhizam prema kojem je moguće da se dosadašnji autoritarni režimi mogu da prevaziđu nenasiljem i razvijanjem hrišćanske ljubavi. Savremene anarhističke teorije (u postmodernizmu) odustaju od rigoroznih zahteva i zadovoljavaju se individualnim revoltom ili masovnim protestima protiv jednodomlja u korist pluralizma mogućnosti.

celokupnog ranijeg životnog iskustva svakog čoveka, određuje hijerarhiju njegovih konkretnih svrha delovanja i teško je podložna promeni (osim u ekstremnim uslovima i okolnostima). Njena funkcija je da bude osnova za uspostavljanje integriteta zrele socijalizovane ličnosti, za izbor varijanti životnog cilja i za ostvarivanje čovekovog smisla života. Nedostatak vrednosne orijentacije pokazatelj je nezrele ličnosti, a drugačije vrednosne orijentacije su mogući uzrok konflikata u društvu.¹⁷

Jedna od vrednosti sporta jeste u tome da doprinese izgrađivanju pozitivne (društveno prihvatljive) vrednosne orijentacije za razliku od onih koji, takođe grade svoju, ali iz aspekta opštih društvenih vrednosti „negativnu vrednosnu orijentaciju“. Kod sportista to su oni koji ne prezaju od nedozvoljenih metoda i sredstava radi postizanja vrhunskih nacionalnih, svetskih, pa i olimpijskih rezultata. Kod navijača to su prepoznatljive navijačke grupe koje sistematski zagovaraju i aktivno provode „sportski huliganizam“ na sportskim terenima i oko njega. Sportski klubovi i sponzori sporta, takođe, koriste nedozvoljene metode i sredstva kako bi ostvarili svoje parcijalne ciljeve koji nemaju veze sa sportom ali imaju sa ogromnim količinama „prljavog novca“. Sportski treneri ponekad zloupotrebljavaju svoj sportski autoritet da učestvuju u prodaji „mladih talenata“ ili „slavnih sportista“ kako bi zaradili na talentu i trudu drugih.

Sportisti i navijači, kao i svi drugi ljudi na svetu, imaju svoj životni cilj ili, smisao života. To je svesno zamišljeni nivo kvaliteta čovekovog individualnog trajanja, koji se postiže usmeravanjem svih njegovih svrhovitih fizičkih, psihičkih i intelektualnih napora. Neki filozofi smatraju da na čoveka više utiču ostvarivanja očekivanih zamišljenih ideja nego događaji koji su se desili u prošlosti (otuda žrtvovanje života za neku ideju ili ideologiju). Određivanje životnog cilja u područjima svesti, samosvesti, uma ili duha razlikuje čoveka od drugih živih bića i kao njegova specifična razlika određuje njegovu suštinu. U raznim fazama života (mladost, zrelo doba i starost) menjaju se varijante životnih ciljeva u zavisnosti od rešavanja bitnih životnih problema ili od ekstremnih uslova i okolnosti (glad, bolest, rat i drugo). Postojanje životnih ciljeva nije samo važno zbog integriteta čovekove ličnosti kao individue, ono je važno i za društvo u kojem se on nalazi zbog toga što je poželjno da svi ljudi procesom socijalizacije dostignu civilizacijski postignut nivo vrednosti konkretne ljudske zajednice i da doprinose njenom daljem progresu.

Pojednostavljeno može da se zaključi da je smisao života realizacija svrha koje svojim smerom (pozitivnim ili negativnim) i redosledom (čovek bira svrhe iz aspekta svoje originalne vrednosne orijentacije) određuje čovekov smisao života koji je različit od svih ljudi na našoj dobroj planeti Zemlji koji su ikada živeli, koji sada žive i koji će živeti u budućnosti. Ovaj zaključak je tačan zbog činjenice da nije moguće u jednosmernom vremenu i promenljivom prostoru realizovati iste svrhe života istim redosledom i sa istim rezultatom na kraju (ostvarenim ili ne ostvarenim smislom života). Zbog toga neki ljudi idu pozitivnim putem smisla a neki negativnim putem besmisla a jedini kriterijum koji postoji za razdvajanje ovih pojava u univerzalne ljudske vrednosti čovečanstva i potrebe, specifične i posebne vrednosti društvene zajednice ili grupe ljudi kojima neka individua pripada.

Ko ima pravo da sportisti ili navijaču kaže da on ide putem smisla ili besmisla života? Kako ukazati mladim ljudima da njihovo nesportsko ponašanje ugrožava njihov vlastiti smisao a da se time ne ugrozi dostojanstvo čovekove ličnosti i njegova privatnost? Kako huliganima na ljudski, dostojanstven način, dokazati da „njihov smisao života ide „smerom ka besmislu života“ a da se, pritom, ne ugroze ljudska prava koja jednako pripadaju svima?

¹⁷ Postoje i naučne teorije koje nestanak davnih civilizacija ne pripisuju spoljašnjoj agresiji, već pogrešnoj opštoj vrednosnoj orijentaciji.

Dostojanstvo¹⁸ jeste jedno od najvažnijih ljudskih prava. Svaki čovek ima jednako pravo na sva dostignuta ljudska prava i na dostojanstvo kao posebnu etičku obavezu čoveka prema sebi i prema drugom čoveku kao čoveku. Iz ovog iskonskog prava razvijala se istorijska težnja ka slobodi kao mogućnosti da svaki čovek može jednako da razvija svoje najbolje sposobnosti ali tako da ne ugrožava druge.

Ugrožavanje drugih je, dakle, univerzalni kriterijum za razgraničavanje između sportskog i nesportskog, kao i etičkog i neetičkog u sportu i oko njega. Ako neetičko ponašanje sportista utiče na neetičko ponašanje navijača, i istovremeno, neetičko ponašanje navijača utiče na neetičko ponašanje klubova i sponzora u sportu, onda svi oni zajedno, realizujući svoje svrhovite delatnosti doprinose rušenju univerzalnih ljudskih vrednosti. Rušeći opšte univerzalne i posebne društvene vrednosti, oštećuju svoju vrednosnu orijentaciju.

Kad sportisti i navijači, svojim stavovima i ponašanjem na sportskim priredbama i takmičenjima ne poštuju univerzalne ljudske vrednosti i posebne pozitivne vrednosti koje se sportom održavaju i razvijaju, time ometaju ili onemogućavaju ostvarivanje pozitivnog smera svog smisla života.

Zaključak

Bez sportskog ponašanja vrhunskih sportista i njihovog odgovornog ponašanje, u duhu etičkog kodeksa sportista nema pravih vrhunskih rezultata, koji imaju nacionalnu reprezentativnost u svetu i predstavljaju uzore mladim generacijama, promovišući rad, upornost, borbenost i poštenje.

Nesportsko i nebezbedno ponašanje sportista i navijača, nažalost, često dovodi do huliganizma i ugrožavanja čovekove okoline i opšte bezbednosti na sportskim terenima i oko njih. Time sport gubi svoj izvorni smisao kao plemenita i društveno vredna aktivnost. Rušenjem izvornih vrednosti sporta do razmera kada one postaju „ne-vrednost“ i nepoželjna pojava iz aspekta etike sporta i kvaliteta života društvene zajednice, ruše se i pozitivne vrednosne orijentacije mladih. Poistovećivanje sa negativnim junacima sporta (nesportskim sportistima i nesportskim navijačima - huliganima) gradi se negativna vrednosna orijentacija koja, u krajnjoj istanci, sprečava svakog čoveka da ostvari zamišljeni smisao života u pravcu univerzalnih vrednosti čovečanstva. Tako zamišljen smisao života može da se, primenom kriterijuma univerzalnih ljudskih vrednosti, okarakterise kao „besmislenost“ ili „gubljenje pozitivnog smera svog smisla života“.

U svemu što činimo, kao sportisti ili kao navijači u sportu, bez obzira da li je to značajno sportsko takmičenje ili nije, uvek moramo da se pitamo: da li našim delovanjem ili nedelovanjem postajemo osoba kakva želimo da budemo. U svim momentima, svaki put kada mislimo, govorimo, donosimo odluku i delujemo ili ne-delujemo na osnovu naše slobodne volje - mi zaista već postojimo kao stara - već izgrađena ličnost nekog nivoa etičnosti i, istovremeno, postajemo neka druga - nova ličnost - manje ili više etična nego što je bila. Odluke koje donosimo sadrže svu našu prošlost u svesti, znanju, volji, emocijama, nadama, željama, idealima itd, ali, istovremeno, naše delovanje iz trenutka u trenutak menja našu

¹⁸ Ljudskih prava ima mnogo, a jedinstveni termin "dostojanstvo" ima samo jedninu. Prema Kantu, dostojanstvo je čovekova apsolutna svrha, to znači da čovek drugog čoveka nikad ne sme da koristi kao sredstvo, nego uvek kao konačnu svrhu. Dostojanstvo je unutrašnja potreba (težnja za ostvarivanjem sopstvenog originalnog smisla života), ali i socijalni zahtev za vrednovanjem i poštovanjem drugih ljudi u njihovoj različitosti. Težnjom ka većem ličnom dostojanstvu i unapređivanjem poštovanja dostojanstva drugih, čovek ispunjava svoj život smislom i pridonosi progresu ljudskog roda. Dostojanstvo pripada svakom živom čoveku, ali i nerođenom i umrlom. Savremene države i međunarodne organizacije čine sve kako bi zaštitile čovekovo dostojanstvo i sprečile njegovo ugrožavanje.

sadašnjost i mi neprestano postajemo nova ličnost. Od kvaliteta naših postupanja prema nama samima i prema drugima zavisi i naša ličnost. Opšte je poznato da su naša dela temelj naše ličnosti, i da je naša ličnost temelj i motiv za naša buduća dela.

Čovekovu etičnost, pa i etiku u sportu, potrebno je, dakle, posmatrati u zahvatu svih njegovih problema, sredstava koja su mu dostupna, metoda koji su mu dopušteni, svrha koje je odabrao ili greškom sledio, i smisla života koji, kao jedinstveni i neponovljivi, teče smerom ostvarivanja ili neostvarivanja njegovih ličnih svrha. Čovek je celina koja se može razumeti samo iz totaliteta sveukupnih civilizacijski dostignutih rezultata (tradicijskih vrednosti svake zajednice ili svake kulture posebno). Iz objektivnog sagledavanja svoje prošlosti i sadašnjeg stanja u kojem je čovek zatečen i zatočen na našoj dobroj planeti Zemlji, mogu da se kreativno izrode mnoge mogućnosti za opstanak u budućnosti, kao dimenziji u kojoj čoveku neprestano izmiče saznavanje njegove suštine i smisla života u kojima je, možda, sakriven i smisao postojanja ljudskog roda. Sport, kao odabrana profesija, amaterski sport ili sport kao rekreacija i razonoda (gledaoci i navijači u sportu) samo su neke od mogućih čovekovih svrha od beskonačno mnogo drugih. Samo od čoveka zavisi da li će redosled, smer i kvalitet ove odabrane svrhe ići smerom smisla ili besmisla njegovog života.

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STO GODINA SRBIJE U OLIMPIJSKOM POKRETU (1912-2012)

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Apstrakt

U Kraljevinu Srbiju ideja o obnavljanju Olimpijskih igara stiže krajem 19. veka, a ostvaruje se osnivanjem Srpskog olimpijskog kluba (komiteta) 1910. god, koji je primljen u Međunarodni olimpijski komitet - MOK (1912) u Stokholmu za vreme V olimpijskih igara, na kojima su se takmičila dvojica sportista Kraljevine Srbije, a kapetan Svetomir Đukić bio primljen za člana MOK-a, u kome je ostao do 1948. godine.

Prijemom Srpskog olimpijskog komiteta u Međunarodni olimpijski komitet nastao je nov period u razvoju olimpizma u Srbiji.. Izvršene su organizacione promene u strukturi rukovođenja olimpijskim pokretom prema strukturi MOK-a, predsednik je bio Nikodije Stevanović, dok je kapetan Svetomir Đukić, vršio funkciju direktora.

Svakako da bi razvoj sporta i olimpijskog pokreta u Srbiji bio još brži i uspešniji da nije već nekoliko meseci posle završenih Olimpijskih igara u Stokholmu zypočeo Prvi balkanski rat, kada je celo rukovodstvo Srpskog olimpijskog komiteta otišlo u rat sa omladinom i sportistima Srbije. Na njega se nadovezao Drugi balkanski rat, tako da je skoro cela jedna godina protekla u ratovima.

Početak 1914. godine Srpski olimpijski komitet je u Beogradu nastavio sa organizacijom velikih sportskih takmičenja, koja su često nazivana: "olimpijske utakmice" i planirao je da organizuje Prvi olimpijski kongres 8. 09.1914. g. Međutim, nije se mogao predvideti veliki ratni sukob, koji je ubrzo zahvatio ceo svet. Svetski rat je zaustavio dalji razvoj svetskog, a time i srpskog olimpijskog pokreta.

Stvaranjem nove države - Kraljevine Srba, Hrvata i Slovenaca, javila se i potreba za jedinstvenim Olimpijskim komitetom. Na Osnivačkoj skupštini Jugoslovenskog olimpijskog odbora u Zagrebu dr Franjo Bučar, izabran za predsednika Jugoslovenskog olimpijskog odbora (JOO), a za potpredsednike major Svetomir Đukić i dr Ć. Žižek.

Major Svetomir Đukić je na Kongresu MOK u Antverpenu 18. 08. 1920. g. Predstavljao Olimpijski komitet Srbije i tom prilikom ga je MOK priznao i za „delegata“ Jugoslovenskog olimpijskog odbora. Tako je Srpski olimpijski komitet nastavio rad kao Jugoslovenski olimpijski odbor, a od 1927. godine kao Jugoslovenski olimpijski komitet. Te godine sedište JOK se vraća iz Zagreba u Beograd.

Po okončanju Drugog svetskog rata i oživljavanja olimpijskih aktivnosti u celom svetu, uoči Olimpijskih igara u Londonu 1948. Jugoslovenski olimpijski komitet obnavlja rad u

sklopu FISAJ, a 1951. postaje samostalan, a ime Jugoslovenski olimpijski komitet zadržao je do 3. aprila 2003. godine kada ga je, u skladu sa promenama u državi, promenio u Olimpijski komitet Srbije i Crne Gore.

Razdruživanjem Srbije i Crne Gore i gašenjem Državne zajednice Srbija i Crna Gora, OKSCG je 8. juna 2006. promenio ime u Olimpijski komitet Srbije.

Ključne reči: Olimpizam / Olimpijski klub / Svetomir Đukić.

Uvod

U Kneževinu i Kraljevinu Srbiju ideja o obnavljanju Olimpijskih igara stiže u drugoj polovini 19. v., koja se prihvata i počinje da ostvaruje u srpskom sportu. Tako se spominje da je javno predavanje o Olimpijskim igrama Jelina održano šezdesetih godina u Beogradu.

Devedesetih godina 19. veka u mnoge privatne škole i građanska gimnastička društva u Beogradu koriste termin olimpijska takmičenja. Konjička takmičenja u Čupriji, održana marta 1896., nazvana su "Olimpijske svečanosti", a Viteško društvo "Dušan Silni" je najavilo program javnog časa da će "se prvi put na javnom času izvesti čuvene Olimpijske igre sa mačevima u doba starih Jelina" februara 1896. godine.

Konačno se olimpijska ideja u Kraljevini ostvaruje osnivanjem Srpskog olimpijskog kluba (komiteta) 1910. godine, koji je primljen u Međunarodni olimpijski komitet - MOK (1912) u Stokholmu za vreme V olimpijskih igara, na kojima su se takmičila dvojica sportista Kraljevine Srbije, a kapetan Svetomir Đukić bio primljen za člana MOK-a, u kome je ostao do 1948. godine.

Metode

U radu je primenjen istorijski metod.

Rezultati i diskusija

Pojava olimpijske misli i nastanak olimpijskog pokreta

Razvoj modernog sporta, koji je podstakao ideju o obnavljanju antičkih Olimpijskih igara, omogućio je da se ona javlja, prihvata i razvija u brojnim privatnim školama, građanskim gimnastičkim društvima i sportskim klubovima Srbije. Stoga je razumljivo što se veoma često u nazivu njihovih programa takmičenja nalazio izraz: olimpijska takmičenja. Tih 90-ih godina 19. veka svoja takmičenja nazivali su i *narodne svečanosti* ili *viteška nadmetanja*, ali ne bi trebalo zaboraviti da su i antičke svečane igre (Olimpijske, Pitijске, Istamske, Nemejske, Panatinejske) takođe nazivane: narodne svečanosti.

Viteško društvo "Dušan Silni" u Beogradu je organizovalo vežbanja različitih sadržaja, priređivalo javne časove, na kojima su članovi Društva prikazivali stečena znanja i veštine. Za priredbu, koju su održali februara 1896. godine, najavili su da će se u njenom programu: "prvi put na ovom javnom času izvesti izvesne čuvene Olimpijske igre sa mačevima u doba starih Jelina".¹⁾

To znači da su članovi ovog Društva u vreme priprema i organizacije Prvih modernih Olimpijskih igara, planiranih da se održe u aprilu 1896. godine u Atini, povezivali svoje programe sa aktuelnim obnovljenim Olimpijskim igrama.

Slično tome, mesec dana pre nego što su se održale Prve olimpijske igre u Atini, u Srbiji su (marta, 1896) najavljena su konjička takmičenja, organizovana u Čupriji pod imenom: "Olimpijske svečanosti na konjima u Čupriji".²⁾ Značajan podsticaj za prihvatanje olimpijske

¹⁾ Mali žurnal. Br. 47. Beograd, 16.02.1896.

²⁾ Mali žurnal. Br. 72. Beograd, 12.03.1896.

ideje u Srbiji, odnosno potpunije saznanje o ovoj velikoj sportskoj manifestaciji, imao je petodnevn boravak kralja Aleksandra Obrenovića u Atini 1896. za vreme I olimpijskih igara. Kralja Aleksandra pozvao je na Olimpijske igre grčki kralj Đorđe i mada je ovaj put imao višestruki karakter (poseta Hilandar u i obilazak grčke kraljevske porodice, radi moguće ženidbe kralja Aleksandra), njegov boravak na olimpijskim borilištima beležen je u srpskoj štampi, te je pažnja srpske javnosti usmeravana na zbivanja i u vezi sa Olimpijskim igrama.

Krajem 19. i početkom 20. veka olimpijska ideja je prihvaćena u brojnim sportskim klubovima, koji su organizovali takmičenja sa nazivom "Olimpijske igre", kao što je to učinilo Društvo "Dušan Silni", koje je zajedno sa novinarima organizovalo na Adi Ciganliji (1908) *Olimpijske igre*. Takmičenja su održana u veslanju, plivanju, mačevanju, trci na 3.000 metara.

Sve brže prihvatanje olimpijske ideje dovelo je do toga da se širom Srbije osnivaju društva i klubovi koji u svoj naziv stavljaju i ime *olimpijski*, kao što je to učinilo u Beogradu jedno društvo koje se nazvalo "Srpska Olimpija". Ovo Društvo, koje je osnovano početkom 20. veka, organizovalo je niz takmičenja svake godine, pod imenom: "Olimpijske igre". Okupljali su veliki broj pristalica sporta i olimpizma, širili i propagirali olimpijski pokret, jačajući tako njegovu osnovu i ubrzavajući njegov razvoj.

Osnivanje Srpskog olimpijskog kluba (SOK)

Sve ovo je značilo da je prihvaćena olimpijska ideja i da su sportisti želeli da se uključe u međunarodni olimpijski pokret. Kao rezultat tih potreba i želja u Beogradu je osnovan Srpski olimpijski klub, 10. (23) februara 1910. godine, koji je u narednom periodu izražavao želju za uključanje u međunarodnu olimpijsku zajednicu. Srpski olimpijski klub (SOK) je osnovan u Redakciji lista "Novo vreme", u prostorijama hotela "Moskva", sa ciljem da podstiče i pomaže rad "viteških društava, kao i svih ustanova i radova koji bi doprinosili poboljšanju vojničkog i telesnog vaspitanja naših naroda".

U usvojenom Programu rada, koji je naveden u Statutu Kluba, Srpski olimpijski klub se opredelio za dalji razvoj sporta i olimpijskog pokreta u Kraljevini Srbiji.

Srpski olimpijski klub je imao Upravu od šest članova, od kojih su četiri člana bili oficiri srpske vojske, što ukazuje na ulogu koju su imali srpski oficiri u osnivanju i razvoju brojnih sportskih klubova i organizacija, kao i u ostvarenju olimpijske ideje i olimpijskog pokreta u Srbiji.

Osnivanje Srpskog olimpijskog kluba značilo je dalji podsticaj za organizaciono povezivanje svih postojećih građanskih društava, sportskih klubova i njihovih saveza u jedinstven sistem sportskih takmičenja. To je mnogo značilo za dalji uspešniji razvoj sporta, a time i olimpijskog pokreta u Srbiji.

Razvoj olimpijskog pokreta

Početkom XX veka u Srbiji je olimpizam prihvaćen kao pokret modernog sporta, a odlazak i učešće na Olimpijskim igrama kao krajnji cilj svakog sportiste. O olimpizmu se sve više saznávalo, tako da je vremenom bilo dosta mladih koji su postajali najpre njegovi pripadnici, a u kasnijem periodu pobornici, propagatori i nosioci njegovog daljeg razvoja.

U četvorogodišnjem periodu rada, odnosno od osnivanja pa do početka Prvog svetskog rata (1910-1914), Srpski olimpijski klub (komitet) pokrenuo je široku aktivnost i odigrao značajnu ulogu u daljem razvoju olimpijskog pokreta u Kraljevini Srbiji. U ovom periodu uočavaju se dve faze njegovog rada:

Rad Srpskog olimpijskog kluba u periodu od 1910. godine do prijema u MOK 10.7.1912. godine

Ovaj period rada Srpskog olimpijskog kluba bio je veoma značajano razdoblje u razvoju olimpijskog pokreta u Srbiji, kada su organizovana mnoga takmičenja u različitim sportovima. Olimpijski pokret je postigao punu afirmaciju organizacijom predolimpijskih takmičenja, a odlaskom delegacije i sportista Kraljevine Srbije na Pete olimpijske igre u Stokholm ostvario međunarodno priznanje.

U prvoj godini rada (1910) Srpski olimpijski klub (SOK) je organizovana najjednostavnija takmičenja u trčanju, na kojima su mogli da učestvuju svi građani, podsticani i novčanim nagradama Kluba. Uprava je obavestavala gimnastička društva i sportske organizacije o svom Programu, pozivajući njihove članove na ova takmičenja.

Već u prvoj godini rada uspeo je da ostvari veoma raznovrstan program sportskih takmičenja, koja su okupila više hiljada učesnika i bila praćena sa velikim brojem gledalaca. Najznačajnija takmičenja koja je Klub organizovao bila su:

1. Velika pešačka utakmica (takmičenje u trčanju) na relaciji: Obrenovac - Košutnjak, u dužini od 32 kilometra, na kojoj je učestvovalo više od 100 takmičara. Na takmičenju su bili i kralj Petar I Karađorđević sa predstolonaslednikom Aleksandrom i princem.
2. Konjička takmičenja u preskakanju prepona, - učestvovalo više od 20 takmičara.
3. Takmičenje u plivanju na Savi, organizovano zajedno sa nekoliko plivačkih klubova iz Beograda, na kome je učestvovalo više od 70 takmičara.
4. Olimpijske igre, na kojima se takmičilo više od 200 vojnika i 80 građana, sa posebnim takmičenjem vojnika.
5. Moto trke na relaciji Niš-Beograd, koje su organizovane zajedno sa Prvim srpskim velosipedskim društvom.
6. Takmičenja u klizanju.
7. Takmičenja u boksu i borenju.

U drugoj godini rada (1911) Srpski olimpijski klub je nastavio sa organizovanjem nekoliko velikih masovnih manifestacija i to:

1. Veliki konjički slet u Kragujevcu.
2. Veliki pešački slet u Kruševcu.
3. Prvo letenje aviona nad Beogradom.

Klub je nastavio da organizuje i ostala sportska takmičenja:

1. Konjičke trke.
2. Fudbalske utakmice.
3. Takmičenja u trčanju.
4. Takmičenja u streljaštvu.
5. Takmičenja u plivanju.

Ovaj obimni program i široka aktivnost Srpskog olimpijskog kluba zahtevala je jaču i brojniju organizacionu strukturu Uprave Kluba. Stoga su krajem 1910. godine povećali broj članova Uprave sa 6 na 55 članova, od kojih je bilo 22 oficira.

Krajem 1911. godine Srpski olimpijski klub promenio je ime u Centralni olimpijski klub. Radi uspešnije koordinacije rada 33 osnovana masovna olimpijska kluba, formirana je: **Sređišna savezna uprava**.

Rad Srpskog olimpijskog komiteta u trećoj godini (1912) bio je veoma intenzivan, jer je organizovao predtakmičenja za odlazak na Pete olimpijske igre. U prvoj polovini 1912. g. bio je usmeren na pripreme i nastup sportista Kraljevine Srbije na Petim olimpijskim igrama. Radi što bržeg uključivanja srpskih sportista u međunarodni olimpijski pokret, Srpski

olimpijski klub uputio je pismo Međunarodnom olimpijskom komitetu (MOK) radi njegovog prijema u ovu organizaciju.

Izborna takmičenja sportista Kraljevine Srbije za nastup na Petim olimpijskim igrama (1912)

U prvoj polovini 1912. godine Srpski olimpijski klub činio je niz aktivnosti da bi povećao interesovanje sportista za predstojeće Olimpijske igre. Radi izbora najboljih, koji bi učestvovali na Igrama, Klub je u maju 1912. godine organizovao izborna takmičenja samo u dve atletske discipline i to: u trčanju na 100 metara i maratonu.

Izborna trka u disciplini: trčanje na 100 m. održana je 20. maja 1912. godine na travnatoj zaravni izletišta "Košutnjak". U trci je pored takmičara iz Srbije učestvovalo i nekoliko takmičara iz Makedonije i Crne Gore.

Pobedio je Dušan Milošević, sa rezultatom 12 sekundi, trčeći u kompletnoj fudbalskoj opremi, jer druge opreme tada nije bilo. Ovo takmičenje je posmatrao veliki broj gledalaca, jer su Beograđani ovo takmičenje prihvatili kao narodnu manifestaciju, na kojoj su prisustvovali i predstavnici srpske Vlade, vojske, mnoge strane diplomate i članovi Dvora. Celokupnu takmičarsku atmosferu uvećao je orkestar Garde.

Nedelju dana kasnije, 27. maja 1912. godine organizovano je izborna takmičenja maratona, na kome se takmičilo 40 trkača. Učestvovali su sokoli, vojnici kao i vežbači drugih društava i sportisti raznih sportskih klubova.

Uprkos tome što nisu bili povoljni vremenski uslovi, pošto je cele noći uoči ove trke padala jaka kiša, trka je održana na stazi od Obrenovca do Košutnjaka. U ovoj trci pobedio je Dragutin Tomašević, dobar gimnastičar i još bolji dugoprugaš Društva "Dušan Silni", koji je tada bio vojnik 18-tog pešadijskog puka. Direktor Srpskog olimpijskog kluba kapetan Svetimir Đukić je bio komandir čete u ovom puku. I na ovom takmičenju su bili prisutni predstavnici Dvora, Vlade, vojske i diplomata.

Na ovaj način Dragutin Tomašević i Dušan Milošević kvalifikovali su se da učestvuju na Petim olimpijskim igrama u Stokholmu, kao predstavnici Kraljevine Srbije. Određeno je i zvanično vođstvo puta:

1. kapetan Svetimir Đukić, predsednik SOK, 2. poručnik Dragutin Vojinović, predsednik Beogradskog sportskog društva i 3. inženjer Andra Jović, trener atletičara.

Ova tročlana delegacija, sa dvojicom izabranih sportista, krenula je na put 12 (25) juna 1912. godine, ispraćena od mnogobrojnih rođaka i prijatelja. U Stokholm su stigli nakon putovanja od dva dana i dve noći, gde ih je dočekaio počasni srpski konzul Karlson.

Nastup sportista Kraljevine Srbije na V olimpijskim igrama

Po dolasku delegacije Kraljevine Srbije u Stokholm Svetimir Đukić i Dragutin Vojinović su bili predstavljeni kralju Gustavu, a primili su ih još i predsednik Međunarodnog olimpijskog komiteta baron Pjer de Kuberten i predsednik Švedskog olimpijskog komiteta.

Dušan Milošević je u trci na 100 metara u predtakmičenju stigao trčeći u grupi i nije uspeo da se plasira za finalna takmičenja.

Dragutin Tomašević je u maratonskoj trci, u kojoj je učestvovalo 62 takmičara i pored toga što je bio povređen, izdržao celu trku i 37 stigao na cilj.

Ovo prvo učešće dvojice sportista Kraljevine Srbije, koji su pokazali izuzetnu borbenost i želju za što boljim uspehom i čiji je nastup u publici praćen sa simpatijama. Njihov nastup može da se oceni kao zadovoljavajući imajući u vidu njihovo neiskustvo, nedovoljnu pripremljenost, bolest i povrede.

Prijem Srpskog olimpijskog kluba u Međunarodni olimpijski komitet (MOK)

Pošto je Srpski olimpijski klub već ranije podneo zahtev za prijem u Međunarodni olimpijski komitet, to je na njegovoj sednici održanoj 4.07.1912. pročitano pismo Srpskog olimpijskog kluba, a na poslednjoj sednici održanoj 10.07.1912. Srpski olimpijski klub je primljen u Međunarodni olimpijski komitet, a kapetan Svetomir Đukić je predložen i izabran za člana Međunarodnog olimpijskog komiteta.

Prijem Kraljevine Srbije za ravnopravnog člana ove međunarodne asocijacije bio od izuzetnog značaja za dalji razvoj olimpijskog pokreta u Srbiji. Ova ostvarena želja bila je kruna napora celokupnog sportskog i olimpijskog pokreta Kraljevine Srbije.

Odmah posle prijema u MOK Srpski olimpijski klub je u svojim dokumentima promenio naziv u *Srpski olimpijski komitet*, analogno nazivu Međunarodnog olimpijskog komiteta. Na taj način je jednostavno i bez posebnog odlučivanja Srpski olimpijski klub promenio reč "klub" u svom imenu u "komitet".

Prijem Srpskog olimpijskog kluba i kapetana Svetomira Đukića u Međunarodni olimpijski komitet bio je ne samo priznanje za postignute rezultate u razvoju sporta i olimpijskog pokreta u Srbiji, već snažan podsticaj za njegov brži i uspešniji dalji razvoj. To je bilo i priznanje lično kapetanu Svetomiru Đukiću, za njegov doprinos razvoju sporta i olimpizma u Kraljevini Srbiji.

Zaključak

Prijemom Srpskog olimpijskog komiteta u Međunarodni olimpijski komitet nastao je nov period u njegovom radu. Izvršene su organizacione promene u strukturi rukovođenja olimpijskim pokretom u Srbiji prema strukturi MOK-a.

Novoformirani Srpski olimpijski komitet (SOK) imao je 17 članova, predsednik je bio Nikodije Stevanović penzionisani general, dok je kapetan Svetomir Đukić, kao predstavnik Beograda vršio funkciju direktora. Ovom reorganizacijom u Srpskom olimpijskom komitetu većinu su činili oficiri, kojih je bilo 14 od 18 članova.

Dve godine kasnije (maja 1914) formirana je *Uprava Srpskog olimpijskog komiteta* od 11 članova u kojoj je bilo samo četiri oficira. Među njima su se i dalje nalazili kapetan Svetomir Đukić i Nikodije Stevanović.

Svakako da bi započeti razvoj sporta i olimpijskog pokreta u Srbiji bio još brži i uspešniji da nije već nekoliko meseci posle završenih Olimpijskih igara u Stokholmu započeo rat sa Turskom (Prvi balkanski rat), kada je celo rukovodstvo Srpskog olimpijskog komiteta otišlo u rat sa omladinom i sportistima Srbije.

Na njega se nadovezao Drugi balkanski rat sa Bugarskom, tako da je skoro cela jedna godina protekla u ratovima. Mnogi članovi Srpskog olimpijskog komiteta su poginuli, neki nestali, pa je bilo potrebno dosta vremena da se nakon završenog rata, krajem 1913. g. Komitet ponovo reorganizuje i nastavi ranije započetu uspešnu aktivnost.

Početak 1914.godine Srpski olimpijski komitet je u Beogradu nastavio sa organizacijom velikih sportskih takmičenja, koja su često nazivana: "olimpijske utakmice".

Srpski olimpijski komitet je planirao da organizuje Prvi olimpijski kongres 8.09.1914.g. Međutim, nije se mogao predvideti veliki ratni sukob, koji se nakon početka rata Srbije i Austrougarske, proširio na celu Evropu, a ubrzo zahvatio i ceo svet.

Ovaj svetski rat zaustavio je dalji razvoj svetskog, a time i srpskog olimpijskog pokreta. U njemu su učestvovali gotovo svi članovi Srpskog olimpijskog komiteta, kao i mnogi sportisti, koji su odlaskom u rat prekinuli olimpijske pripreme za nastup na sledećim Olimpijskim igrama (1916. u Berlinu).

Neposredno uoči početka Prvog svetskog rata u Parizu je od 13-23.06.1914. održan Olimpijski kongres u čast 20-to godišnjice donošenja odluke o obnavljanju modernih Olimpijskih igara (u Parizu 1894. godine). Učestvovalo je oko 140 delegata nacionalnih olimpijskih komiteta, za koje je pripremljen poseban program, uz prisustvo najviših državnih funkcionera Francuske.

Na ovom Kongresu učestvovao je i Svetomir Đukić, ispred Srpskog olimpijskog komiteta, kome je trebalo da se pridruži još četiri mlađa oficira, koji su u Parizu bili na studijama i da tako zajedno čine petočlanu delegaciju Srpskog olimpijskog komiteta.

Zbog Prvog svetskog rata prekinuta je celokupna aktivnost svetskog olimpijskog pokreta. Planirane VI olimpijske igre u Berlinu 1916. godine nisu održane i tek sa njegovim prestankom nastavljena je olimpijska aktivnost u svim zemljama sveta.

Stvaranjem nove države - Kraljevine Srba, Hrvata i Slovenaca, javila se i potreba za jedinstvenim Olimpijskim komitetom. Na Osnivačkoj skupštini Jugoslovenskog olimpijskog odbora u Zagrebu 14.12.1919. g. dr Franjo Bučar, izabran za predsednika Jugoslovenskog olimpijskog odbora (JOO), a za potpredsednike major Svetomir Đukić i dr Č. Žižek.

Major Svetomir Đukić je na Kongresu MOK u Antverpenu 18.08.1920.g. Predstavljao Olimpijski komitet Srbije i tom prilikom ga je MOK priznao i za „delegata“ Jugoslovenskog olimpijskog odbora. Svetomira Đukića se lično založio da i dr Franjo Bučar bude primljen za člana Međunarodnog olimpijskog komiteta. Tako je Srpski olimpijski komitet nastavio rad kao Jugoslovenski olimpijski odbor, a od 1927. godine kao Jugoslovenski olimpijski komitet. Te godine sedište JOK se vraća iz Zagreba u Beograd.

Po okončanju Drugog svetskog rata i oživljavanja olimpijskih aktivnosti u celom svetu, uoči Olimpijskih igara u Londonu 1948. Jugoslovenski olimpijski komitet obnavlja rad u sklopu FISAJ, a 1951. postaje samostalan, a ime Jugoslovenski olimpijski komitet zadržao je do 3. aprila 2003. godine kada ga je, u skladu sa promenama u državi, promenio u Olimpijski komitet Srbije i Crne Gore.

Razdruživanjem Srbije i Crne Gore i gašenjem Državne zajednice Srbija i Crna Gora, OKSCG je 8. juna 2006. promenio ime u Olimpijski komitet Srbije.

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INVESTICIJE U POSLOVNOM SISTEMU

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Apstrakt

Svaka kompanija teži da održi postojeću likvidnost i da ostvari napredak, tj. da se razvija. Tako nešto može da se ostvari putem investiranja. Investiranje može da bude u proizvodnji, u pogledu novih tehnologija, novih proizvoda itd. A uz takav oblik investiranja, ima slučajeva investiranja preduzeća u vrednosne papire finansijskog tržišta čime ostvaruje profit. Kod investicija postoji mikro i makro aspekt.

Kada se vrši investiciona analiza i prilikom investicionog menadžmenta, odnosno ocene i rangiranja projekta ključajno je značajna klasifikacija na nezavisne i međusobno isključive investicione projekte. I teoretski i praktično su prisutna dva glavna pristupa procene i merenja finansijskih koristi ili efekta investicionih projekata: tradicionalni ili računovodstveni pristup i savremeni ili finansijski pristup.

Investiciona odluka odnosi se na prihvatanje ili odbacivanje predloga na osnovu 4. metode određivanja neophodnog kapitala: metode procene stope povraćaja ; metode perioda povraćaja ; metoda interne stope povraćaja i metoda neto sadašnje vrednosti.

Metoda procene stope povraćaja je zapravo odnos prosečnog godišnjeg profita posle oprezivanja i investicije u određeni projekat.

Metode perioda povraćaja uzimaju u obzir veličinu i razgraničenja vremenskih tokova novca u svakom periodu veka projekta. Metoda diskontovanih tokova su interna stopa povraćaja i metoda sadašnje vrednosti.

Metodom sadašnje vrednosti svi povraćaji novca se diskontuju na sadašnju vrednost, koristeći traženu stopu povraćaja.

Indeks profitabilnosti projekta drugim rečima odnos korisnosti i troškova, odnos je sadašnje vrednosti i kasnijeg priliva novca i početnih troškova.

U vremenu inflacije preduzeća manje ulažu jer je manja stopa povraćaja a samim tim i smanjen faktor motivacije.

Kada se donose investicione odluke postoje izvestan rizik jer sasvim sigurno je nemoguće postojanje jedne precizne tabele, kalkulacija koja bi imala sve nepreračunljive i nedokučive uticaje i veličine koje mogu imati uticaj na ishod određenog projekta.

Zbog toga razmatranje unapređivanja i predviđanja treba da budu glavni prioritet u procesu dolaženja do optimalne odluke.

Ključne reči: investicije / metode određivanja neophodnog kapitala / profitabilnost

Pojam investiranja i investicije

Svako preduzeće kao polaznu osnovu ima očuvanje egzistencije i obezbeđivanje konstantnog željenog razvoja.

Preduzeće želi da obezbedi opstanak i trenutno i u budućnosti, da obezbedi kontinuitet sadašnjeg i budućeg efikasnog funkcionisanja. Uglavnom se ovaj sintetizovan osnovni cilj preduzeća dalje precizira kroz dva dopunska cilja:

- obezbeđenje kontinuiteta funkcionisanja, tj. obezbeđenje egzistencije poslovnog sistema;
- obezbeđenje kontinuelnog nastavka efikasnog funkcionisanja, tj. obezbeđenje kontinuelnog željenog razvoja poslovnog sistema.

Svoj cilj preduzeće pokušava da realizuje u sadašnjim uslovima i sadašnjem vremenu, ali razmišlja se i o skorijoj budućnosti. Kada se obezbede uslovi za trenutni opstanak preduzeće teži ka stalnom razvijanju i postizanja visokog nivoa kvaliteta za budući rad. Shodno tome definiše se dugoročni plan i politika koja sadrži osnovne ciljeve i načine realizacije istih. Ciljevi investiranja i investiciona politika, kao direktna posledica ciljeva preduzeća, zadržani su u dugoročnoj razvojnoj politici preduzeća. Sa druge strane, samo konkretnim investicionim akcijama u okviru definisane investicione politike, može se zasnivati ostvarenje i razvoj politike preduzeća.

Kriterijum odabira investicija je zapravo mera valjanosti pojedinih investicionih akcija, mera dostizanja postavljenih ciljeva investiranja i na osnovu njega se određuje koju od raspoloživih investicionih akcija treba realizovati.

Kao i drugi ekonomski fenomeni investicije imaju svoj mikro i makro aspekt. Na makro nivou to su različite varijante kapitalnog koeficijenta kao odnosa između investicija i proizvodnje, u finansijskoj literaturi i praksi to su najčešće prosečni i marginalni kapitalni koeficijent. Prosečni kapitalni koeficijent pokazuje koliko jedinica kapitala (osnovnih i obrtnih sredstava), odnosno ukupnih investicija je angažovano u stvaranju jedinica proizvodnje, dok marginalni kapitalni koeficijent predstavlja odnos između prirasta investicija i prirasta proizvodnje. Investicioni menadžment na mikro nivou, odnosno na nivou preduzeća ima za cilj da ograničeni kapital za investiranje alokira na optimalne svrhe, programe kako bi se maksimiziralo ostvarenje njegovih ekonomskih ciljeva.

U uslovima razvijenog finansijskog tržišta i pristupa preduzeća takvom tržištu investiranje se mora shvatiti u širokom smislu. Pored investiranja u projekte, poslovne poduhvate u preduzeću, bilo u modernizaciji postojeće, bilo u novu proizvodnju, pogone, fabrike ili delatnosti, i preduzeće može neangažovani slobodni kapital plasirati i u vrednosne papire finansijskog tržišta i tako ostvariti zaradu.

Investicije, kao sastavni deo celovitosti procesa alokacije ekonomskih resursa u vremenu, važe za jedno od najbitnijih područja ekonomske teorije, iz dve osnovne ekonomske karakteristike:

- ograničenost i mogućnost alternativne upotrebe ekonomskih resursa;
- budući razvoj, kao pretpostavka poptunijeg zadovoljenja potreba u budućnosti.

Investicioni projekti i investicioni kriterijumi

Investicioni predlozi ili projekti, kao alternativne mogućnosti internog ulaganja unutar preduzeća, mogu se klasifikovati na:

- nove proizvodne ili proširenje postojećih;
- izmeštanje opreme ili objekata;
- istraživanja i razvoj;

- istražni radovi;
- drugi projekti.

Za potrebe investicione analize i investicionog menadžmenta, odnosno ocene i rangiranja projekta od vitalne je važnosti podela na nezavisne i međusobno isključive investicione projekte. Nezavisnim projektima se smatraju oni koji ne konkurišu jedan drugome, odnosno ukoliko izbor jednog projekta ne podrazumeva istovremeno odbacivanje drugog. Nasuprot njima, međusobno isključivi projekti se međusobno isključuju, tako da izbor jednog projekta znači automatsko odbacivanje drugog.

Kapitalna ulaganja involviraju:

- generisanje investicionih predloga;
- procenu novčanih ili tokova gotovine za te predloge;
- vrednovanje novčanih tokova;
- selekciju projekta baziranu na prihvaćenim kriterijumima;
- kontinuirano ponovno vrednovanje investicionih projekata nakon njihovog prihvatanja.

Svaka od nabrojanih aktivnosti odnosno korektnost njenog sprovođenja poboljšava objektivnost i kvalitet investicionog upravljanja i šansu za izbor optimalnog plasmana kapitala.

U teoriji i praksi su prisutna dva osnovna pristupa procenjivanju i merenju finansijskih koristi ili efekta investicionih projekata:

- tradicionalni ili računovodstveni pristup;
- savremeni ili finansijski pristup.

Prvi predstavlja projekciju godišnjeg finansijskog rezultata ekonomskom veku projekta i njihovo poređenje sa uvoženim sredstvima – kapitala. Iskazivanje rentabilnosti ulaganja na ovaj način zavisi od korišćenih izvora i njihove kombinacije, i od toga da li se ona iskazuje na osnovu bruto ili neto dobitka.

Najnovija finansijska teorija je zato promovisala, praksa prihvatila pristup iskazivanja efekata investicionih projekata preko njihovog delovanja na tokove novca.

Prednost neto novčanog toka, odnosno finansijskog pristupa neto novčanim tokovima, u odnosu na računovodstveni, bazirana na njegovom diferencijalnom dobitku su:

- razumljivost donosioca odluka, čak i onima koji nisu dovoljno finansijski obrazovani;
- determinisanost buduće investicione aktivnosti preduzeća upravljaju neto novčanim tokovima.

Ovde će se ukazati samo na bazične elemente projekcije novčanih tokova u funkciji proračuna i valorijacije efekata investicionih programa koja čine:

- inicijalno, kao i svako kasnije kapitalno ulaganje u realizaciju datog projekta kao novčani odliv;
- neto povećanje budućeg toka gotovine koje se očekuje od projekta, odnosno tok godišnjih finansijskih koristi u ekonomskom veku projekta;
- iznos gotovine koji će biti oslobođen kada se projekat likvidira po sistemu svog veka trajanja kao novčani priliv.

Kao osnovni kriterijum investicija u finansijskoj literaturi se navode cena kapitala i standardna stopa prinosa.

Cena kapitala kao kriterijum se bazira na nespornoj činjenici da kapital bez obzira na njegove izvore ima svoju cenu na logici da vredi ulagati ako će očekivana zarada po osnovu drugih realno raspoloživih alternativnih investicionih mogućnosti. Pri tome, utvrđivanje cene kapitala preduzeća je od suštinskog značaja za svako preduzeće ne samo u funkciji

investicionog kriterijuma, nego optimalnog komponovanja njegove finansijske strukture.

Za razliku od cene kapitala, klasične stope prenosa na uložena sredstva su više empirijski zasnovan kriterijum, koji uprkos tome ima dosta široku praktičnu primenu. Kao standardne stope prinosa susreću se ili koriste:

- željena stopa prinosa na nova ulaganja;
- stvarna stopa prinosa na postojeća ulaganja;
- prosečna stopa prinosa za datu privrednu granu;
- ciljna stopa prinosa na postojeća ulaganja.

Metode procene

Investiciona odluka će biti ili usvajanje ili odbijanje predloga na osnovu 4. metode određivanja potrebnog kapitala:

1. metode procene stope povraćaja;
2. metode perioda povraćaja;
3. metoda interne stope povraćaja;
4. metoda neto sadašnje vrednosti.

Procena stope povraćaja

Ova obračunska mera predstavlja odnos prosečnog godišnjeg dobita posle oporezivanja i investicije u projekat. U prethodnom primeru nove mašine, prosečna godišnja knjigovodstvena zarada za petogodišnji period je 2100\$, a početno ulaganje u projekat je 18000\$. Zbog toga: Prosečna stopa povraćaja = $2100/18000=11,76\%$.

Kada bi prihod bio promenljiv za posmatranih 5 godina, prosek bi bio obračunat i uključen u brojilac. Jednom, kada je prosečna stopa povraćaja za investicioni predlog izračunata, može se uporediti sa traženom stopom povražaja da bi se određeni investicioni predlog prihvatio ili odbacio.

Ako se pretpostavi da se ima 3 investiciona predloga, od kojih svaki košta 9000\$, i od kojih svaki ima ekonomski i amortizacioni vek 3 godine i tako će se očekivati da će svaki od 3 investiciona predloga osigurati knjigovodstveni profit i tokove novca kroz naredne 3 godine, sledi:

PERIOD	PROJEKAT A		PROJEKAT B		PROJEKAT C	
	profit	priliv	profit	priliv	profit	priliv
1	3000	6000	2000	5000	1000	4000
2	2000	5000	2000	5000	2000	5000
3	1000	4000	2000	5000	3000	6000

Svaki predlog će imati istu prosečnu stopu povraćaja $29999/90000$ ili 22,22%, a ipak, retko će koje preduzeće posmatrati projekte kao jednako povoljne. Najveći broj preduzeća dalo bi prednost projektu A koji osigurava veće ukupne novčane koristi u prvoj godini. Zbog toga, prosečna stopa povraćaja ne udovoljava svim željama kao metoda izbora projekta.

Razdoblje povraćaja investicionog projekta govori o broju godina koje su potrebne da se nadoknadi početno novčano ulaganje. To je odnos početnog ulaganja i godišnjih novčanih prihoda u periodu povraćaja. U primeru to iznosi: Period povraćaja = $18000/5700=3,16$ godina.

Ukoliko godišnji novčani prihodi nisu jednaki, posao oko izračunavanja je nešto teži. Ukoliko se pretpostavi da su godišnji novčani prihodi u prvoj godini 4000\$, u drugoj i trećoj godini 6000\$, a u četvrtoj i petoj godini 4000\$, u prve tri godine 16000\$ početnog uloga će biti

vraćeno a u četvrtoj godini sledeće 4000\$. U odnosu na početno ulaganje od 18000\$, period povraćaja je 3 godine + 2000\$/4000\$ ili 3,5 godina.

Interna stopa povraćaja

Opšti je utisak da zbog raznih nedostataka stope internog povraćaja i metode perioda povraćaja, metode diskontovanih tokova novca osiguravaju objektivniju osnovu za ocenjivanje i izbor investicionih projekata. Ove metode uzimaju u obzir veličinu i razgraničenja vremenskih tokova novca u svakom periodu veka projekta. Metoda diskontovanih tokova su interna stopa povraćaja i metoda sadašnje vrednosti.

Potrebno je napomenuti da je interna stopa povraćaja investicionog predloga diskontna stopa koja izjednačava sadašnju vrednost očekivanih izdataka sa sadašnjom vrednošću očekivanih primanja.

Označava se sa r , tako da:

$$\sum_{i=0}^n (A_i/(1+r)^i) = 0$$

gde je : A_i – povraćaj novca u periodu t , bilo da se radi o troškovima ili prihodima,
 n – period u kojem se očekuje priliv novca.

Ako se prosečan novčani trošak događa u vremenu 0, prethodni izraz se može prikazati kao:

$$A_0 = A_1/(1+r) + A_2/(1+r)^2 + \dots + A_n/(1+r)^n$$

Prema tome, r je stopa koja diskontuje buduće prilive novca – A_1 - A_n da bi ih svela u početni trošak u periodu 0. U primeru problem se rešava na sledeći način :

$$1800 \text{ NJ} = 5700/(1+r) + 5700/(1+r)^2 + 5700/(1+r)^3 + 5700/(1+r)^4 + 5700/(1+r)^5.$$

Rešavajući ovaj zadatak dolazi se do rešenja da je interna stopa povraćaja 17,57%.

Kriterijum na osnovu kog se prihvata ili odbacuje projekat, jeste poređenje interne stope povraćaja sa traženom stopom povraćaja. Ako je interna stopa veća od tražene stope, projekat se prihvata, ako je manja projekat će biti odbačen. Ako je tražena stopa 12%, primeni li se ovaj kriterijum investicioni predlog koji je razmatran biće prihvaćen. Prihvatanje projekta čija je interna stopa povraćaja veća od tražene stope povraćaja, trebalo bi da rezultira povećanjem tržišnih cena deonica, zbog toga što preduzeće prihvata projekat sa povraćajem većim nego što je zahtevano.

Neto sadašnja vrednost

Metoda interne stope povraćaja i metoda sadašnje vrednosti kod koje se diskontuju povraćaji novca, imaju sličan pristup u planiranju neophodnog kapitala. Metodom sadašnje vrednosti svi povraćaji novca se diskontuju na trenutnu vrednost, koristeći traženu stopu povraćaja. Neto sadašnja vrednost za predloženu investiciju dobija se po obrascu:

$$NSV = \sum_{t=0}^n A_t/(1+k)^t$$

gde je: k - tražena stopa povraćaja.

Ako je zbir ovih diskontovanih tokova novca 0 ili više, predlog se prihvata, ako je zbir manji od 0, predlog se odbacuje. Drugi način na koji se može pokazati kriterijum prihvatanja je sledeći: Projekat će biti prihvaćen ako sadašnja vrednost novčanih prihoda bude veća od sadašnje vrednosti novčanih rashoda. Pristup kriterijumima prihvatanja u ovom slučaju je isti

kao i princip kod interne stope povraćaja. Ako je tražena stopa povraćaja takva da osigurava povraćaj koji investitori očekuju da će preduzeće zaraditi na investicionom projektu, a preduzeće prihvati predlog sa neto sadašnjom vrednošću većom od 0, tržišna cena deonica bi trebala da poraste. Preduzeće će prihvatiti projekat čiji je povraćaj sredstava veći od povraćaja koji bi bio potreban da bi tržišne cene deonica ostale nepromenjene.

Ako se pretpostavi da je tražena stopa povraćaja posle oporezivanja 12% lako je utvrditi neto sadašnju vrednost u datom primeru pomocu sledećih izraza:

$$NSV = -18000 + 5700/(1+0,12) + 5700/(1+0,12)^2 + 5700/(1+0,12)^3 + 5700/(1+0,12)^4 + 5700/(1+0,12)^5 = -18000 + 20547 = 2547\$$$

Indeks profitabilnosti

Indeks profitabilnosti projekta ili odnos korisnosti i troškovi, odnos je sadašnje vrednosti i budućih priliva novca i početnih troškova. Izračunava se sa sledećom formulom:

$$Pi = \left[\sum_{t=1}^n At / (1+k)^t \right] / Ao$$

a za dati primer indeks profitabilnosti iznosi:

$$Pi = 20547 \text{ NJ} / 18000 \text{ NJ} = 1,14$$

Uvek dok je indeks profitabilnosti 1 ili veći, investicioni predlog je prihvatljiv. Pri izračunavanju indeksa profitabilnosti izračunava se neto indeks, a ne agregatni indeks. Agregatni indeks je odnos sadašnje vrednosti novčanih prihoda i sadašnje vrednosti novčanih rashoda. Neto indeks se koristi da bi se napravila razlika između početnog troška i budućih novčanih troškova.

Inflacija i odluke o investiranju

Kad postoji inflacija to se manifestuje manjom realnom stopom povraćaja i smanjenom motivacijom preduzeća da investira kapital. Stanje priliva novca poboljšao bi se uvođenjem progresivne metode amortizacije, ali i pored toga prethodna tvrdnja bi opet bila na snazi. Preduzeća jednostavno u vreme inflacije nisu motivisana. Samim tim ulažu manje, traže investicije sa kraćim periodom povraćaja.

Kod procenjivanja priliva novca važno je da preduzeće uzme u obzir anticipiranu inflaciju. Vrlo često postoji pretpostavka da će u veku trajanja projekta nivo cena ostati isti. Pristrasnost se javlja u procesu selekcije, jer je tražena stopa povraćaja projekta obično zasnovana na tekućim troškovima kapitala, koji u sebi sadrže premiju za anticipiranu inflaciju.

Izračunavanjem neto tokova novca na ovaj način dobija se isti rezultat kao i ranije kada je nakon oduzimanja amortizacije utvrđen neto prihod, obračunati porezi na takav prihod i onda oduzet porez od godišnjih ušteda da bi se dobio neto tok novca.

Matematički izraz:

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$$NSV = \left[\sum [It(1,10)^t - Ot(1,10)^t] \cdot (1-0,40) + 20000 \cdot 0,40 \right] / (1,13)^t - 100000 = 11056 \text{ NJ}$$

gde je: It – priliv novca u posmatranoj godini, Ot – trošak novca u posmatranoj godini, t – posmatrana godina.

Rezultati su pristrasni uprkos tome što u određenom smislu diskontna stopa obuhvata elemente anticipirane buduće inflacije, dok procena tokova novca ne sadrži te elemente. Pretpostavka da postojeća stopa inflacije 10% i da se očekuje takvo kretanje u sledećih pet godina, znači da ukoliko novčana primanja i novčani izdaci rasli po toj stopi, neto sadašnja vrednost projekta bi bila prema prethodnom izrazu 11056\$.

Rizici prilikom investiranja

Rizik i neizvesnost kod investiranja

Sve odluke koje se odnose na kapitalne investicije su prikazivane sve do ovog koraka kao da se bez izuzetaka temelje na tačnom predviđanju budućih troškova i prihoda. Projektovana stopa prinosa u slučaju konkretno datog predloga u tom slučaju proističe iz takvih cifara. U prikazanim primerima vreme trajanja investicija je strogo definisano. Malo je investicionih projekata koji se ograničavaju na precizno naveden životni vek izložen u prvobitno datim u svrhu predviđanja, pošto je bilo koja, tj. svaka odluka u vezi sa utroškom kapitala uvek podložna nepoznatom razvoju događaja u kasnijem periodu. Tok budućih dešavanja može da utiče na troškove investicije, na trenutne troškove, na veličinu tržišta, pa prema tome i na finalni obim prodaje, kao i na cene po kojima je moguća prodaja proizvoda. Zato se može reći da je vrlo teško postojanje jedne precizne tabele, kalkulacija koja bi okupila i obuhvatila sve nepreračunljive i nedokučive uticaje i veličine koje mogu da utiču na ishod nekog projekta, a poslovne odluke se ipak zasnivaju na tipu jedne jednostruke stope prenosa. Navedeno ne znači da su kriterijumi razvoja koji su upotrebljavani i prikazani loše osmišljeni i postavljeni. Oni na najbolji mogući način iskorišćavaju informacije na kojima se zasnivaju. Predstavljaju konvencionalan pristup valorizovanja investicija, procenjuju buduće ishode kao rezultat najbolje pogodjenog vremenskog rasporeda budućih događaja, nivoa budućih troškova i prihoda. Uz tako najbolje pogodjene, predskazane jedinstvene stope prinosa rukovodilac može da primeni lično prosudjivanje izgleda predloženog troška da preživi, opstane ili da donese zaradu. Drugčije rečeno, naslućivanje, odnosno nagađanje i dalje igra centralnu ulogu pri odabiru investicija. Bez obzira na to, tačno je kad se kaže, da je tokom poslednjih dvadeset godina u vezi sa investicijama iskustveno prošlo kroz znatne modifikacije u metodama i tehnicima evaluacije predloga. Medjutim, ta unapređenja nisu vezana za vremenski prilagodjene i podešene stope prinosa koje uzimaju u obzir vremensku vrednost novca.

Navedene promene u metodi ipak nisu dovoljne same po sebi da osiguraju najbolje moguće alate za donošenje odluka pri analizi investicija u budućnosti. Čak i da se prihvati da je rasuđivanje iskusnog direktora u stanju da bude održiv kriterijum pri izboru između alternativnih investicionih zahvata, ono ipak nije dovoljno da mu omogući da donese optimalnu odluku. To se može izvesti samo znatnim iskustvom u vezi sa specifičnim tipovima investicija. Neko stečeno ranije iskustvo u vezi sa konkretnim predlozima za trošenje kapitala može svakako da čini osnovu rasuđivanja za procenu sličnih projekata u budućnosti. Kad neko preduzeće puno puta ulazi u male investicije, verovatnoća da će konačne varijacije razlikovanja između predviđenih i stvarnih vrednosti doći do uprosečavanja koje važi za čitav niz takvih projekata. U tim slučajevima jedan jedinstveni indikator prihvatljivosti i poželjnosti projekta može biti dovoljan.

Nasuprot tome, kad se od nekog projekta za izdatak kapitala očekuje da će da izvrši uticaj na postojeći kapital preduzeća i na strukturu njene aktive, ovim zaključcima u vezi sa dovojnošću jednog jedinstvenog kriterijuma najboljeg predviđanja ne može da se pruži podrška. Vrlo je verovatno slabo i neuspešno stvarno odvijanje velikog projekta da izvrši znatan uticaj na finansijski uspeh preduzeća. Posledično gledano, dalje dividendski potencijal preduzeća i njegova tržišna snaga mogu da budu teško pogođeni i oštećeni, pa prema tome i snaga i sposobnost preduzeća da prikupi dalji dugoročni kapital namenjen ekspanziji, mogu da pretrpe značajna ograničenja. U slučaju predloga za prilično veliki izdatak kapitala suštinski je neophodno više informacija u vezi s mogućim budućim ishodima i izgledima za efikasnost projekta, u cilju boljeg dugoročnog korporativnog planiranja.

Unapređivanje podataka za odlučivanje

Razrada unapređivanja i predviđanja treba da budu najvažniji prioritet po pitanju dolaženja do prave odluke. Sve dok je širenjem tržišnog istraživanja, na primer, ili ekstrapolacijom moguće upravljati zabudne greške i nezavisnosti, te radnje treba preduzimati i vršiti. Međutim, isto kao što je cena ocenjivanja uvek bila i ostaje glavna briga rukovodećih računovodja, tako i troškovi prognoze treba da se u odnosu na dodatnu korist koju proizvode. Tamo gde je neophodan trošak da bi se doseglo minimalno uvećanje preciznosti prognoziranja, može i te kako da se pokaže da je takav izdatak neophodan.

I ovde većina rukovodilaca može da navede primere optimalistički i pesimistički raspoloženog procenjivanja. Jedan vrlo često korišćen metod za suzbijanje prikrivenih rizika i neizvesnosti javlja se tamo gde donosilac odluke apeluje za veći prinos od nekog predloga koji on sam smatra rizičnim. Kada izgleda da u onim mnogim varijabilnim činiocima koji određuju rentabilnost nekog projekta mogu da su skrivene znatne nezavisnosti, podizanje procentualnih izgleda da projekat bude odbijen, možda može da predstavlja nekakav štit za upuštanje u neizvesnost. Dobronamerno objašnjenje, međutim ovde glasi da je taj metod na neki način slab pošto donosilac odluke nikada ne može da zna veličinu konačnog rizika koji prihvata, a ne može i da zna pravu meru rizika kojima se odupire, bolje reći koje izbegava. Šta više, praksa neobrazloženog podizanja stope odbacivanja može da ograniči i suzi protok rentabilnih prilika koje su neophodne za trajno postojanje i rast i kvalitativni razvoj preduzeća.

Ispitivanje rezultata, studije će ukazati na one procene koje su kritične za ishod datog predloga. Po tom osnovu mogu da se naglase one oblasti u kojima je neophodno dalje istraživanje tačnosti i preciznosti prognoziranih podataka. Dodatna i posebna pažnja posvećena tim oblastima koje su od izuzetnog značaja za produktivnost predloga može i te kako da omogući poboljšanje prognoze. Najblaže gledano ti brojevi bi trebalo da budu jedna čvršća i pouzdanija osnova za donošenje zaključaka. Prognoze date investicije i konačna evaluacija investicija će pružiti značajnije informacije onom ko donosi odluke, srazmerno troškovima prognoziranja i raspoloživim znanjem.

Literatura

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Rezultati treba da su jasno prikazani, uz poželjno korišćenje tabela i grafikona.

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U ovom delu se sumiraju nalazi komentarisani u diskusiji. Izbegavati opširna objašnjenja. Poželjno je da se istakne praktična primenljivost rezultata rada.

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A WORD FROM THE EDITOR

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In front of You is a new issue of "Management in Sport" - a scientific journal in the field of management in sport. Publisher is the Faculty of Sport Alfa University in Belgrade. The journal is an important source of new scientific and technical information, as the only of its kind in the region. The editorial board of the journal is committed to upholding the reputation and the level of significance of the magazine. The journal is published annually with the works to be published in Serbian and English.

We invite all interested researchers in the field of management in sport and other related fields associated with the sport to its scientific and technical projects contribute to the development of the magazine.



Violeta Šiljak, General Editor

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THE FACTOR STRUCTURE OF TECHNICAL AND TACTICAL ACTIVITY OF THE WORLD TOP TABLE TENNIS PLAYERS DURING MATCHES

Goran Kocić

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Abstract

The survey conducted for determining the fundamental dimensions of the space of technical and tactical activities the 154 matches in which 77 players have performed in the finals at the Olympic Games held in Beijing in 2008. were analyzed. Technical and tactical activity has been described through the set of 16 variables.

The factor model described 75.9659% of the total registered variance. The factor analysis of the matches data produced the factor structure with six fundamental dimensions that are interpreted as follows: The success of the players in the match factor, The match duration factor, The morphological dimensionality factor, The efficiency of the players in the defense factor, The player efficiency in the counterattack factor and The service efficiency in the match factor.

Keywords: Olympics in Beijing / technical and tactical activity / factor model.

Introduction

In the systematic training process, which table tennis players are subjected to, the analysis of competitive activities is the basis for the planning and programming of training. In this way, objective information about the presence and efficiency of execution of the basic technical and tactical elements in table-tennis game are obtained. Based upon these data and their analysis the relevant guidelines for providing initial and stepwise selection in the table-tennis sports can be identified, as well as upon the information making possible to rationally plan for the training process. The basis for such training approach should be the model's characteristics of elite table tennis players, which are currently unknown. This requirement is further compounded by lack of knowledge of the structure of space the technical and tactical elements of the game are manifested in.

Therefore, the research objectives are identified as a need for exploration of the structure of technical and tactical activities of top players in the world. In fact, virtually infinite number of different ways of performing technical and tactical elements, used by top table tennis players in the world, certainly can not be described through a limited set of fundamental skills, which were necessary to identify using appropriate methodology. Identification of the latent dimensions responsible for the variability that may occur in the observed technical and tactical elements, was the main task of the research. In this sense, conceptual apparatus adequate to the need of exact exploitation of latent structure has been applied in the research, belonging to the multivariate statistical techniques and procedures.

In the scientific papers of researchers who analyzed the technical and tactical activity of table tennis players in the competition conditions prevailing description of athlete performance table-tennis players in major competitions - the Olympic Games and other major international tournaments (Cai, 1996). Thus, the analysis of women's singles at the 43rd World Table Tennis Championship points to the superiority of women's teams of China, both in technical and tactical sense, and in terms of mental qualities improving every day. The comparative analysis of Chinese and European players who have played in the doubles competition was conducted at the same competition (Tang, 1997). It was pointed out that the technique in capturing the position of service attacks, as well as for the defense of the service, were the main determinant of success in the game. The individual techniques of top players were analyzed - Ryu Seungmina during the finals at the 28th Olympic Games held in Athens (Hao et al., 2007). The analysis included semi-final and final matches, and have used the method of documentary review, video observation, calculation of the index and the three-phase mathematical description of the statistical techniques of technical-tactical activities.

The very scarce research handle technical and tactical elements of the top players in that table tennis surely including Zhang research (Zhang, 2006) in which the success of the Chinese table tennis players is primarily attributed to the training of tactical improvement of players quality. Practice tasks are carefully designed based on quantitative indicators which are often science-based analysis, the authors illustrate the description of the competitive behavior of players upon three levels of mastery. This work should certainly include the analysis carried out on the population of Chinese junior table-tennis players (Li et al., 2000).

Results of the factors analysis affecting the victory or the defeat of table-tennis matches may be important for this study (Wu et al., 1998). Authors in conclusion of the analysis included the top table tennis players emphasize that the results of the top sports results can only be achieved with significant outstanding voluntary component that should be followed by other psychological characteristics combined with excellent technique, tactical and physical training. Interestingly, the survey for the identification of items had the most significant factor influencing the effective playing table tennis (Wu and Zhang, 1993). The authors have identified the speed and spin as key factors in the study that proved that they are in a highly significant functional associations. The instrumentarium was used for research purposes, which is specially developed for the quantitative determination of the relevant spin parameters, which application came across some interesting facts about the connection between the level of mastery of sports players, physical properties of the racket, hand movements and techniques of spin intensity (Wu et al., 1998).

Generalization and fusion factors affecting the efficiency of table tennis players in terms of sports competition was the subject of the research conducted by Raz (Raz, 1991). The author emphasizes the need to lead the player to a state that maximizes his potential by developing individual methods.

Materials and Methods

The study was designed as observational, exploratory, *ex post facto* study, which aims to investigate the structure of the space in which it manifests technical-tactical activities of top table tennis players in terms of sports competition.

From the population of top table tennis players for the purpose of research was reviewed a sample of respondents including players participants in the final tournament of the Olympic Games held in Beijing in 2008. The effective sample of respondents are 77 players, which along with the fact that these are the best players in the world, is the sample on which it is possible to apply appropriate statistical procedures.

The sample was formed of 77 matches, which in statistical terms is a large sample needed for of relevant conclusions. Each of the matches was analyzed twice, for the winner and for the defeted, which makes the effective sample of 154 matches observation unit.

For each of the contestants were collected data in the following variables: the country a player comes from - PSTATE, Age of players - PAGE, Body mass of players - PBM, Body height of player - PBH, Body mass index of players - PBMI, Dominant hand players - PDH, Number of matches played by players - PNOMATCHS, Number of sets played by player - PNOGAMES, Final standings-ranked player - and PPLACER Players category - PCAT.

Matches were analyzed as described by the following variables: outcome of the match - MRESULT, round competition - MROUND, number of sets in a match - MNOGAMES, duration of a match - MTIME, conquered points in the match - MPTS, total service points won in the match - MSERVICE, percentage of points won by service in the match - MSERVICE%, total points scored by the third match ball - M3BALL, percentage of points won by third ball of the match - M3BALL%¹, total points scored in the match napadom2 - MATTACKING, attack percentage of points won in the match - MATTACKING%², total points scored defense in the match - MDEFENDING, percentage of points scored in the match - MDEFENDING%, total points scored in the match counterattack - MCTRATTACKING, percentage of points scored in the match counterattack - MCTRATTACKING%, total points scored in the match in another way - MOTHER and the percentage of points won in another way in the match - MOTHER%.

All collected data were analyzed according to the methodology of statistical analysis required to make judgments about relevant research hypotheses.

Statistical processing included: descriptive statistical analysis, analysis of quantitative differences, correlation analysis and multivariate analysis.

Results and Discussion

Table 1. Eige

Value	Eigenvalues			
	Eigenvalue	% Total variance	Cumulative Eigenvalue	Cumulative %
1	3.555291	22.22057	3.55529	22.22057
2	2.692100	16.82563	6.24739	39.04619
3	2.019984	12.62490	8.26737	51.67109
4	1.441921	9.01201	9.70930	60.68310
5	1.357672	8.48545	11.06697	69.16855
6	1.087576	6.79735	12.15454	75.96590

¹ A term used to describe the activities of players who served, and who often scores points by so called third ball, with service is the first ball and return service the second ball.

² Point scored by attacking - severe blow, top spin, aggressive block, etc.

Table 2. Factor loadings

Variable	Factor Loadings					
	Normalized Varimax					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
MRESULT	0.559738	0.043839	-0.172062	0.406121	0.048737	0.353401
MROUND	-0.706194	0.009909	-0.123921	0.343254	0.077410	0.265567
MNOGAMES	-0.199139	0.839389	0.009372	0.291993	-0.212467	0.145371
MTIME	0.040351	0.857774	0.168898	0.125863	-0.221481	0.069532
MSERVICE	-0.129454	0.232249	-0.291623	0.428373	0.031862	0.520290
M3BALL	-0.044935	-0.010332	0.047909	-0.007092	-0.071928	0.862389
MATTACKING	0.158826	0.836666	-0.082284	-0.161599	0.184978	-0.038974
MDEFENDING	-0.069100	0.123396	0.167368	0.861295	0.040607	-0.005679
MCTRATTACKING	0.155259	0.022564	0.111560	0.005380	-0.847469	-0.022327
MOTHER	0.012286	0.108838	-0.084500	-0.036633	-0.770182	0.040540
PAGE	0.186961	0.219639	0.342382	-0.382833	0.141163	0.434434
PBM	-0.147022	-0.051734	0.900130	0.095835	0.003849	0.020265
PBH	0.033275	0.109283	0.896346	-0.015178	-0.033385	-0.025453
PNOMATCHS	0.938130	-0.081900	-0.042796	0.006328	-0.072801	0.035904
PNOGAMES	0.902600	0.082250	-0.042712	0.041437	-0.058435	0.086262
PPLACER	-0.878287	-0.035501	0.025189	0.139078	0.046936	0.111812

In addition to the body mass index variable, this analysis excluded variables that represent aggregate indicators, such as variable points scored in the match, and the nature of any performance indicators are all expressed in percentage variables. Their inclusion in the analysis of the correlation matrix caused collapse during its transformation process, making it impossible for further analysis.

Factor analysis was conducted into the manifest space defined by 16 research variables. The results point out that the foundation of latent structure of space determined by six fundamental dimensions (Table 1). Such a model described 75.9659% of the total variance registered.

In the model of latent dimensions of the analyzed area 1. Varimax factor extracted drew 22.2205% of the total variance registered. This factor is significantly saturated five manifest variables analyzed (Table 2). Salient values of this latent dimension projected the following variables:

- Number of games played by player - PNOMATCHS (0.93813)
- Number of sets played by player- PNOGAMES (0.9026)
- The final rank of players - PPLACER (-0.878287)
- The competition turn - MROUND (-0.706194)
- Outcome of the match - MRESULT (0.559738)

The structure of the first extracted Varimax factor indicates the logical relationships of variables that are logically consistent and positive, so that the latent dimensions can be interpreted as a factor of the players success.

Further analysis of the projection of variables that have been saturated by this factor below the threshold of statistical significance, it can be concluded that the success of players displayed a tendency to bind with the indicators of efficiency in service, in the attack and counterattack. Of interest for further analysis of the trends and performance of connecting older players, which indicates the importance of experience, but less pronounced body mass,

which probably speaks for intense physical training and sports loads of successful contestants. In the latent dimensions analyzed model space 2. extracted Varimax factor drew 16.82563% of the total variance registered. This factor is significantly saturated 3 manifest variables analyzed (Table 2). Salient values of this latent dimension projected the following variables:

- Duration of a match - MTIME (0.857774)
- The number of sets in a match - MNOGAMES (0.839389)
- Total points scored in the match attack - MATTACKING (0.836666)

The nature of the leading variables salient other saturated projections extracted Varimax factor allows to be interpreted as a factor of the match. Of interest for the analysis is the fact that higher scores on this factor, and longer duration of the match, the players scoring more points by attacking.

In the model, the latent dimensions of the analyzed space 3. Varimax factor extracted drew 12.6249% of the total variance registered. This factor is significantly saturated 3 manifest variables analyzed (Table 2). Salient values of this latent dimension projected the following variables:

- The weight of players - PBM (0.90013)
- Body height of player - PBH (0.896346)

In addition to these variables on this factor has projected unsalient, but still statistically significant and the value of the variable players age - PAGE (0.342382).

The structure and relationships between variables saturated third extracted Varimax factor allow to conclude that this is a factor of morphological dimensionality.

Analysis of the relationship of this factor with the technical and tactical efficacy variables talks about the tendency that players with lower scores on this factor are characterized by a higher probability of winning the match and achieving greater efficiency in service points, but with reduced efficiency in achieving the elements of the defense points.

In the model, the latent dimensions of the analyzed area fourth Varimax factor extracted drew 9.01201% of the total variance registered. This factor is significantly saturated five manifest variables analyzed (Table 2). Salient values of the latent variable dimension projected total points scored in the match defending - MDEFENDING (0.86 295).

In addition to the variables in this factor were projected unsalient, but still statistically significant values of the following variables:

- Total points scored in the match service - MSERVICE (0.428373)
- Outcome of the match - MRESULT (0.406121)
- Age of players - PAGE (-0.382833)
- Turn the competition - MROUND (0.343254)

Leading technical and tactical efficiency variable saturated salient fourth Varimax factor determines its nature, and therefore the latent dimension is defined as the efficiency factor of players in defense.

Interesting are the functional relationships that can be seen from the structure factor. The players who have a viable defense and have a high probability of being more efficient in service. All this follows the younger chronological agebut also the more likely winning the match.

In the model, the latent dimensions of the analyzed area fifth Varimax factor extracted drew 8.48545% of the total variance registered. This factor is significantly saturated in 2 manifest variables analyzed (Table 2). Salient values of this latent dimension projected the following variables:

- Total points scored in the match counterattack - MCTRATTACKING (-0.847469)
- Total points scored in the match in another way - MSERVICE (0.52029)
- Age of players - PAGE (0.434434)

In addition to these variables on this factor is projected unsalient, but still statistically significant and the value of the variable outcome of the match - MRESULT (0.353401).

The first two variables that salient projections saturated sixth extracted Varimax factor are functional in high regard. The nature of these variables requires their thorough consideration, because the service is the first shot of the set, which is to a large extent determined the development of the battle that follows.

Efficiency of service is reflected primarily through direct scoring points, but also by bringing the opponent in a subordinate position, which usually manifests itself in points scored by third ball. In analyzing the nature of this factor should be kept in mind that the variable efficiency of the service is relatively high projections connected with three latent dimensions, which results in a reduction of its projection on the factor that is interpreted. Above leads to the conclusion that it is a factor of efficiency of the service.

Players with higher scores on this factor and the older players have an increased probability of winning the match.

Conclusion

The study characterized as the observational exploratory *ex post facto* study investigated the structure of space in which to manifest technical and tactical activities of top table tennis players in terms of sports competition.

The survey was conducted among 77 players who participated in the final tournament of table tennis competition at the Olympic Games held in Beijing in 2008. The sample analyzed included 154 matches observation unit and analyzed 846 sets. Each of the players has been described in more than 9 variables. Technical and tactical activities of players in matches and sets was described by a set of 17 variables.

In terms of basic research, where the goal was tasked to be selected on the basis of technical and tactical elements, performed by a top table tennis players in terms of competition, provide insight into the structure of the space of technical and tactical actions, it was concluded that it is fully achieved.

The factor analysis of matches data produced a factor structure with six fundamental dimensions that are interpreted as follows:

- The performance of players in the tournament factor
- The match duration factor,
- The morphological dimensionality factor,
- The efficiency defenders factor,
- The efficiency of players in counterattack factor and
- The efficiency service in the match factor.

The fact that the study included all the players and all the matches of the final tournament in the Olympic table tennis of the Olympic Games held in Beijing in 2008, gives this study special significance. We can practically talk about the research that is conducted on a sample, but the population is really the best athletes in the world. Although the selection of variables was dictated by the available statistics, the results prove the claim that the tactical technical activity of the player was adequately covered with a minimum loss of validity.

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ENTROPY AND THE GRAVITATIONAL FORCE IN THE SPINAL COLUMN

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Abstract

Spine column have the same way of development like the Universe it self. Our thoughts were that we need to change a clinical approach to the spinal problematic and try to understand spinal disorders from another perspective. That „orbital mentally cross“ is necessary for getting new insight of spinal disorder development. This paper is new clinical angle and new way of approaching to the spine disorders thematic.

Keywords: spine / macro system / micro system / the gravitational force

Introduction

Entropy (Greek *ἐντροπή*, “turn inward”), introduced by Rudolf Julius Emanuel Klauzijus 1865; sheet size that can be viewed as a measure of “related” material energy of a closed system, ie. energy, which, in contrast to “free”, it can not be converted into work. The opposite term is ectropion. From Boltzmann (Lectures on the principles of mechanics, in 1897. until 1904) entropy in the sense of “kinetic theory of gases” means the heat content of a system as the energy of motion of its molecules.

Entropy is the tendency of the system to spontaneously go into greater balance disorder, ie, entropy is a measure of disorder of the system. The largest arrangement of the system temperature is absolute zero. Since it can not be reached, the third principle of thermodynamics (Nernst theorem) is taken to be the entropy asymptotically approaches zero when the system temperature approaches absolute zero. All spontaneous processes (development of the organism as a whole) are taking place in the direction of increasing entropy.

According to the second law of thermodynamics, the entropy of a closed system can only increase to a maximum and remain constant. This means that the system becomes more chaotic over time and less useful/stable with respect to the extraction of useful work from the system, ie. functioning the regularity of vertebral column in its entirety.

Entropy (ENT) as a measure of that amount of disorder of the system, can according to the above considerations be seen as the pursuit of the body or system to be developed and transferred to a new higher state of disorder. Without it, certainly there is no development, nor the formation of life, planets, galaxies, and even spinal system ie. spinal column. On the other hand, if the spinal system developed without control or, if the entropy takes place very quickly (uncon-

trolled process where $Gf \ll Ent$), then quite certain ability to form a system of spinal disorders and deformities. A factor that largely controls the entropy, is the force of gravity (Gf). Without its influence, entropy would completely “destroy” any structure, and vice versa.

Therefore, we can assume that the underlying spinal disorders: kyphosis, lordosis and scoliosis, are a kind of uncontrolled forms of entropy.

To be more specific, kyphosis and lordosis are entropy in 3D (two space and one time dimension) or sagittal plane, and scoliosis is disordered system in a 4D (three space and one time dimension) and is the most severe form of spinal deformity. Scoliosis are divided into functional and structural types. According to this division, the entropy can be similarly classified. Functional scoliosis are less disorganized while structural scoliosis represent a high level of entropy.

The development of the healthy human body and the spine represent the interplay between the (equilibrium) of gravity and entropy. In general, normal growth and development of the spinal system, ie. his aspiration for development, “is controlled by” the force of gravity, which by its nature tends to “infiltrate” into the center of the structure, and thus controls the level of “non - orderliness” of the system.

Without the opposing forces, gravity would quickly summarized vertebral body into a “black hole” of small diameter. In this context, the emergence of hemivertebrae can be viewed as the product of the gravitational effects of strong force that entropy could not overcome completely. This deformity is an imbalance between the force of gravity and entropy in favor of the first.

However, in case of the normal development of the vertebral body, the pressure acting outwards and undermines the gravity force, preventing collapse and thus keeps the body in the normal morpho-functional frame.

The pressure which “rescue” the vertebral body from collapse, originates from the entropy of osteogenetic forces and processes that take place within this structure, causing the movement of particles within the core with the tendency away of the body from the center (with a minimum level of entropy), maintaining this structure in equilibrium.

These reactions produce the energy needed to increase the entropy and energy to overcome gravity. Growth and development of the vertebral body requires large amounts of energy to counter the force of gravity and enable smooth development of the above structure. In addition to this, the forces with different origin (compression, torsion, shear) also hinder the proper development of the body of the vertebrae and other spinal systems.

But we are talking about primarily controlled or positive entropy (when the spinal body develop inside of healthy zone) and, when the gravitational force follows the increase of entropy with the level of organization which don't disturb the spinal system.

When we talk about the forces mentioned above, we have to accept a start from two assumptions:

- First, the extent to which the force of gravity overcomes the entropy, the entropy measure will be expressed and,
- Second, the force of gravity can proportionally affect the entropy and vice versa.

Division of entropy in the spinal system

First of all, the manifestation nature of entropy may have a positive or negative effect on the spinal system. Let us to explain this statement.

Assuming that uncontrolled or negative entropy prevents the proper development of the spinal system (balance between state where $Gf \approx Ent$ - positive effect of entropy), we can in principle agree to the following:

Entropy with low level of disorganization allow proper development of the spinal system as a whole, without adverse effects on the structure and function of the spine; Entropy of this the degree are correctible and successfully controlled by regular preventive exercise. However, if we find that the entropy is uncontrolled and threatens the proper development of the spinal system ($Gf < Ent$ - negative entropy effect), then we are talking about the following structural and functional disorders and therefore suggest two divisions:

- Entropy with low and moderate degree cause: rapid growth and development of the spine, creating (enabling) conditions for the development of general or local muscle imbalance between agonists and antagonists, which have resulted in the formation of kyphotic, lordotic and mild form of scoliosis (a disorder in 2+1D and 3+1D plane);
- Static instability of the spinal system as a whole or certain spinal unit, jeopardizing the proper functioning of the morphological structure and to a lesser extent. Control and correction of these disordered systems it became possible with remedial programs specific orientation to a greater extent or completely (depending on the degree of disorder of the spinal system). This form of entropy is manifested mainly in the pre-puberty and puberty period.
- Entropy of a large degree, cause: Uncontrolled growth, development and behavior of the spinal system allowing the development of general or local muscle imbalance between agonists and antagonists of the spine and causing severe forms of kyphotic, lordotic and scoliotic spinal type. Entropy of this type can be reduced only by surgical intervention.

Compression force and entropy of intervertebral discs – IVD (discus intervertebralis)

With morpho-functional aspects, the intervertebral disc is a specific spinal body which is permanently under the influence of compression, torsion, rotation and shear forces in greater or lesser form, and as such, the body has a complex role in the spinal system. The text below will explain the relationship between compression force and entropy of IVD.

When the compression force minimum, we can say that there is a positive effect of compression force and the entropy of the IVD, which is reflected in the following:

- Low intensity compression will have a low entropy, with minimal level of system disorder, enabling a proper and smooth functioning of the (development) of the intervertebral disc (balance between $Cf \approx Ent$ - positive effect of entropy). These forces at this level produce positive adaptive changes that result with proper functioning (and development) of IVD.

However, increasing the intensity of compression force (CF) over IVD, proportionally to the IVD load, increases the entropy of this system. In this case, we are talking about the negative effects of compression forces that are reflected in the following:

- Compression of low intensity forces can cause the condition of lower level system disorder, in which we have form of fibrous transformation, delamination, micro cracks, Brown's little colorization, etc. The initial degenerative changes in the disc were observed. It is necessary to unload the affected spinal unit to minimize entropy. In such a situation, it is necessary to establish stabilization of spinal system (most vulnerable spinal unit are documented at the level of L4 - L5 - S1). Also important is to constitute a spinal muscular endurance exercise program which will have positive effects at lumbar - abdominal level with proper lumbo-pelvic rhythm and functionality.
- Compression force which causing moderate intensity may provoke moderate degree of system disorder characterized by bulging states of IVD with larger annulus rupture and delamination (mainly by torsional force) with visible migration of the core

content of the IVD (mainly in the posterior - lateral part). In this category are possible higher IVD protrusion with mild lesions of neural structures (mild and moderate radiculopathy types). Visibly detectable degenerative changes of the disc (rim lesions, radial fissures, large-type calcifications, fractures epiphyseal plate - moderate type, etc.). In some cases, surgical treatment is recommended to relieve the affected spinal unit and minimize entropy. In such cases, it is necessary to provide spinal stabilization exercises.

- Compression force with high degree of entropy produce great disorder and chaos in spinal system with a massive extrusion and sequestration of IVD nucleus into the spinal canal, disturbing the structure and functionality of the IVD in posterior - lateral and central direction creating lesions of neural structures and functional loss. This clinical picture marks the high level of vulnerability of the spinal unit and its functionality, static instability, advanced process of IVD degeneration, changed spinal bodies and facet joints and also partial or general physical vulnerability in terms of normal locomotor function (movement). Regulation (stopping) the entropy of such motor - functional loss is possible only with individually designed exercises and surgical interventions in special cases.

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AXIOLOGICAL UNETHICAL BEHAVIOR ASPECTS OF ATHLETES AND SUPPORTERS

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Abstract

The text focuses on the axiological aspects of the appearance of unethical sportsmen's behavior and sport fans' behavior. The phenomena of drastic violations of ethic codes and moral codes by sport fans, clubs, organizations and sponsors is increasingly becoming a problem that can not only threaten the social and ecological environment, but also significantly affects the value system of sportsmen and fans. When sportsmen and fans do not respect the universal human values and specific positive values that sport maintains and develops, they obstruct or impede the realization of the positive direction of their own life's meaning.

Key words: axiology / ethics / behavior athlete / athlete's code of ethics / code of ethics of fans / the meaning of life

Introduction

Everyone has the right to practice sports and this is the activity with great significance for the Republic of Serbia. Since the times when the ancient Greeks started with the Olympic Games as the greatest sport events, the goal of the sport was to straighten the universal human values: rationality up to prudence, modesty up to self criticisms, self respect till ownership, restraint up to calmness, loyalty to sinecures, persistence and straight up to courage, fairness to fair play, self restrain to mildness, self control up to responsibility, compassion up to nobility, humbleness up to kindness, decency up to shines, as well as even sincere childish innocence up to human honesty and empathy up to love for main kind.

This is the reason why today sport has strategic value and significant for every society, especially for the psychophysical and spiritual development of children and youth i.e. for the future of the nation."Sport is in the Constitution of the Republic of Serbia defined as the category of significant public and social interest and it is mainly financed from the Republic of Serbia budget... Physical inactivity of children and further more of the adolescents has a very negative influence of their physical and spiritual development. This kind of situation jeopardizes public health and consequentially the health of an individual, while decreasing their base for top sport results. This is the reason why the children in sport are the basic priority for Strategy of sport development in the Republic of Serbia."¹

The general sport concept under lines in the first plane that the recreational must be characterized by regular exercise program (but also with appropriate competitions) aiming to

¹ The strategy of sport development in the Republic of Serbia for the period from 2009-2013. This strategy is published in "The Officially Journal" RS No. 110/208 from 2nd December 2008.

preserve health and physical properness. The number of people that consider sport more than struggle for score centimeter more or faster for part of a second is enlarging rapidly. The people who are recreatively practicing sport are enjoying themselves in several activities threw sport club organized groups or individually and their motive is health, physical preparedness and personal satisfaction. To conquer own individuality, to be active and to be familiar with all values of regular physical activities becomes more and more determination of hundreds of thousand individuals that are walking, running, driving bicycles and rollers, swimming, skiing, exercising, gain certain sport etc. Among the inhabitants of the EU the most active are people from Finland where 75% of the inhabitants are active in sports. After then are the Swiss 72%, people from Denmark 60%, people from Ireland 53% and Dutch with 52%, while among them inactive are the Greeks with only 26%. In the Republic of Serbia by the Law on sports² are define 22 terms and references related to sport: from sport activities³ and sport operations⁴ up to “expert sport supervisor”⁵

“The sport supporter” or “the sport audience” are not defined in any place, the only existing definition is for the term “spectator”.

It is possible that one can practice sport by himself, as it is in fitness⁶. This sport term marks the choice to live in a special life style that comprehends exercises, correct “sport diet”, programs for psycho relaxation in general various esthetical programs and all other retaliated with sports. Sport may be a life style that on the level of single individual does not necessarily have an audience, supporters and fans.

In the case of organizing sport competitions and sport manifestations (the common name for this two is “sport events”) then the existence of audience is included, and also “sport supporters” as integral part of sport competition. The journalist are often addressing to the sport supporters as to the “12th” player that is not related only to football where in fact there are eleven players but is also used for other in other sports no matter what is the real number of actual players.

On sport courts and arenas all over the world, and also in Serbia un-sporting behavior of sportsmen and unsporting behavior of supporters occurs, that could be characterized as unmoral, but also occurs behavior that could be from the aspect from the citizens security aspects and the aspect of the environment aspect becomes destructive, i.e. dangerous and that jeopardizes liberty and citizens rights and damages environment.

² “The Officially Journal “ No. 24/2011 and 99/2011 – and other bylaws.

³ “Sport activities are all forms of physical and intellectual activities that throw unorganized or organized participation have a goal to express or to increase physical preparedness and spiritual prosperity creation of social relations or accomplishing results in all level competitions.” The Officially Journal “ No. 24/2011 and 99/2011 – and other bylaws.

⁴ “Sport operations are those operations that enable conditions for conducting sport activities, especially organized participation and management of sport competitions, including international competitions, training for sport activities, planning and directing sport activities; sport trial; organizing of sport preparedness and sport events; securing and management of sport equipment and objects; sport education, training, specialization and informing in the sphere of sports; scientific and research – and development in sports; marketing, advising and expertise, sport mediation. “The Officially Journal “ No. 24/2011 and 99/2011 – and other bylaws.

⁵ “expert sport supervisor” is a person that supervises work in sports follows and subjects measures for sport organizations or it could be – sport expert that correct failures and informs the Minister responsible for sport matters on redistricted failures and the use of appropriate measures. The Officially Journal “ No. 24/2011 and 99/2011 – and other bylaws.

⁶ This is term of English origin that is develop out of the word fit meaning, to be in good shape and well condition (to be healthy and ready).

Also exists “the Law on violent prevention and prevention of inappropriate behavior”, that is developed for prevention and decreasing of the risk, violence and inappropriate behavior of spectators(sport fans) during sport events.

“The Ministry (of Internal Affairs) before every sport event of increased risk at list 24h before the beginning of the event conduct inspection of the object where sport event is to be held and insights the organizational preparedness. If the sport event management does not behave in accordance with directives of the Ministry and from the reason of obvious failures the security of participants could be endangered, the Ministry could prohibit such sport event.” (Article 17 Paragraph 3)⁸

The problems that are analyzed in this text are axiological⁹ aspect of unethical behavior of athletes and supporters. Axiological aspect comprehends questions dealing with our own behavior and behavior of the others by the use of the valuation methods in accordance with his own a valuation orientation, but also in accordance with universal values of our culture and from the aspect of universal values of mankind.

The questions that could be raised related to this subject are the following: does sport really preserve and develop universal human values? Does unethical behavior of the athletes result with unethical behavior of the supporters or is it vice-versa? How to indicate that the unsporting behavior jeopardizes the meaning of the athletes and the meaning of the supporters' life without endangering human freedom and human dignity?

Sport preserves and develops universal human ethical values

Ethics refers to the theory and practice of our relation to oneself, to others and to nature, from the point of view of good and evil. The knowledge of good and evil refers to the purpose of our activities and the process of implementation of specific tasks in which form and content of the work are harmonized with the permitted methods and lawful means in the specific space-time and historical continuum.

The difference between “ethics” and “morality” can also be established on the basis of assessment of known and committed individual actions that do not induce other members of the social group or they could be based on the individual acts that are not known to members of the social group. In these hypothetical cases, the public condemnation of the group may be missing (the act is not treated as immoral or it is unknown) and individuals can be more or less rigid to assess and condemn their own action. It rarely happens, but it still happens that an individual, from the aspect of their strict criteria of ethics, condemns himself or herself (feel guilt and/or remorse) for acts that are not done, but there was only intended to do it. The existence of such individuals (honorable men), is the evidence that the ethics is deeper and stronger than morality, and that, in addition to their interrelation; ethic has stronger and deeper foundations that reach to the very essence of human existence.

“After the observation that the terms” ethics “and” morality “are mostly used as synonyms Kant says that it is better to reserve the word *ethics* for one part of the moral of philosophy, that part that relates to the doctrine on those responsibilities that are not under external laws (in the German language the term *learning about the virtue* was considered appropriate for

⁷ The Law on violent prevention and prevention of inappropriate behavior during sport events. The Officially Journal “ No. 67/2003 and 90/2007 – refined text.

⁸ The Law on violent prevention and prevention of inappropriate behavior during sport events. The Officially Journal “ No. 67/2003 and 90/2007 – refined text.

⁹ Axiology is philosophical discipline that investigates human general values and evaluation process. Special human values are subject of other scientific or philosophical disciplines: economy with economical, sociology and psychology of moral with moral, ethic with ethical, esthetics with autistics, gnoseology deals with matters of knowledge.

this need). Consequently the system of learning duties in general, now it is divided on the system of *learning of law (ius)*, which relates to duties that could be derived from external laws and the *system of learning about the virtue (ethica)* that relates to the duties that could not be proscribed in this mode, and this division may remain in force¹⁰.”

Our individual relationship to ourselves has the following ethical and value dimensions: by free will we preserve our life (to be or not to be - raised as an ethical issue: whether suicide is right?); by free will we increase or reduce our ethics – i.e. learn what is good and what is evil and how that knowledge is applied (the forms, methods and means of achieving our purpose in terms of the admissibility or inadmissibility of methods and tools); by free will we participate in the assessment of moral action of ourselves (no matter if these moral or immoral actions are known to others); by free will we impose moral sanctions to ourselves (various forms and methods of conducting spiritual and physical sufferings that we bring to upon ourselves aiming to eliminate feeling of guilt); by free will we reward ourselves for moral actions that others are not known to others (perhaps they never will be known to them); for our ethical behavior it does not matter whether the consequences are beneficial or not, it only matters if our action (even if only imagined) is in accordance with the adopted code or not.

Individual morality can be seen as a special kind of abstraction, which is not in the area of the totality of the human system of thinking, but in the area of personal emotion. “Abstraction is an activity that is generally a characteristic of psychological functions. There are *abstract thinking*, but equally *feeling, sensation* and *intuition*. Abstractive thinking makes a difference with content that is shaped through logical thinking processes, from what is irrelevant. Abstractive feeling does the same thing with content that carries an emotional mark, as well as acting sensation and intuition. There are, then, in the same way as abstract thoughts also abstract senses; the latter Sully calls intellectual, aesthetic and moral.^{11 12}

Relationship to other contains the following ethical and value components: by free will we participate in the assessment process, valuation and judgment for moral or unmoral activities; by free will, from the standpoint of our ethics, we accept the legality and legitimacy of prescribing moral codes of the other - which we need to validate their ethical values toward ourselves; by free will we participate in a collective rewarding and punishing of someone from are community (and this is also needed for adjustment of our personality and validity of the adopted code) and finally, by free will, we prescribe the new code of ethical and moral values – to our children who are not yet able to decide on this matter for themselves.

Only the relationship to nature (survival of the planet Earth) has an ethical and moral dimension which is always unambiguous (unless it is of heteronymous moral – i.e. unless we do it because we fear of punishment): for the survival of ourselves, we preserve nature from ourselves (it is problematic how much it can have an ethical dimension - because it's hard to prove that it was not coerced by our fear for ourselves) and from others with the same purpose - to leave the plant to the others at least in the same form as we inherited it from ancestors.

According to the ethical and moral codes of different individuals or societies sport behavior or sport results are valued differently and differently praised or criticized, as well. Somewhere sports results are minimized to the marginalization or are restricted regarding the terms of sex –gender equality, and somewhere they are excessively stressed so that there is an enormous pressures on the athletes to achieve often unrealistic results on regular competitions, during especially significant great sport events or on the Olympiads.

¹⁰ Jokić, A.: *Kantova etika, pohvaljivost postupaka i pojam superarogacije*, Filozofske studije, br. 29/97. str. 143.

¹¹ Sully, Hum. mind. II c. 16. (navedeno prema: Jung, K.G.: *Psihološki tipovi*, “Matica Srpska”, Novi Sad, 1984. str. 449.)

¹² Jung, K.G.: *Psihološki tipovi*, “Matica Srpska”, Novi Sad, 1984. str. 449.

Universal human values were originated as a consequence of behavior in human society whose purpose¹³ is to regulate the harmonization between individuals as conscious, creative and free beings, from one side, and common values and interests of society as a whole, from the other side. By the process of socialization, social norms are adopted to the level of their voluntary acceptance as a form of normal behavior. There are technical norms- standards (governing human behavior towards nature), the legal norms (defined by laws and other legal acts), moral norms (governing human inter relations by use of traditional customs) and spiritual norms (governing the behavior of individuals to the spiritual values of a specific society). Each norm has a section in which are prescribed situations (terms and conditions) when it should be applied, then the command (duty) to do or abstain from doing and punishment (type and size of the liability) that the offender should be exposed to. For athletes and spectators at sporting events (fans in sports) particularly important is the moral of society and individual ethics, as a regulator of behavior for all participants in the sport.

A man's ethical duty is voluntarily adopted attitude, commitment and belief that something "should" be done, based on his own personal code of ethics (individual criterion of right and wrong, permissible and impermissible), no matter that it may be in favor of his own damage. When a man evaluates the fulfillment of his own ethical duties he can feel personal pride (if he correctly operated) or guilt (as a result of ethical self-responsibility for inaction or breach of a personal code of ethics). Usually, the fulfillment or failure of ethical duty is not visible to others (so it could pass without moral reward or punishment), but it can "eat the man from inside", until he does not solve the problem with his own conscience. The purpose of existence and the quality of voluntarily assumed ethical obligations speaks of man's humanity that is on his understanding of the meaning of life.

From the In ethical duties derives ethical self-responsibility. It is a special kind of responsibility towards themselves, not based on the moral code of responsibility, but the individual codes of ethics (moral responsibility is the responsibility to the collective or community), for some action done or omitted in the conditions and circumstances (ethical dilemmas), when some ethical duty was to be conducted (generally this is doing as much good as possible and avoid evil).

The consequences of ethical self-responsibility is an appearance of guilt, even for those acts that are not known to anyone, or have not done, but just intended to be done (planned, but undone).

The existence of self-responsibility is manifested in feelings of shame, vague fear, disgust, loathing, mental pain and the desire for self punishment.¹⁴

As well as the number of moral rewards and moral punishments are the indicator of the existence of a high level of morality in some society – collective, the ethical duty and ethi-

¹³ Purpose (Greek *telos*, end; Lat. *Finis*, purpose) thought about an imaginary quantity or type of level of quality, and whole ways and means that in this time and under given conditions and circumstances to be willing to realize human activity. Purpose includes, therefore, cause, motive, thoughtful exercise, but also the consequence of accepting the imaginary in order to achieve the imaginary. All living creatures, such rationality is attributed to a man, and he regarded his ultimate purpose of moral perfection (dignity), which means that one other man must never be used as a method and means, but always as a final purpose (all purposes). In addition to the purpose of the production (which aims to satisfy a man's material needs) that one is able to have a purpose and are in themselves and have a sense of herself. Include religion, art, creativity, sports, recreation, hobbies, meditation and contemplation, and the like.

¹⁴ The causes for suicide are not scientifically explained, but with a certain level of significant probability it could be presumed that one of the causes for suicide is a large amount of ethical responsibility, as a consequence of a very strict personal ethical code (moral code usually forbids suicide).

cal self-responsibility (which by its quality may be different from the moral duty and moral responsibility from a variety of moral norms), are also indicators of the real men's individual morality, i.e. ethics and humanity.

To achieve personal ethics means have own specific quality of individual criteria for evaluation of own committed actions (known or not known to the social environment where a person belongs), or just imagined or attempted, built on the basis of own perception of good and evil. Also, it is the quality and consistency of behavior in accordance with own criteria - code of ethics.

Unlike morality, which are assessed and evaluated by the group, collective or community to which the individual belongs, and on the basis of generally accepted moral code (positive - moral rewards, negative - moral sanctions), ethics is quality, measured on the basis of own personal ethic code (constructed as an ethical system that relies on selected philosophical attitude), which may be different from the moral code of the social environment.

That there are such differences the evidence are historical examples of the existence of high ethical personalities in unmoral environments. Also, changing the traditional conservative moral standards (which may be based on prejudice or taboos) proves to be a strong personality with its high etičnošću to change the morality of the environment, as it is worth, and vice versa.

Universal code of ethics is needed to the ethics of sport, as one of the applied ethics, for evaluation of all cases and the appearance of self-sacrifice (of unintentional self-sacrifice for the sake of sports results) in individual amateur sport, in professional sports and team sports.

Athletes in amateur sport strive to achieve the best possible and valuable. This can be seen as fulfilling a moral duty toward themselves, sports team, sports organization, sponsor, or the community. However, since the modern professional sport has become a kind of "economic activity" it happens that the professional athlete as their aims primarily have money as the ultimate goal regardless of the sports scores, although these events are sometimes linked. The top ranking sports results make more money, but sometimes not, depending on the type of sport.

Supporters, in addition to the rest of their personal and private reasons, aim to maintain and strengthen i.e. to support and encourage athlete's exaggeration of self sacrifice so that they can achieve better and better results - all the way to world records, Olympic medals, etc. Unbalanced and excessive devotion athletes often leads, unfortunately, to their unethical behavior, reflected in the use of illegal means (even drugs) aiming to make a "short cut" to celebrate and the social honors. Excessive devotion of fans (fan groups and groups of "sport hooligans") unfortunately often leads to violence and misbehavior at sports events and around them, thereby losing the meaning of sport as a noble and socially valuable activity.

So, sport keeps and develops universal human values in athletes and fans, but sometimes athletes unsporting behavior is due to the fact that they are more concentrated on the success that brings money and less on the ethics of sport, i.e. sportsmanship as a knightly competition for winning or improved athletic performance.

Sports fans (viewers, or spectators - as they are defined by law) at sporting events and competitions, and there they are mandatory because without them sport loses its meaning, sometimes are forgetting their role of the audience and they start with their unethical behavior that basically could have a variety of political, national, ethnic, religious and other motives up to pure hooliganism.¹⁵

¹⁵ The emergence of players like hooligans and hooliganism as a nationalist terrorist act, appeared in England in the early sixties of the last century, and then dispersed throughout Europe, especially in Holland, Germany, Belgium, Italy and Spain. The emergence of hooliganism at sports events is

Unethical behaviour in sport

Misuse of sports is in full swing. For the purpose of justifying or proving the viability of the Olympics or world championships large in many countries abusing the ethics of sports or “sporty” and “the use of sport as a means” to be achieved prestige in some other non-sporting fields, such as economics (achieving competitive advantage over rival manufacturers of sports equipment) or politics (political prestige of the methods of proving their commitment to the sport and the athletes, i.e. most general positive social values).

“The issue of the fight against violence in sport is regulated by the Law on the Prevention of Violence and Misbehavior at Sports Events. There are real organizational, educational, and informational resources to prevent violence and misbehavior, however, these resources are not adequately institutionally framed or used. As in other segments of society there are certain problems caused by the transition. From the standpoint of the strategy, the problem of violence in sport, not only looks like football violence, but also the forms of violence that occur in the coach-athlete relationship, the coach-parent, parent-athlete, parent-coach.”¹⁶

Although the Law on sport almost comprehensively regulates the field of sport in Serbia, due to various political, economic, legal and organizational changes that have occurred in recent years, the enforcement of the law is ineffective.

Supporters trashed the image of Serbia at the Handball Championship

The attacks on Croatian fans at the European Handball Championship in Serbia disrupt efforts to improve its reputation when it comes to hooliganism.¹⁷

Serbian silver, which shone from the second place on the podium at the European Championships in handball, was shade due to the inappropriate behavior of the fans, of which 12 were arrested for violence, including one member of the right-wing organization “Obraz”. The Championship games was an opportunity for the country to shine, but, instead, Serbian hooligans on the 24th January organized attack on Croatian fans after several earlier, smaller incidents. Some threw stones and axes on a convoy of Croats who were returning home after his team’s quarterfinal match against France, and injured several of them. “The attackers were from Belgrade and Novi Sad, the members of the fan sub-groups, and other organizations,” said Serbian police director Milorad Veljovic for *SETimes*.

“Sometimes a man feels in himself two opposite forces: one tends order, peace and security that guarantee the order of norms and institutions, and the other leads him to send it all to hell and unleash all the instincts of their ancestors who are detained in culture bounds. One could not have the freedom and order at the same time: sometimes you are bound by the law, and sometimes you enjoy the wild life of a vagabond. This condition is well noted by H.Hesse: ‘Never again ‘- spoke his imperious will.’ Tomorrow ‘again - begged his heart cloaking.”¹⁸

Swedes hit the ball to the bare bottom of the goal keeper

The Swedes were defeated by Ukraine 2-1 in the first round and they are aware that the eventual failure in the future clash with England will cost them the further placement. They

not accidental, nor is it separate from the overall social behavior. Hooliganism as a movement has become one of the strongest types of destruction of human consciousness. Source: The emergence of hooliganism in sport - Sports audience - Contemporary sport.com Retrieved 28/05/2012.

¹⁶ At the same place.

¹⁷ [http:// www.setimes.com/cocoon/setimes/xhtml/sr_Latn/features/setimes/blogreview/2012/02/04/blog-03](http://www.setimes.com/cocoon/setimes/xhtml/sr_Latn/features/setimes/blogreview/2012/02/04/blog-03) 4.2.2012.

¹⁸ Šušnjić, Đ.: *Dijalog i tolerancija*, Izdavačka knjižarnica Zorana Stojanovića, Sremski Karlovci, Novi Sad, 1994. str. 29.

therefore decided to improve accuracy, and do this by shooting the goalie Johan Wieland in the butt. To further motivate them, guard net from Copenhagen removed his pants, which was noticed by the journalists who saw the training of Sweden. - Our team sends a bad message to young people who look up to them. When they are doing this they are a bad model. As the heroes of boys and girls in Sweden they have to pay more attention to their actions – it was noticed in the Swedish media for the event.¹⁹

Sports hooliganism can be based on a person's egoism²⁰, but unfortunately sometimes it has causes and motives from political areas or for other reasons such as Nazism, fascism, anti-Semitism, racism, nationalism, religious fanaticism, and so on.

“The authors have opted for the term” hooligan violence “precisely in order to establish the difference between hooligans and fans. They find as their right to call fan groups that exhibit extreme behavior, which regularly includes verbal and physical violence, as the “hooligans”. It is arguable, at the same time, whether the decision of the Constitutional Court is expected to resolve this dilemma, especially in an environment where decision-makers, journalists, “sports officials” and other participants in organizing sports events too often refer to the “twelfth player”²¹ as an integral, important part of many events.

Hooligans must be separated from the fans that come to sporting events exclusively for enjoying sports competition or participation in achieving the best results. Therefore, the fans are necessary and very valuable for athletes and teams in the realization of team competitions- and every other competitions, from the local to the Olympics. On the other hand, supporters get their portion of pleasure - club trophies and individual premium sports scores make them believe that the sportsman`s success is their success, as a fulfillment of their desires, ambitions and ambitions and goals of sports, which complement the design of their meaning of life.

Self sacrificing, passionate fans, or people who have decided to build the meaning of life by choosing sports-related senses, often organized themselves in fan groups with a separate ethics of behavior. Such groups are organized in vertical hierarchical structures similar to those in the military, the authorities classified into qualitative levels that group members are required to meet their aggressive attitudes and behavior, often at the edge of the law or even criminal behavior.

In a statement to the media, Dedeić says that this is evidence of mood among a significant part of members of the Montenegrin nation who have no problem to publicly manifest fascism and Serbophobia. The women's match between basketball teams of Serbia and of Montenegro was played yesterday on Cetinje, in the European Championship qualifier. Dedeić announced that the Serbian List prosecution submitted footage from the game in anticipation of unambiguous response. - Video clips will forward to embassies of Serbia, Russia, USA, China, UK, Germany and France in Podgorica and that they will place evidence - footage online on

¹⁹ <http://www.24sata.rs/sport/vesti/vest/svedani-gadali-golmana-u-golu-zadnjicu/43829.phtml> Retrieved 14th June 2012.

²⁰ Egoism - (Latin ego, I; fr. Egoism, selfishness, self-love) is a term that is originated in the theory of solipsism, according to which - “I only know in my awareness that I exist, and all other beings exist only in my imagination.” In ethical theories, egoism is the principle of action in terms of selfishness and self-love. This action is solely based on own interests, regardless of the public interest or the interests of other individuals. Ethical egoism is the (immoral) behavior that does not respect the code of ethics of the social environment, and the individual code of ethics is based on dubious and selfish values that are not in accordance with generally accepted social values and moral conduct is unlawful methods and means, and regardless of the feelings of the people from the environment. According to psychological egoism, motives as guides of activity, are focused exclusively on the progress of their personality at a price that is “trampling” over the other person. MJ.

²¹ http://www.bezbednost.org/upload/document/na_putu_prevenicije_nasilja_na_sportskim_priredbama.pdf Preuzeto 2012.05.21.

YouTube - said Dedeić. He expressed confidence that the Serbian Embassy will adequately react and that a formal protest is the lowest possible response to compression which were exposed to Serbian basketball players and fans, but also all members of the Serbian community in the Montenegrin state.

Such behavior the society sees as a way to anarchism²², and young people, the chance to find them "self" and to realize their purpose in life as a "fan of the team," or "fan" of an athlete, when they could not do see any prospect to present themselves in the area of science, art, philosophy, religion, economy, politics, sports, etc.

Corruption in sports clubs, among the officials and the coaches, also belongs to the unethical behavior in sport. In the process of sports training it is especially important to determine the role of coach for defining specific and original methods and content of training athletes to achieve excellence and top ranking. Sometimes, unfortunately, they abuse their expert role in predicting long-term career planning for talented athletes due to their intention to "sell" sportsmen at the market of sport and thus gain financial benefit.

Sponsors in the sport, instead of marketing of their corporation and to perform desirable socially responsible support the sport, they often abuse their position or official authority for gaining personal or family benefit, or to gain profit for a particular interest group.

Finding the meaning of life in sports

In the Serbian language, the noun „smisao“ (meaning, purpose) doesn't have a plural form.²³ It is the only word derived from the word „misao“ (thought) that changed its gender. „Misao“ (thought) and „zamisao“ (idea) are feminine, but „smisao“ (meaning, purpose) is masculine. That fact is irrelevant when considering the meaning of the word „smisao“ (meaning, purpose), which is defined as: the order of a person's chosen purposes in life. Since two people cannot have the same order in the string of voluntarily chosen purposes, it can be concluded that there are as many devised orders of purposes entailed in the sense of the word "smisao" (meaning, purpose), as there are people on our good planet Earth. Because of the different ages, genders, races, ethnicities, cultures, climates, inherent historical conditions and concrete time-space circumstances, no human can fully repeat the destiny of any other human that ever lived, that lives now or that will ever live in the future.

"Man's wish to find meaning is a primary force in one's life, and not just a "secondary rationalization" of one's instinctive leanings. That meaning is unique and specific for every man who needs to quench his desire to find meaning. There are writers who claim that meaning and values are "nothing more than defense mechanisms and reactionary formations and sublimations". As far as I'm concerned, I wouldn't want to live just for the sake of my "defense mechanisms", nor would I be willing to die for my ideals and values".²⁴

²² Anarchism - (Greek *anarhia* - anarchy, the termination of the rule of law and authority) is a theory that is based on the fundamental premise that the company should not exist any *autoiriteti*. The basic assumption of this theory: the requirements for the exercise of absolute liberty of each individual release of each (especially the state) coercion, even if by force. The best-known representatives of the theory of anarchism: Stirner, Proudhon, Bakunin, Kropotkin. Tolstoy's religious anarchism advocated by which it is possible that the current authoritarian regimes can overcome nonviolence and developing Christian love. Contemporary anarchist theory (in postmodernism) give up rigorous demands and meet the individual revolt or mass protests against mindedness in favor of pluralism opportunities.

²³ Some nouns are used usually only in singular form (*singularia tantum*). There are scientific theories that the disappearance of ancient civilizations are not attributable to external aggression, but the wrong value aspect of general orientation.

²⁴ Frankl, E.V.: *Zašto se niste ubili? (Uvod u logoterapiju)*, "Oko tri ujutro", Zagreb, 1978. str. 88.

The choice of the meaning of life is, therefore, a personal and unalienable freedom of every man.

How and when, then, can one man point out to another man his mistaken direction in the order of purposes which lead up to some imagined meaning, or a wrong meaning, i.e. meaninglessness? Is there a criterion for the “correct order and direction of purposes” toward a “positive meaning of life”? Is there a definition of meaninglessness, non-meaning, or is it just a constatation of an unfulfilled meaning in life?

Can the meaning and meaninglessness of life be ascertained only after a man dies?

Viktor Frankl (1905-1997) thinks that there are three approaches to the quest for meaning.

“The first one is through experienced values, by experiencing something valuable – or meeting someone of value. The most important example of experienced values is love. Through love, we can help those we love find meaning, and by doing that we find our own. Love is the “ultimate and highest goal that a man can strive for”. Frankl points out that, in modern societies, many confuse sex with love. Without love, sex is nothing but masturbation and the sexual partner is nothing more than a tool used to achieve some goal. Sex can be fully enjoyed only as a physical manifestation of love. Love is the recognition of the other’s uniqueness as a person with the intuitive understanding of their full potential as a human being. Frankl believes that that is achievable only in monogamous relationships. As long as the partners are changeable, they remain objects.

The second approach to discovering meaning is through creation, reading, acting. We reach meaning through our own life’s endeavors. This approach to discovering meaning includes creativity in art, music, writing, inventions, etc. Both creation and love are functions of the spiritual unconscious, and thus, conscientiousness. Irrationality of artistic creation is equal to the intuition that enables us to recognize good.

The third approach to finding meaning is our relation with the circumstances and what happens to us. It includes virtues such as compassion, courage, sense of humor, etc. “Everything can be taken away from a man except one thing / the freedom to choose his own attitude towards any set of circumstances, to choose his own way”.²⁵

The great philosopher Hegel once wrote: “Nothing great in this world has been accomplished without passion. There are two moments that enter our consideration: one is the idea, and the other is human passions”. One is the end, and the other is the beginning of the great saga of human history that stretches before us. The concrete environment and the unity of those two moments is the moral freedom in a country”.²⁶

Today, during a world economic crisis and a global crisis of values, sports are probably an area that is very attractive to young people as a possibility to achieve the meaning of life through sports, with the help of sports or in relations with sports. As evidence for this claim, one need not look far to find the cases of young people who, sadly, with no opportunity to participate in sports or to search for meaning in terms of education, industry or arts, turn to cheering for some team or athlete as the meaning of their lives. Whilst the cheering does not affect property, the environment, moral and the liberty of others, it’s socially acceptable behavior. Otherwise, human liberties and human passions sometimes collide.

Democratic societies are at times unable to subdue the “passion of fans” through democratic means, and it becomes socially unacceptable, damaging and even dangerous behavior that endangers general and specific social, material and spiritual values.

When athletes and fans, through their attitudes and behavior at sporting events show that they have no respect for universal human values and specific personal values that are

²⁵ <http://www.iza-ogledala.com/tekstovi/5-teorije-i-terapije/221-viktor-frankl-leenje-smislom>
Preuzeto 30.04.2012.

²⁶ Hegel, G.V.F.: *Filozofija povijesti*, Kultura, Zagreb, 1951, str. 39.

preserved and maintained through sports, they are a hindrance to a positive direction of this type of meaning of life. That is not the problem of the relation of a democratic society with its citizens – it is the relation of every man with himself, with his family, and, ultimately, with his nation and his country.

So, finding a meaning of life in sports is akin to the process of losing the meaning of life via sports or in illicit behaviors related to sports. Every direction and order of purposes go either towards the realization of meaning or toward meaninglessness (unfulfilled meaning of life). Every man chooses freely for himself his own version of the original and unrepeatable meaning of life, whether he's an athlete, spectator, fan or sports manager. It is the same as in all other human activities.

Conclusion

Without sportsmanlike and responsible behavior of top athletes, top results that can be representative of a nation in the world and serve as something that young generations can strive for, that promote hard work, persistence, competitiveness and honesty, cannot be achieved.

Unsportsmanlike and dangerous behavior of athletes and fans, unfortunately, often leads to hooliganism and endangering the environment and general safety at and around sport venues. Thus sports lose their original meaning as a noble and socially valuable activity. By demolishing the original principles of sports so far that they become “un-values” and an unwanted nuisance from the point of view of the ethics of sports and the quality of the social community, the positive value orientation of the youth is also demolished. By identification with the negative heroes of sports (unsportsmanlike athletes and hooligan fans), a negative orientation of values is being built, which, ultimately, prevents every man from reaching his imagined meaning of life in the direction of universal human values. The meaning of life that has been so imagined can be characterized, by using the criteria of universal human values, as “meaninglessness” or “losing the positive direction of a life's meaning”.

In everything we do, as athletes or sports fans, regardless of whether it's a significant competition or not, we always have to ask ourselves: do our actions or inactions turn us into persons that we want to be? In every moment, every time we think, speak, make decisions and act or not act based on our free will – we indeed already exist as an old – already formed person of a certain level of ethics, and, at the same time, we become a different – new person – more or less ethical than the previous one was. The decisions that we make contain all of our past in consciousness, knowledge, wishes, ideals, etc. but, at the same time, our actions, or inactions, change our present from one moment to another and we constantly keep becoming a new person. Our personality depends on the quality of our actions towards ourselves and towards others. It is widely known that our actions are the foundation of our personality, and that our personality is the foundation of our future actions.

A man's ethics, even sports ethics, should, therefore, be considered in the light of all of his problems, the means available to him, the methods allowed, the purposes he chose or followed by mistake, and the meaning of life which, uniquely and unrepeatedly, flows in the direction of the accomplishment or the lack thereof of his personal purposes. A man as a unit can only be understood from the totality of all-encompassing results reached by a civilization (traditional values of every community or every culture separately). From the objective assessment of his past and the present state in which a man is trapped in on our good planet Earth, many possibilities can creatively arise to assure future survival as a dimension in which a man remains unable to find the meaning and purpose, and which may hold the key to unlocking meaning of the existence of the human kind.

Sport, as chosen profession, amateur sport or sports as a recreation and entertainment (viewers and fans of the sport) are just some of the possible purpose of man's functions among infinite number of others. It depends just on man himself whether order, direction, and quality of selected purposes go direction will be with sense for his life or it will be a nonsense regarding the meaning of existence.

When athletes and fans, by their attitudes and behavior at sporting events and competitions do not respect universal human values and specific positive values that sports maintain and develop, thus hinder or impede the achievement of positive direction of his life's meaning.

However, when a young man wants to be better than anyone else in the sport, but also from himself, imitating his sports idols, as Novak Djokovic and many other Serbian elite athletes, it thus contributes directly to himself and to the community or nation to which he belongs. Values of sport are then used as an example of universal human values can be "transferred" to all other areas of human activities.

Proper understanding of the value and meaning of sport as a particularly important and highly ethical activity, one can preserve and develop the best human characteristics that show up in the sport as a universal, regardless of race, nation or religion that athletes belong.

Athletes in Serbia, with its exceptional sporting results that have improved sport in this environment as a "Serbian brand," among other things, contribute to the progress of Serbia. If it is to be realized what is in the Constitution of the Republic of Serbia recorded, the sport will become a category of special public interest and the children will be sport priority in Sports Development Strategy in the Republic of Serbia. This will not only elite athletes, but all the other young people involved in sports will also contribute to public health, which means the survival and future of Serbia.

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SERBIAN HUNDRED YEARS IN THE OLYMPIC MOVEMENT (1912-2012)

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Abstract

The idea of the Olympic Games revival reached Serbia at the end of 19th century, and was realized by foundation of the Serbian Olympic Club (Committee) in 1910, which was subsequently admitted to the International Olympic Committee - IOC (1912) in Stockholm during the 5th Olympic Games, where two athletes from the Kingdom of Serbia participated and captain Svetomir Đukić became the IOC member. He was IOC member until 1948.

The admission of the Serbian Olympic Committee to the International Olympic Committee marked a new era in the development of Olympism in Serbia. The management structure of the Olympic movement underwent organizational changes according to the IOC structure, and Nikodije Stevanović became its President while captain Svetomir Đukić was elected director.

Surely, the development of sport and Olympic movement in Serbia would have been even faster and more successful if the First Balkan War had not started only few months after the end of the Stockholm Olympic Games, and the entire management of the Serbian Olympic Committee had gone to war together with the Serbian athletes and the youth. It was followed by the Second Balkan War, so that almost an entire year passed at war.

At the beginning of 1914, in Belgrade, the Serbian Olympic Committee resumed organization of great sports competitions, often called "Olympic matches" and the First Olympic Congress was scheduled for 8th September 1914. No one could forecast the great series of conflict, which soon encompassed the entire world. World War stopped further development of the world, as well as the Serbian Olympic Movement.

The creation of the new state - Kingdom of Serbs, Croats and Slovenes, resulted in a necessity to create a common Olympic movement. At the foundation Assembly of the Yugoslav Olympic Council in Zagreb, dr Franjo Bučar, was elected the President of the Yugoslav Olympic Board (YOB), while major Svetomir Đukić and dr Č. Žižek were the Vice Presidents.

At the IOC Congress in Antwerpen 18 August 1920, major Svetomir Đukić represented the Olympic Committee of Serbia and on that occasion the IOC recognized him as the delegate of the Yugoslav Olympic Council. Thus Serbian Olympic Committee continued to work as Yugoslav Olympic Council, and since 1927 as the Yugoslav Olympic Committee. The same year the YOC seat was relocated from Zagreb to Belgrade.

After the end of the Second World War and the revival of the Olympic activities all over the world, prior to the 1948 London Olympic Games, the Yugoslav Olympic Committee restarted

its activities within the FISAY, and in 1951 it became independent. The name of the Yugoslav Olympic Committee was kept until 3 April 2003 when in compliance with the changes within the state, was changed to the Olympic Committee of Serbia and Montenegro.

Upon the dissolution of Serbia and Montenegro, the State Union of Serbia and Montenegro ceased to exist and on 8th June 2006 the OCSCG changed its name into the Olympic Committee of Serbia.

Key words: Olympisam / Olimpik Club / Svetomir Djukic

Introduction

In the second half of 19th century, the idea about renewal of the Olympic Games came to the Principality of Serbia and to the Kingdom of Serbia from the European countries; the idea was accepted and gradually implemented in Serbian sport. In relation to this, it has been noted that, in the sixties, a public lecture on “The Greeks’ Olympic Games” was held in Belgrade.

At the end of 19th century, many private schools and civil gymnastic societies in Belgrade started using the term the Olympic competitions. The equestrian competitions in Cuprija, held in March 1896, were called “The Olympic Festivities”, while the Chivalrous society “Dusan Silni” announced the schedule of a public lecture (held in February 1896) where “the famous Olympic Games with the swords from the ancient times of the Greeks” were going to be performed for the first time.

Finally, the Olympic idea in the Kingdom was practically realized by establishing the Serbian Olympic Club (Committee) in 1910, which was admitted to the International Olympic Committee - IOC (1912) in Stockholm during the Fifth Olympic Games, where two athletes from the Kingdom of Serbia took part, and Captain Svetomir Djukic was admitted as a new member of IOC, where he remained until 1948.

Methods

The historical method was applied in this paper.

Results and Discussion

The occurrence of the Olympic idea and the establishment of the Olympic movement

The development of modern sport which encouraged the idea of restoring the ancient Olympic Games, also enabled that idea to occur, to be accepted and developed in numerous private schools, civil gymnastic societies and the sports clubs of Serbia as well. Therefore, it can be understood why the names of their competition programs quite often contained the term Olympic competitions. In the nineties of 19th century they named their competitions *folk celebrations and chivalrous competitions*, but we should not forget that the ancient ceremonial games (Olympic, Pythian, Nemean, Isthmian, Panaethan), were also called: *folk celebrations*.

The Chivalrous society “Dusan Silni” in Belgrade organized trainings of various contents as well as public lectures where the members of the Society presented acquired skills and knowledge. For the event held in February 1896, they announced that there “*the famous Olympic Games with the swords of the Greeks from the ancient times were going to be performed for the first time.*”¹

This means that the members of this Society connected their programs to the current renewed Olympic Games, at the time of preparation and organization of the First Modern Olympic Games, scheduled to be held in April 1896 in Athens.

Similarly, a month before the First Olympic Games were held in Athens, the equestrian competitions called “*the Olympic equestrian festivities in Cuprija*” were organized in Serbia

¹ Mali žurnal. Br. 72. Beograd, 12.03.1896.

in March 1896. A significant incentive for the acceptance of the Olympic idea in Serbia, providing more complete knowledge of this great sporting event, was a five-day stay of King Aleksandar Obrenovic in Athens in 1896, during the First Olympic Games. King Aleksandar was invited to the Olympic Games by the Greek king George and although this visit was of a multiple character (a Hilandar tour and meeting the Greek royal family, for King Aleksandar's possible marriage) his visit to the Olympic venues was noted in the Serbian press, so the attention of the Serbian public was directed towards the events related to the Olympic Games as well.

In the late 19th and the early 20th century the Olympic idea was accepted in many sports clubs which organized the competitions named "*The Olympics*", thus the Society "Dusan Silni" together with the press, organized *The Olympic Games* (1908) at Ada Ciganlija. The competitions were held in rowing, swimming, fencing, and 3.000 m running.

The rapid acceptance of the Olympic idea led to the fact that the societies and clubs containing the term Olympic in their names were established throughout Serbia, such as a Belgrade society which was called "*Serbian Olympia*." This Society, established in the early 20th century, organized a range of competitions called "*Olympic Games*" every year. They gathered a great number of followers, spreading and propagating the Olympic movement, thus strengthening its foundations and accelerating its development.

The establishment of the Serbian Olympic Club (SOC)

All this meant that the Olympic idea was accepted and that the athletes wanted to join the international Olympic movement. As a result of those needs and desires of the athletes *the Serbian Olympic Club* was established in Belgrade on 10th (23rd) of February 1910, which attempted to get involved in the International Olympic Community in the following years. The Serbian Olympic Club (SOC) was established by the editorial board of "Novo vreme" magazine, in the "Moskva" hotel, with the aim of encouraging and supporting the work of "the chivalrous societies as well as any other institutions contributing to the improvement of military and physical education of our people".

In its adopted Action Plan, specified in the Club's Statute, the Serbian Olympic Club decided to further develop sport and the Olympic movement in the Kingdom of Serbia.²

The Serbian Olympic Club had a board of directors consisting of six members, out of whom four were officers in the Serbian army, which indicates the role of the Serbian officers in the establishment and the development of many sports clubs and organizations, as well as in the realization of the Olympic idea and the Olympic movement in Serbia.

The establishment of the Serbian Olympic Club meant a further incentive for organizational connection of all existing civil societies, sports clubs and their associations in a unique system of sports competitions. It meant a lot for the further successful development of sport and the Olympic movement in Serbia as well.

The development of the Olympic movement

At the beginning of 20th century the Olympic movement was accepted in Serbia as the modern sport movement, and the participation in the Olympic Games was the ultimate goal of every athlete. More things were found out about the Olympic movement, so that there were many young people who at first became its members, and later on they became its supporters, promoters, and holders of its further development as well.

During the four-year period of war, i.e. from its establishment until the beginning of the First World War (1910-1914) the Serbian Olympic Club (Committee) launched a wide activ-

² Srpski vitez. No. 8. Belgrade, 1910. p. 11.

ity and played an important role in further development of the Olympic movement in the Kingdom of Serbia. During this period, two stages of its work may be noted:

**The work of the Serbian Olympic Club from 1910
to its admission to the IOC - July 10th 1912**

This period of work of the Serbian Olympic Club represents a significant period in the development of the Olympic movement in Serbia, when many competitions in various sports were organized. The Olympic movement achieved full recognition by organizing the pre-Olympic competitions, and it achieved its international recognition by the participation of the delegation and the athletes of the Kingdom of Serbia in the Fifth Olympic Games in Stockholm.

During its first year (1910), the Serbian Olympic Club (SOC) organized the simplest running competitions where all citizens, encouraged also by the financial rewards provided by the Club, could take part. The Club's administration informed gymnastic societies and sports organizations about its Program, inviting their members to take part in these events.

In the first year of its work, the Club managed to realize a varied program of sports competitions which gathered thousands participants as well as a great number of spectators. The most significant competitions organized by the Club were:

1. Great pedestrian event (a running competition) from Obrenovac to Kosutnjak, with a length of 32 kilometres, which was attended by more than a hundred of participants. King Petar I Karadjordjevic, the Prince and the Crown Prince Aleksandar were also present at the competition.
2. Equestrian show jumping competitions - attended by more than 20 participants.
3. Swimming competition organized at the Sava river, together with several swimming clubs from Belgrade, attended by more then 70 participants.
4. Olympic Games, along with a special soldiers' competition, where more than 200 soldiers and 80 citizens took part.
5. Moto racing from Nis to Belgrade, organized together with the First Serbian Velocipede Society.
6. Skating competitions.
7. Boxing and fighting competitons.

In the second year of its work (1911) the Serbian Olympic Club continued to organize several large mass events as follows:

1. Great equestrian rally in Kragujevac.
2. Great pedestrian rally in Krusevac.
3. The first plane flight over Belgrade.

The Club continued to organize other *sports* competitions as well:

1. Horse races.
2. Football matches.
3. Running competitions.
4. Archery competitions.
5. Swimming competitions.

This extensive program and a wide activity of the Serbian Olympic Club required a stronger and more numerous organizational structure of the administration. Therefore, at the end of 1910, the number of members of the administration increased from 6 to 55 members, out of whom 22 were officers.

At the end of 1911, the Serbian Olympic Club changed its name into the Serbian Olympic Committee. In order to coordinate the work of 33 local Olympic clubs more effectively, the Central Committee Board was established.

The work of the Serbian Olympic Committee in the third year (1912) was quite intensive, because the preliminary competitions for the Fifth Olympic Games were organized. In the first half of 1912, its work was directed towards the preparation and the participation of the athletes of the Kingdom of Serbia in the Fifth Olympic Games. With the aim of involving Serbian athletes in the International Olympic Movement more quickly, the Serbian Olympic Club sent a letter to the International Olympic Committee (IOC) for the purpose of its admission to this organization.

Qualification competitions of the athletes of the Kingdom of Serbia for the Fifth Olympic Games (1912)

In the first half of 19th century, the Serbian Olympic Club performed a number of activities in order to increase the athletes' interest in the upcoming Olympic Games. In order to select the best ones who would participate in the Games, in May 1912, the Club organized the qualifications only in two athletic disciplines: 100m running and the marathon.

The qualification race in 100m running discipline was held on the 20th of May 1912 on the grass plateau of the "Kosutnjak" picnic area. Apart from Serbian athletes, several athletes from Macedonia and Montenegro also took part in this event.

Dusan Milosevic, running in full football equipment, since there was no other at that time, won the race with the score of 12 seconds. The competition was attended by a great number of spectators because the citizens of Belgrade accepted it as a national event, which was attended by the representatives of the Serbian government and the Army as well as many foreign diplomats and the members of the Court. Overall atmosphere of the competition was enhanced by the orchestra of the Guard.

A week later, on the 27th of May, the marathon qualifications were organized, where 40 runners competed. Falcons, soldiers, the practitioners of other societies and the athletes from various sports clubs took part.

Despite the bad weather conditions, since it rained heavily the night before the race, the marathon race was held on the track from Obrenovac to Kosutnjak. The race was won by Dragutin Tomasevic, a good gymnast and an even better long-distance runner from "Dusan Silni" Society, who was a soldier of the 18th Infantry Regiment at the time. The Director of the Serbian Olympic Club, Captain Svetomir Djukic, was a troop commander in this Regiment. The representatives of the Government, the Court and the Army and the diplomats were also present at this event.

Thus, Dragutin Tomasevic and Dusan Milosevic qualified for participation in the Fifth Olympic Games in Stockholm as the representatives of the Kingdom of Serbia. An official delegation was also elected:

1. Captain Svetomir Djukic, the president of the SOC, 2. Lieutenant Dragutin Vojinovic, the President of the Belgrade sports society and 3. Engineer Andra Jovic, the athletes' coach.

The three member delegation, together with the selected athletes, set off the journey on June 12th (25th) 1912. They arrived in Stockholm after a two day journey where they were welcomed by an honorary Serbian consul, Karlson.

The performance of the athletes of the Kingdom of Serbia in the Fifth Olympic Games

Upon the arrival of the Serbian delegation in Stockholm, Svetomir Djukic and Dragutin Vojinovic were introduced to King Gustav, and they were also received by the President of the International Olympic Committee, Baron Pierre de Coubertin, and by the President of the Swedish Olympic Committee.

Dusan Milosevic won the third place in 100m running preliminary competition, so he failed to qualify for the finals.

Dragutin Tomasevic, despite the injury, endured the entire marathon race, where 62 athletes competed, and won the 37th place.

The first appearance of the two athletes of the Kingdom of Serbia, who showed great fighting spirit and desire for even greater success, was accompanied by the sympathy of the audience. Their performance may be assessed as satisfactory taking into account their inexperience, lack of preparedness, illness and injuries.

The admission of the Serbian Olympic Club to the International Olympic Committee (IOC)

Since the Serbian Olympic Club had submitted the request for the admission to the International Olympic Committee before, on its meeting held on 4th July 1912, the letter from the Serbian Olympic Club was read, and on the last meeting held on 10th July 1912, the Serbian Olympic Club was admitted to the International Olympic Committee, and Captain Svetomir Djukic was proposed and elected a member of it.

The admission of the Kingdom of Serbia to the full membership of this international association was of utmost importance for further development of the Olympic movement in Serbia. This wish that came true was the crown of all the efforts of the entire sport and the Olympic movement in the Kingdom of Serbia.

Immediately after the admission to the IOC, the Serbian Olympic Club, in its documents, changed its name into the *Serbian Olympic Committee*, in analogy with the name of the International Olympic Committee. Thus, simply and without making any special decisions, the Serbian Olympic Club changed the word "Club" in its name into "Committee".

The admission of the Serbian Olympic Club and Captain Svetomir Djukic in the International Olympic Committee was not only recognition for the achievements in the development of sport and the Olympic movement in Serbia, but also a powerful incentive for its faster and more successful further development. It was also the personal acknowledgement to Captain Svetomir Djukic for his contribution to the development of sport and the Olympic movement in the Kingdom of Serbia.

Conclusion

The admission of the Serbian Olympic Committee to the International Olympic Committee created a new period in its work. The organizational changes in the management structure of the Olympic Committee in Serbia were made according to the structure of the IOC.

There were 17 members in the newly formed Serbian Olympic Committee (SOC), the President was Nikodije Stevanovic, a retired general, whereas Captain Svetomir Djukic, the representative of Belgrade, was a director. The majority of the Serbian Olympic Committee's members were the officers, i.e. 14 out of 18 members.

Two years later (in May 1914) the Serbian Olympic Committee Board was formed, consisting of 11 members out of whom only 4 were officers. Captain Svetomir Djukic and Nikodije Stevanovic were still there among them.

The started development of sport and the Olympic movement in Serbia would have certainly been faster and more successful if the war with Turkey (the First Balkan War) had not begun just a few months after the Olympics in Stockholm, when the entire management of the Serbian Olympic Committee went to the war together with the youth and the athletes of Serbia.

It followed up with the Second Balkan War with Bulgaria, so that it was almost one whole year spent in fighting the war. Many members of the Serbian Olympic Committee died, some

of them disappeared, so that it took a long time to reorganize the Committee again after the war and continue its previous successful activity, at the end of 1913.

In early 1914, the Serbian Olympic Committee continued with the organization of great sporting events in Belgrade, which were often called "the Olympic matches".

The Serbian Olympic Committee planned to organize the First Olympic Congress on September 8th 1914. However, no one could predict the Great War, which after the beginning of the war between Serbia and Austria-Hungary spread to entire Europe and very soon expanded to the entire world.

Due to the First World War the overall activity of the World Olympic movement, and thus of the Serbian Olympic movement as well, was interrupted. Almost all the members of the Serbian Olympic Committee took part in it, as well as many athletes who interrupted the preparation for the upcoming Olympic Games (in Berlin in 1916) by going to the war.

Just before the outbreak of the First World War, the Olympic Congress, in the honor of the 20th anniversary of the decision on the renewal of the modern Olympic Games (in Paris in 1894), was held in Paris from June 13th to June 23rd 1914. About 140 delegates of the national Olympic committees took part in the presence of the senior officials of France.

At this congress, Svetomir Djukic also took part, for the Serbian Olympic Committee, and he should have been joined by four junior officers studying in France, thus forming a five member delegation of the Serbian Olympic Committee.

Due to the First World War the overall activity of the World Olympic movement was interrupted. The sixth Olympic Games planned to be held in Berlin 1916 were cancelled and only upon its end the Olympic activity in the whole world was restored.

Upon creating a new country-the Kingdom of Serbs, Croats and Slovenes, the need for a unique Olympic Committee occurred. At the inaugural meeting of the Yugoslav Olympic Board in Zagreb on December 14th 1919. Mr. Dr. Franjo Bucar was elected the president of the Yugoslav Olympic Board (JOO), and Mayor Svetomir Djukic and Dr. C. Zizek were elected the vice-presidents.

Mayor Svetomir Djukic represented the Olympic Committee of Serbia at the IOC Congress in Antwerp on August 18th 1920 where he was also admitted by the IOC as a delegate of the Yugoslav Olympic Board. Svetomir Djukic personally asked for Dr. Franjo Bucar to be admitted to the International Olympic Committee as well. Thus, the Serbian Olympic Committee continued its work as the Yugoslav Olympic Board and since 1927 as the Yugoslav Olympic Committee, when the seat of the YOC was brought from Zagreb back to Belgrade.

By the end of the Second World War and the revival of the Olympic activities worldwide, ahead of the Olympics in London 1948, the Yugoslav Olympic Committee renewed its work within the Yugoslav Association of Physical Education (FISAJ), and it became independent in 1951, and it retained its name, the Yugoslav Olympic Committee, until April 3rd 2003 when, in accordance with the changes in the country, it changed its name into the Olympic Committee of Serbia and Montenegro.

Upon the dissolution of Serbia and Montenegro and after the end of the state union of Serbia and Montenegro, the Olympic Committee of Serbia and Montenegro changed its name into the Olympic Committee of Serbia on July 8th 2006.

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INVESTING IN A BUSINESS SYSTEM

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Abstract

Every company tends to maintain current liquidity and to make progress, ie. to develop. This is something that can be achieved through investment. Investment can be in production, in terms of new technologies, new products etc. And with this form of investing, there are cases of companies investing in the securities finance market, which makes a profit. When investing, there are micro and macro aspects.

When the conducting investment analysis is performed, and during the investment management, respectively the evaluation and ranking of the project it is significant classification of independent and mutually exclusive investment projects. The theory and practice are two main approaches to present the assessment and measurement of financial benefit or impact of investment projects: traditional or contemporary approach and accounting or financial access.

The investment decision is taken on acceptance or rejection of the proposal based on the 4 methods of determining the required capital: methods of evaluating the rate of return, payback period method, the method of internal rate of return and net present value method.

The method estimates the rate of return is actually the ratio of the average annual profit after tax and investment in a particular project.

Methods of repayment period taking into account the size and temporal separation of cash flow for each period of the project. The method of the discount flows are internal rate of return and present value method.

With the method of the present value all cash returns are discounted to present value, using the required rate of return.

The index of profitability of the project in other words, ratio of benefits and costs, is the ratio of the current value and subsequent cash flow and start-up costs.

In times of inflation, the company invests less, because of the smaller rate of return and therefore the motivation factor is decreased.

Therefore, the consideration of improving and prediction should be the main priority in the process of gaining the optimal decision.

Keywords: investment / methods of determining the necessary capital / profitability

Term of investment and investments

Each company as a starting point, has the preservation and the provision of continuous existence of the planned development.

The company which wants to ensure the current survival and the future, to ensure continuity of current and future efficient operation. Basically, the main synthesized goal of the company still specifies the two additional objectives:

- ensuring of the operation continuity, i.e. ensuring the existence of the business system;
- ensuring of the continual continued efficient operation, i.e. the ensuring continual development of the desired business system.

Its goal the company is trying to realize in the present conditions and in the present time, but think about the near future. When the conditions are provided for the current survival, the company constantly tends to develop and achieve a high level of quality for the future work. Thus, the long-term plan is defined and the policy that contains the basic objectives and ways of their implementation. Goals of the investment and the investment policy, as a direct result of company goals, are retained in long-term development policy of the company.

On the other hand, only with the specific investment actions within a defined investment policy, the realization can be establish and the development of the company policy.

The selection criterion of investment is actually a validity measure of the certain investment actions, the measures of achieving the goals of investment and on that basis the available investment actions that should be implemented is determined.

As well as other economic phenomena, investments have their micro and macro aspects too. At the macro level that are discount flows of different variants of the capital ratio as the ratio between investment and production in the finance literature and in practice they are mostly average and marginal capital coefficient. The average capital ratio indicates how many units of capital (fixed and current assets), respectively the total investment is engaged in the creation of production units, while the marginal capital coefficient is the ratio between the growth of investment and production growth. The investment Management at the micro level, respectively the at the company level is intended to a limited capital investment allocated to optimal use, programs to maximize the realization of its economic goals.

In terms of developed financial markets and market access of the company to such investment must be understood in a broad sense. In addition to investments in projects, business projects in the company, either in the modernization of existing ones, either in new production facilities, plant and processes, and the free company can uninvolved capital invest in securities of financial markets and thus make money.

The investments, an integral part of the integrity of the allocation process of the economic resources in time, are valid for one of the most important areas of economic theory, from two main economic characteristics:

- limitations and the possibility of alternative use of economic resources;
- the future development as a prerequisite of totally meet the needs of the future.

Investment projects and investment criteria

The investment proposals or projects, as well as alternative investment opportunities internally within the company can be classified as:

- New production or expanding existing ones;
- Relocation of equipment or facilities;
- Research and development;
- Research activities;
- Other projects

For the purposes of investment analysis and the investment management, respectively the evaluation and ranking of the project is vital to the division of independent and the mutually exclusive investment projects. Independent projects are those that do not compete with one another, respectively the if the selection of one of the project does not involve the rejection of another. In contrast, mutually exclusive projects are mutually exclusive, so the selection of a project means automatic rejection of another one.

Capital investments involve:

- Generating investment proposals;
- Assessment of cash or cash flows for these proposals;
- Valuation of cash flows;
- Project selection based on standard criteria;
- Continuous re-evaluation of investment projects after their acceptance.

Each of the listed activities respectively the correctness of its implementation improves the quality and the objectivity of the investment management and a chance for the optimal placement of capital.

In theory and in practice there are two basic approaches to assessing and measuring the financial benefits or effects of investment projects:

- The traditional or accounting approach;
- Modern or financial access.

The first is a projection of annual financial results of economic age of a project and their comparison with imported resources - capital. Expression of profitability of investment in this way depends on the sources and their combinations, and whether it is expressed based on gross or net profit.

The latest financial theory is therefore promoted, practice accepted approach of expressing the effects of investment projects through their effect on cash flows.

The advantages of net cash flow or financial accesses of cash flow in relation to or accounting, based on its differential gain are:

- Intelligibility of decision makers, even those who are not financially educated;
- Determination of future investment activities of the company in managed cash flows.

Here you will point out only the basic elements of the projection of cash flows as a function of the budget and effects of investment programs, which include:

- Initial and any subsequent capital investment in the realization of the given project as a cash outflow;
- Net increase in future cash flows expected from project or the course of annual financial benefits in economic age of a project;
- The amount of cash that will be released when the project is liquidated by the system of his lifetime as a cash inflow.

As primary criterion of investment in financial literature are presented the new capital costs and the standard cost of capital rate of return.

Cost of capital as a criterion is based on the indisputable fact that the capital regardless of its sources has a price on a logic that is worth of investing if the expected earnings from other reasonably available alternative investment opportunities. In addition, determining the cost of capital of the company is essential for any company not only a function of investment criteria, but also the optimal composition of its financial structure.

Unlike the cost of capital, the classical transmission rates on investment are discount flows of more empirically based criterion, despite the fact that there are plenty of wide practical application. As a standard rate of return is encountered or used:

- The required rate of return on new investments;
- The actual rate of return on existing investments;
- The average rate of return for a given economic sector;
- The target rate of return on existing investments.

Methods of assessment

The investment decisions will be either adoption or rejection of the proposal based on the 4 methods of determining capital requirements:

- methods of evaluating the rate of return;
- methods of recovery period;
- the internal rate of return;
- net present value method.

The assessment rates of return

This calculation measures presents the ratio of the average annual profit after taxation and investment in the project. In the previous example of new machines, the average annual salary for carrying a five-year period is 2100 \$, and the initial investment in the project is \$ 18,000. This is why: The average return rate = $2100/18000 = 11.76\%$.

If the income was variable for observed 5 years, the average would be calculated and included in the numerator. Once, when the average rate of return investment proposal is calculated, it can be compared with the required rate of return to a specific investment proposal to be accepted or rejected.

If it is assumed that there are three investment proposals, each costing \$ 9,000, and each of which has economic and depreciation expectancy of 3 years and will be expected that each of the three investment will proposals to ensure the accounting profit and cash flow through the next 3 years, it follows:

PERIOD	PROJECT A		PROJECT B		PROJECT C	
	profit	income	profit	income	profit	income
1	3000	6000	2000	5000	1000	4000
2	2000	5000	2000	5000	2000	5000
3	1000	4000	2000	5000	3000	6000

Each proposal will have the same average rate of return on \$ 2999/9000 \$ or 22.22%, and yet, it is rarely that a company will observe the projects regarded as equally good. Most companies would give priority to projects that provide a higher overall unemployment benefits in the first year. Therefore, the average rate of return does not satisfy all the desires of the project as a method of choice.

The period of return of the investment project refers to the number of years needed to compensate for the initial financial investment. It is the ratio of initial investment and annual cash income in the period of return. In the example that follows: Period of return = $18000/5700 = 3.16$ years.

If annual cash revenues are not equal, the job of the calculations is somewhat more difficult. If one assumes that the annual cash income in the first year \$ 4,000 in the second and third year of \$ 6,000, while the fourth and fifth year of \$ 4,000, the first three years of \$ 16,000 initial deposit be returned in the fourth year of the next \$ 4,000. In relation to the initial investment of 18,000 \$, payback period is 3 years + $\$ 2000/4000$ \$ or 3.5 years.

Internal Rate of Return

The general impression is that because of various shortcomings of internal rates of return and payback period method, discounted cash flow methods provide a more objective basis for evaluating and selecting investment projects. These methods take into account the size

and temporal separation of cash flow for each period of life of the project. DCF method is the internal rate of return and present value.

It should be noted that the internal rate of return on the investment proposal discount rate that equates the present value of expenditures with the present value of expected income.

Denoted r , so that:

$$\sum_{i=0}^n (A_i / (1 + r)) = 0$$

where: A_i - refund of money in period t , whether the costs or revenues,

n - a period in which the expected cash flow.

If the average cash cost of going in time 0, the previous expression can be expressed as:

$$A_0 = A_1 / (1 + r) + A_2 / (1 + r)^2 + \dots + A_n / (1 + r)^n$$

Thus, r is the rate that discounts estimated future cash flows - A_1 - A_n to be reduced to the initial expense 0. In the example problem is solved as follows:

$$NJ\ 1800 = 5700 / (1 + r) + 5700 / (1 + r)^2 + 5700 / (1 + r)^3 + 5700 / (1 + r)^4 + 5700 / (1 + r)^5$$

Solving this task it leads to the solution to the internal rate of return of 17.57%. Criteria based on which is accepted or rejected the project, is a comparison of internal rates of return with the required rate of return. If the internal rate is higher than the required rate, the project is accepted, if the smaller project will be rejected. If the required rate is 12%, if the application of this criterion is use that the investment proposal will be considered as accepted. The acceptance the project whose internal rate of return is higher than the required rate of return, it should result in an increase in stock market prices, because the company accepted a project with returning more than is required.

The net present value

The method of the internal rate of return is and the method of present value of discounted money returns, have a similar approach in planning the necessary capital. The method of the present value of all cash returns are discounted to present value, using the required rate of return. Net present value for the proposed investment is obtained by the formula:

$$NPV = \sum_{t=0}^n A_t / (1 + k)^t$$

where: k -required rate of return. If the sum of the discounted cash flows of 0 or more, the proposal is accepted, if the sum is less than 0, the proposal is rejected. Another way you can prove the following acceptance criteria: The project will be accepted if the present value of cash income is higher than present value of cash expenditures. Access to the acceptance criteria in this case is the same principle as the internal rate of return. If the required rate of return is such that it provides a return use that investors expect that the company will earn on an investment project and the company accepts the proposal of the net present value higher than 0, the market price per share should increase. The Company will accept a project that is greater than the refund that would be required to make the market price of the shares remained unchanged.

If it is assumed that the required rate of return is after tax 12% it is easy to determine the net present value in the example using the following expression:

$$NPV = -18000 + 5700 / (1 + 0.12) + 5700 / (1 + 0.12)^2 + 5700 / (1 + 0.12)^3 + 5700 / (1 + 0.12)^4 + 5700 / (1 + 0.12)^5 = -18\ 000 + 20\ 547 = \$\ 2,547$$

Profitability index

The index of profitability of the project or ratio the utility and costs, is the ratio of the present value of future cash flows and the initial cost. Calculated with the following formula:

$$P_i = \frac{\sum_{t=1}^N \frac{A_t}{(1+k)^t}}{A_0}$$

for example, a given profitability index is:

$$P_i = 20\,547 \text{ NJ} / 18000 = 1.14 \text{ NJ}$$

While the profitability index is always 1 or higher, investment proposal is acceptable. When the profitability index is calculated, the net index is calculated, not the aggregate index. The aggregate index is the ratio of present value of cash income and the present value of cash expenditures. The net index is used to distinguish between initial cost and future cash expenditures.

Inflation and investment decisions

When there is inflation to be manifested by a lower real rate of return and reduced motivation of companies to invest the capital. State of cash flow would improve the introduction of progressive methods of depreciation, but even so the previous statement still be effective. Companies simply at the time of inflation are not motivated. Thus invest less, and look for investments with shorter recovery.

In estimating cash flows, it is important that the company take into account the anticipated inflation. Very often, there is a presumption that in useful life of the project will remain the same price level. Favoritism occurs in the selection process, and because the required rate of return of the project usually is based on current costs of capital, which contain a premium for anticipated inflation.

By calculating the net cash flow in this way, we get the same result as before when, after deducting of amortization, net incomes determined, calculated tax on such income and then deducted from the annual tax savings to get the net cash flow.

The mathematical expression:

5

$$NPV = \left[\sum_{t=1}^5 \left[\frac{I_t (1.10)^t - O_t (1.10)^t \right] \cdot (1-0.40) + 0.40 \cdot 20\,000 \right] / (1.13)^t - 100\,000 = 11\,056 \text{ NJ}$$

where: I_t - the money supply in the year, O_t - cost money in the year, t - observed years.

The results are biased even though in a sense the discount rate includes the elements of anticipated of future inflation while estimation of cash flows does not contain these elements. The assumption that the current inflation rate of 10% and that such movement is expected in the next five years, means that if the cash receipts and cash expenditures grew at that rate, the net present value would be under \$ 11,056 according to the previous expression.

The risk of investments

Risk and uncertainty on investment

All decisions regarding capital investments are disclosed to this step as it is without exception based on an accurate prediction of future costs and revenues. The projected rate of return in the event of a given concrete proposals in this case it results from these figures. In the examples shown, the investment is strictly defined. Few investment projects that are limited to the precise specified life exposed to the original predictions given for the purpose, as any, that any decision regarding the expenditure of capital is always prone to drift in the unknown later date. The course of future events may affects the future cost of investment, current costs, the

market size, and therefore the final sales volume and the price at which the possible sale of the product. Therefore, we can say that it is very difficult if one fine table, a calculation that would be gathered and included all uncalculated and hidden influences and variables that can affect the outcome of a project, and business decisions are still based on a single type of data rates. This does not mean that the criteria of development, that were used and presented, is poorly designed and installed. They in the best possible way take advantage of the information on which they are based. Represent a conventional approach to valuation of investments; assess future outcomes as a result most stricken timing of future events, the level of future costs and revenues. With so best affected, the predicted flat rate of return manager may apply in person judging appearance of the proposed costs to survive or to make a profit. Otherwise, anticipation, and speculation continues to play a central role in selecting investments. Nevertheless, it is true when it is said, that during the last twenty years in connection with the investment experience went through significant modifications in the methods and techniques of evaluation of proposals. However, these improvements are not related to time-adjusted and adjusted rates of return that take into account the time value of money. The mentioned changes in the method are not sufficient in themselves to ensure the best possible tools for decision making in the analysis of investments in the future. Even if one accepts that the judgment of an experienced director is able to be a sustainable criterion for choosing between alternative investment projects, it is not enough to enable him to make an optimal decision. This can be done only by considerable experience in relation to specific types of investments. Some previous experience obtained in connection with concrete proposals for spending capital can certainly forms the basis for the judgment assessment of similar projects in the future. When a company enters many times small investment, the probability that the final variation to distinguish between the predicted and actual values to get to the simplification that is valid for a number of such projects. In these cases, one indicator of the desirability and acceptability of the project may be sufficient.

In contrast, when a project of the expenditure is expected be to influence the existing capital of the company and the structure of its assets, these conclusions regarding the sufficiency of a single best prediction criteria cannot provide support. It is probably really poorly and failed conduct of a major project to make a significant impact on the financial success of companies. Consequently speaking, still dividend potential of companies and its market strength may be difficult affected and damaged, and thus the power and ability of companies to raise capital for further term expansion, may suffer significant limitations. In the case of proposals for a large outlay is an essential need more information about the possible outcomes and future prospects for the efficiency of the project, to better long-term of corporate planning.

Improving information for decision making

The elaboration of improvement and the predictions should be a top priority in terms of finding the right decisions. As long as the expansion of market research, for example, or extrapolation can be the blind to manage errors and independence, and action should be taken and made. However, just as the price evaluation has always been and remains a major concern of senior accountants, and cost predictions should be compared to the additional benefits they produce. Where there is a necessary expense in order to achieve minimum increase prediction accuracy, and can be and how to demonstrate that such expenditure is necessary.

Again, most managers can give examples optimal and pessimistic mood of assessment. One frequently used method for the prevention of hidden risks and uncertainties occurs where the decision maker calls for a higher yield of a proposal that he considers risky. When it looks to those many variable factors that determine the profitability of a project may have

significant hidden independence, raising the percentage seems that the project is rejected, it may be represent some kind of shield to engage in uncertainty. Good faith explanation, however here is that this method is weak in some way since a decision-maker can never know the size of the final acceptance of risk, and may or may not know the right measure of risk which resists, better to say to avoid. Moreover, the precarious practice of raising the rate of rejection may restrict and narrow the flow of profitable opportunities that are necessary for permanent existence and growth and qualitative development of the company.

Examination of the results, the study will point to those estimates that are critical to the outcome of a given proposal. On this basis, they can highlight areas where further research is necessary of accuracy and precision of the forecast data. Additional and special attention was devoted those areas that are vital to productivity proposal can provide and how it improve predictions. To say the numbers point of view should be a stronger and more reliable basis for making conclusions. Predictions of provided investment and final evaluation of the investment will provide significant information, to one who makes decisions, in proportion of prediction costs and to available knowledge.

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