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The Influence of Top Athletes' Personal Factors on the Successful Coordination of Their Dual Careers

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Purpose: In this study, we wanted to determine the effect of personal factors on the successful coordination of a dual career of top Slovenian athletes.

Study design/methodology/approach: The survey was prepared and conducted online in 2018, and it lasted until 2019. The questionnaire was sent to over 400 top athletes in Slovenia. We selected the segment of respondents in the Club of Olympians who had a career of top athletes in their active years, during which they did or did not decide on an academic career.

The hypothesis was tested based on a survey among athletes who coordinated studies and sport. We used linear multiple regression analysis (the Enter method) to include all selected variables in the model simultaneously.

Findings: In this research, we found out a huge influence of personal factors on the dual career of top athletes. Personal factors that influence the most are well organised time, good work habits, persistence and diligence.

Originality/value: The conducted research determined the personal factors with the more substantial influence of dual careers of top Athletes in Slovenia.

Introduction

The career of a top athlete is relatively short, and only a few athletes can secure financial resources during their active sports career that would be sufficient to enable them to survive after their completed sports career. Therefore, it is imperative that as early as during their active sports careers, the top athletes start thinking about how they will provide for themselves after completing their sports careers. In addition, athletes with successfully completed education and acquired professions have a much better starting point for competing in the labour market.

The state also has interests in having as many top (recognisable) athletes as possible for the citizens to identify with, enhancing national awareness and state visibility (promotion). At the same time, successful athletes also result in the greater involvement of young people and adults in sports activities. This, in turn, enhances citizens' health and brings other social, cultural and infrastructural benefits. The question, however, is what the country is prepared to do to help educate active athletes.

Dual career

The concept of a dual career means successful coordination of sports and academic careers of top amateur athletes. In July 2007, the European Commission produced a White Paper on Sport, which defines sport and its role in citizens' daily lives. The term "dual career" appears for the first time in the White Paper.

To protect athletes' rights to engage in sports and education concurrently, European policymakers have begun to encourage EU Member States to support student-athletes at a local level by following the EU dual-career athlete guidelines. Since 2004, the European Network for Student-Athletes has actively been supporting the EU's efforts to promote a dual career by providing a platform for a better dialogue between educational institutions

(universities, colleges, sports schools) and sports organisations (clubs and sports federations). By promoting networking of institutions, the European Network for Student-Athletes aims to unify partners involved in top sports and education, promote the exchange of best practices in the field of dual-career athletes, strengthen links between education and sports organisations, and support and participate in projects and research on dual careers (Capranica et al., 2015).

The worst in the educational system is the provision for athletes at higher educational institutions (colleges, faculties, universities). The Higher Education Act (2012 with amendments) defines that higher educational institutions themselves determine the study regime, forms and periods of examination. Therefore, the adjustment of sports obligations of student-athletes depends on the individual higher education institutions. To guarantee equal opportunities for athletes, fulfilling the commitments within an educational programme has to be adapted (Sivec, 2005). The research (Jurak, Kovač and Strel, 2005) found that many top athletes studying have a student-athlete status. Still, the benefits offered by higher education institutions are very different. Athletes with the status of student-athletes distinguish themselves from other students in the fact that they have the possibility of reduced compulsory attendance at lectures, classes and other study obligations, the possibility of enrolling in the following study year after meeting at least half of the mandatory conditions, therefore, and the chance of passing exams outside regular deadlines. On the other hand, faculties provide their athletes with little help related to coordinating students' study obligations (preparation of additional study materials, organising additional study assistance, the possibility of distant performance of study obligations, etc.).

Clarke (1975; in Sivec, 2005) believes that athletes score as high as non-athletes, some even higher. In Slovenia, similar results have been obtained in Jurak, Kovač and Strel (2003 and 2005) research. High school athletes achieve similar overall success at the Matura exam as their peers and are slightly above average in compulsory Matura subjects. In their studies, Adler and Adler (1999; in Sivec, 2005) find that some athletes gain experience in the years they spend at university, some transition to professional ranks, and most are rudely thrown back into the society in which they are no longer appreciated or favoured and in which they are forgotten as quickly as they appeared and became important.

Due to active sports participation, athletes often leave school (Ogilvie and Howe, 1982, 1986; in Cecić Erpič, 2002a), many athletes commit themselves to school and education only after the end of their careers (Broom 1982; in Cecić Erpič, 2002a). In addition, a top sports career requires an individual to be entirely focused, so some individuals subordinate all their other activities to sports, including schooling and education. As a result, athletes often have a lower and poorer education at the end of their careers than their non-athlete peers.

The purpose of the research

The purpose of the study was to determine the effect of personal factors on the successful coordination of a dual career. Based on the question posed, we formed the following research hypothesis.

Hypothesis: Athlete personal factors influence successful coordination of a dual career.

Research methods in use

A quantitative method was used to collect the data. We prepared and conducted an online survey in 2018, and it lasted until 2019 since all the relevant information support had to be provided for its implementation. The questionnaire was sent to over 400 athletes in Slovenia. We selected the segment of respondents in the Club of Olympians who had a career of top athletes in their active years, during which they did or did not decide on an academic career.

The online survey was conducted from 5 April 2018 to 23 October 2019. The survey was successfully carried out and completed on 23 October 2019.

The hypothesis was tested based on a survey among athletes who coordinated studies and sport. First, we used linear multiple regression analysis (the Enter method so that all of the selected variables were included in the model at the same time. The Enter method shows us all of the variables in the results, even if their influence is not statistically significant). Next, we obtained the average response value from each factor, processed with Pearson's correlation coefficient and regression analysis. Finally, we measured the Study performance and the Sports performance with the Likert scale from 1 to 5.

Research sample

A total of 396 respondents participated in the quantitative survey, of which 165 agreed to complete the survey, of which 112 produced valid questionnaires. We eliminated 53 questionnaires as they were not completely filled in. Therefore, the quantitative research sample is N = 112, represented by the Republic of Slovenia athletes aged 19 to 76 years. Tables 1 to 8 show the demographic data of the respondents.

Table 1: Gender

Gender	Frequency	Percentage
Male	76	68 %
Female	36	32 %
Total	112	100 %

Table 1 shows the gender of the respondents. 68% were men, and 32% were women.

Table 2: Age

Age	Frequency	Percentage
up to 30 years	24	21 %
31 to 40 years	22	20 %
41 to 50 years	34	30 %
over 50 years	32	29 %
Total	112	100 %

Table 2 shows the age of the respondents. The age of the respondents was divided into four classes. 21% were under 30 years of age, 20% were from 31 to 40 years of age, 30% were from 41 to 50 years of age, and 29% were over 50 years of age.

Table 3: Current involvements in sports

Current involvements in sports	Frequency	Percentage
Yes	72	64 %
No	40	36 %
Total	112	100 %

Table 3 shows the respondents' current involvement in sports. 64% of the respondents are still active athletes, and 36% are no longer involved in sports.

Table 4: Current involvement in the studies

Current involvement in the studies	Frequency	Percentage
I am a full-time student in Slovenia	10	9 %
I am a part-time student in Slovenia	4	4 %
A graduate student (extra year)	2	2 %
Completed studies in Slovenia	71	64 %
Completed studies abroad	4	4 %

After the finished career, I am continuing my studies	2	2 %
I have not studied	2	2 %
I do not intend to studies	9	7 %
I have not studied	2	2 %
Other:	6	5 %
Total	112	100 %

Table 4 shows current involvement in the studies. 64% of the respondents have completed their studies in Slovenia, and 4% have completed their studies abroad. 9% of the respondents are studying full-time in Slovenia, and 4% are studying part-time in Slovenia. 2% of the respondents are graduates. 2% of the respondents continue their studies after the completed careers, and 2% of the respondents still intend to study. 7% of the respondents do not intend to study, 2% have never studied.

Table 5: Completed level of education

Completed level of education	Frequency	Percentage
Primary school or less (I and II)	2	2 %
Secondary Vocational Education (IV)	2	2 %
Grammar, secondary vocational-technical education, secondary technical or other vocational education (V)	14	13 %
College program (up to 1994), Vocational college program (VI / 1)	4	4 %
Specialisation after college, Professional higher education programs (VI / 2)	4	4 %
Higher Education Professional and University Program (1st year) (VI / 2)	17	14 %
Specialisation after Higher Education Professional Program, University Program (VII)	36	32 %
Master's degree (2nd year) (VII)	14	13 %
Specialisation after University Program, Master of Science (VIII / 1)	10	9 %
PhD (VIII / 2)	5	5 %
PhD (3rd level of Bologna system) (VIII / 2)	4	4 %
Total	112	100 %

We were interested in the level of education that the participants in the survey achieved, so Table 5 shows the completed level of their education. The majority (32%) of the respondents have completed Specialisation after Higher Education Professional Program, University Program (VII).

Table 6: Sports discipline

Sports discipline:	Frequency	Percentage
athletics - stadium	6	5 %
gymnastics - sports	6	5 %
sailing	2	2 %
judo	2	2 %
cycling - road	4	4 %
basketball	6	5 %
table tennis	8	7 %
football	4	4 %
volleyball	14	13 %
swimming	2	2 %
handball	4	4 %
skiing – Alpine	6	5 %
skiing – biathlon	2	2 %
shooting	2	2 %

Sports discipline:	Frequency	Percentage
tennis	2	2 %
dance - acrobatic R&R	2	2 %
dance - modern competitive dances	4	4 %
ice skating - artistic	2	2 %
karate	2	2 %
aviation - modelling	2	2 %
weight lifting	2	2 %
golf	14	13 %
fencing	2	2 %
skiing – biathlon – shi	2	2 %
skiing – ski-run - shi	4	4 %
squash	4	4 %
Other:	2	2 %
Total	112	100 %

Table 6 shows the sport disciplines in which the respondents are or have been engaged. Most respondents are or have been engaged in volleyball and golf.

Table 7: Slovenian Olympic Committee categorisation

Slovenian Olympic Committee categorisation	Frequency	Percentage
Olympic Categorization Class	2	2 %
World-class	12	11 %
International class	34	30 %
Perspective class	12	11 %
National class	34	30 %
Youth class	2	2 %
No categorisation	14	13 %
Other:	2	2 %
Total	112	100 %

Table 7 shows the Slovenian Olympic Committee categorisation. Most respondents are in the International and National classes.

Descriptive statistics

Personal factors are undoubtedly very important for a successful career, both professional and sports, and for the successful coordination of a dual career. Because top-level sport requires a whole person and a lot of sacrifices, we have researched which personal factors are essential for a successful dual career. The results of the responses describing the influence of the personal factors variable are presented in Table 8. We created a five-point Likert scale for the statements, whereby the numbers signify as follows: 1 – Not important at all, 2 – Not important, 3 – Neither important nor unimportant, 4 – Important, and 5 – Very important.

Table 8: Personal factors – Successful coordination of a dual career

PERSONAL FACTORS – Successful coordination of a dual career	N	Min	Max	AS	SD
Intellectual abilities	110	1	5	4,36	0,775
Sports skills	110	1	5	3,91	0,982
Emotional intelligence	110	1	5	4,15	1,057
Interpersonal or social intelligence	110	1	5	4,02	0,824
Interest in sports	110	2	5	4,20	0,907
Interest in studying	110	3	5	4,36	0,646
Interest in a successful professional career	110	3	5	4,09	0,749
Previous academic performance	110	1	5	3,31	1,047
Motivation for sports	110	1	5	4,15	0,907
Motivation to study	110	1	5	4,25	0,795
Motivation for professional success	110	1	5	3,75	0,999
Organisational skills	110	1	5	4,58	0,759
Intrapersonal intelligence	110	2	5	4,18	0,815
Diligence	110	2	5	4,62	0,704
Persistence	110	2	5	4,65	0,696
Extraversion (taking an interest in social events, being active and energetic)	110	1	5	3,15	0,887
Introversion (self-directed)	110	1	5	3,05	1,003
Emotional stability	110	1	5	4,29	0,828
Tendency to express one's own opinion	110	1	5	3,13	1,134
Acceptability (maintaining positive relationships with others; ability to understand others, overcoming the frustrations associated with life in a group)	110	1	5	3,87	1,015
Openness – cultural sophistication and openness to new experiences	110	1	5	3,67	0,978

Knowledge (related to study contents)	110	1	5	3,67	0,940
Use of prohibited accessories	110	1	5	2,00	1,241
Good luck	110	1	5	3,18	1,396
Examination skills	110	1	5	3,36	1,002
Exam fear, stress	110	1	5	2,84	1,080
Teamwork, successful collaboration with colleagues	110	1	5	3,85	1,091
Well-organised time	110	3	5	4,76	0,506
Organised learning, adherence to the right methods and proper preparation for exams	110	2	5	4,27	0,777
Good study habits	110	1	5	4,29	0,892
Good work habits	110	3	5	4,69	0,602
Other:	4	3	5	4,00	1,155

Legend: Min = minimum; Max = maximum; AS = arithmetic mean; SD = standard deviation

Table 8 gives the descriptive statistics for the influence of the personal factors variable on the successful dual career coordination. The respondents have noted that their most important personal factor in the successful dual career coordination is well-organized time (AS = 4.76, SD = 0.506), followed by good work habits (AS = 4.69, SD = 0.602), persistence = 4.65, SD = 0.696), diligence (AS = 4.62, SD = 0.704), organizational skills (AS = 4.58, SD = 0.759) and interest in studying (AS = 4.36, SD = 0.646). Personal factors, however, are not influenced by exam fear (AS = 2.84, SD = 1.080) and the use of prohibited accessories (AS = 2.00, SD = 1.241).

Top athletes subordinate their lives to sports and the desire to achieve the best possible results in competitions, so it is very important which sports activities affect successful dual-career coordination. The results of the responses describing the influence of the characteristic of the sports activity variable on the successful dual-career coordination are presented in Table 9. All responses were rated on a scale of 1 to 5, with 1 meaning "Not important at all" for the selected score and 5 meaning "Very important".

Table 9: Characteristics of the sports activity– Successful coordination of a dual career

CHARACTERISTICS OF THE SPORT ACTIVITY– Successful coordination of a dual career	N	Min	Max	AS	SD
Scope of training	110	2	5	4,29	0,782
Number of competitions (competition days per year)	110	2	5	4,24	0,789
Number of days absent from the study obligations	110	2	5	4,00	0,857
The physical difficulty of the sport	110	2	5	3,89	0,871
Distance to the training facilities	110	1	5	4,11	0,871
Level of the competitions	110	2	5	3,89	0,892
Number of preparation days per year	110	3	5	4,04	0,716
Time spent on physiotherapy	110	1	5	3,09	1,019
Time spent regenerating (in addition to night rest)	110	1	5	3,60	1,127
Time spent on individual psychological preparation	110	2	5	3,55	0,874
Time spent working with a sports psychologist	110	1	5	3,11	1,026

Legend: Min = minimum; Max = maximum; AS = arithmetic mean; SD = standard deviation

Table 9 gives the descriptive statistics for the influence of the characteristic of the sports activity variable on the successful dual-career coordination. From the results of the survey, we find that the scope of training mainly influences the characteristic of the sports activity in dual-career coordination (AS = 4.29, SD = 0.782) and the number of competitions (AS = 4.24, SD = 0.789), followed by the distance to the training facilities (AS = 4.11, SD = 0.871) and the number of preparation days per year (AS = 4.04, SD = 0.716). Less important characteristics of the sports activity with an impact on the successful coordination of the dual-

career are time spent working with a sports psychologist (AS = 3.55, SD = 0.874), time spent on individual psychological preparation (AS = 3.11, SD = 1.026) and time spent on physiotherapy (AS = 3.09, SD = 1.019).

Multivariate analysis

Below, we present multivariate analyses of the correlations among the studied variables. The basis for understanding the correlations among the variables and the first key condition for performing a linear regression analysis is to determine the mutual correlations between pairs of independent variables and between independent and dependent variables. In the following tables, we present a summary of the regression analysis (values of correlation coefficients, values of determination or adjusted determination coefficients), F-test (ANOVA) with which we tested the hypotheses. Based on the obtained results, we confirmed or rejected the hypotheses.

The hypothesis is:

Athletes' personal factors influence the successful coordination of a dual career.

To test the first hypothesis - H1, we checked the relationship between the *Personal factors - dual-career* variables *(pers_fac_1)* and *Successful coordination of a dual career (success_coor)*. We checked the relationship between these two variables with the following population regression model and hypothesis.

Population regression model:

$pers\_fac\_1 = \beta_1 + \beta_2 * success\_coor + u$

Hypothesis:

$H_0: \beta_2 = 0$

$H_1: \beta_2 \neq 0$

The hypothesis was tested with a linear regression analysis (Enter method), where the dependent variable is *Personal factors - dual career (pers_fac_1)* and the independent variable is *Successful coordination of a dual career (success_coor).*

Table 10: Linear regression

Model summary

Model	R	R^2	Adjusted R^2	The standard error of estimate
1	0,326[a]	0,106	0,098	0,41721

a. Independent variables: Successful coordination of a dual career

ANOVA [a]

Model		Sum of squares	sp	Average square	F	p-value
1	Regression	2,188	1	2,188	12,573	0,001[b]
	The rest	18,451	106	0,174		
	Together	20,639	107			

a. Dependent variable: Personal factors – dual-career

b. Independent variable: Successful coordination of a dual career

Coefficients [a]

Model	Unstand. coefficients	Stand. coefficients	t	p-value

		β	St. error	Beta		
1	(Constant)	3,336	0,161		20,697	0,000
	Successful coordination of a dual career	0,151	0,043	0,326	3,546	0,001

a. Dependent variable: Personal factors – dual career

In Table 10, the *R* multiple correlation coefficient shows the strength of the relationship between the *Personal factors - dual career* (*pers_fac_1*) dependent variable and the *Successful coordination of a dual career* (*success_coor*) independent variable. The R multiple correlation coefficient is 0.326, indicating a low correlation. The coefficient of multiple determination shows that 9.8% of the total variance is explained by the independent variable's influence, representing 90.2% of the unexplained influence. In the ANOVA Table, the *p*-value is 0.001 <0.05, and we can say that our model is good at 5% risk. Based on the obtained results and the values of the β regression coefficients, we can **confirm the H1 hypothesis** and conclude that the *Personal Factors - Dual Career* dependent variable influences *the successful coordination of a dual career*.

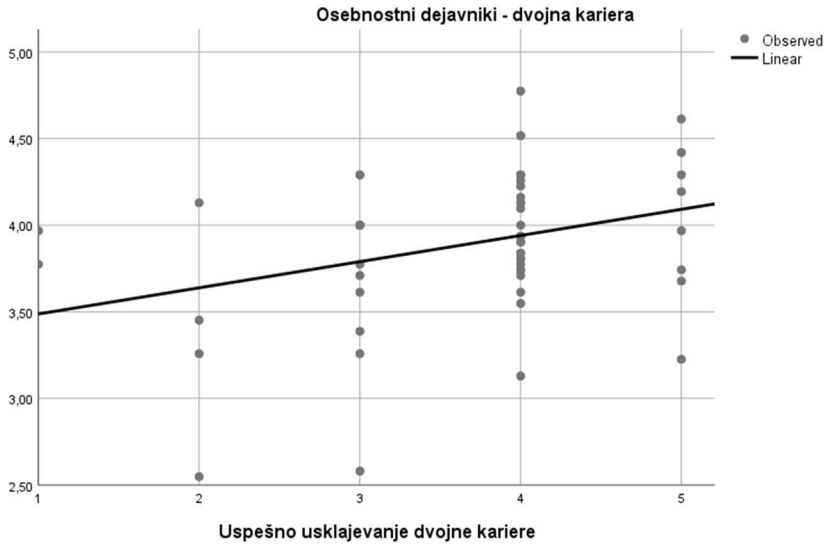

Figure 1: Linear correlation of the *Personal factors - dual-career* dependent variable and *Successful coordination of a dual career* independent variable.

Figure 1 shows the linear relationship between the *Personal Factors - Dual Career* dependent variable and the *Successful coordination of a dual career* independent variable. We see a positive and linear relationship between the *Personal Factors - Dual Career* dependent variable and the *Successful coordination of a dual career* independent variable.

Conclusion

Unfortunately, the success of a dual careers coordination all too often depends on the state's current policy. However, at the state level, the foundations for a systematic and permanent regulation of education of top athletes should be laid, which would prevent early school leaving, more formally educated top athletes, higher level of their employability, and more effective sports career.

Top results in sports require a lot of dedication, motivation, and sacrifice of athletes. An active sports career is usually short, so it is wise to attain an education during a sports career, as athletes often face problems when entering the labour market after a planned or unplanned sports retirement. Rarely does an athlete earn enough for life during his/her sports career, and they also face psychological problems after completing their sports career due to a changed lifestyle and reduced public attention.

We have to point out that a significant delay in acquiring the questionnaires can be attributed to the length and complexity of said questionnaires.

The end result of the research shows that personal factors greatly influence the dual career of top athletes, the most important of which is good time management. Other important personal factors include good work habits, persistence and diligence. An interesting topic for further research would be to compare the results of this study to a similar one performed in other countries and use the gained information to further help young athletes with their coordination of studies and sports.

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