

A TWO-FACTOR MODEL OF PERFECTIONISM IN SPORTS: RELATIONS WITH PERSONALITY TRAITS AND MOTIVATIONAL STRATEGIES

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Original scientific paper

DOI 10.26582/k.55.2.15

Abstract:

The main goal of the research was to examine the correlation between personality traits (conscientiousness and neuroticism), perfectionistic strivings and concerns, and achievement motives (hope of success and fear of failure). In this research, 348 respondents (111 women, 237 men) from Serbia, Montenegro, Bosnia and Herzegovina, aged 16 to 54 years, filled out the questionnaires. Personality traits were measured by the Big Five plus 2 (VP + 2) questionnaire. The Sport Multidimensional Perfectionism Scale 2 (Sport-MPS 2) and the Multidimensional Inventory of Perfectionism in Sports (MIPS) were used for measuring perfectionism, while the revised version of the Achievement Motivation Scale (AMS-R) was used for motivational strategies determination. The relations were investigated with the method of structural equations. The theoretical model showed satisfactory concordance with the empirical data (RMSEA = .021, SRMR = .019, CFI = .999, TLI = .996). The model predicts the mediating effect of perfectionistic strivings on the relationship between conscientiousness and hope of success, as well as neuroticism and hope of success, and the mediating effect of perfectionistic concerns on the relationship between neuroticism and fear of failure.

Key words: perfectionism, personality traits, motivational strategies

Introduction

For a long time, perfectionism has been recognized by sports psychologists as a trait that plays a vital role in the cognitive, affective, and behavioral functioning of athletes through various sports events (Dunn, Dunn, & Syrotuik, 2002; Gotwals, Stoeber, Dunn, & Stoll, 2012; Hall, Kerr, & Matthews, 1998). It is most widely defined as striving for extremely high standards accompanied by harsh self-criticism (Frost, Marten, Lahart, & Rosenblate, 1990). Previous research has shown a relationship between perfectionism and competitive anxiety in marathon runners (Hall, et al., 1998), burnout in tennis players (Gould, Udry, Tuffey, & Loehr, 1996), body image in figure skaters (Dunn, Craft, Dunn, & Gotwals, 2011), performance in triathletes (Stoeber et al., 2009a), self-handicapping (Torok, Szabo, & Orosz, 2022), even winning a gold medal at the Olympic Games (Gould, Diefenbach, & Moffett, 2002).

One of the most famous models that represent perfectionism as a construct made up of several dimensions is Frost's model, which distinguishes six dimensions within perfectionism (Jowett, Hill, Hall, & Curran, 2013). He hypothesizes two broad factors. The first refers to intrapersonal perfec-

tionist tendencies and implies the setting of personal standards and indicators that emphasize the irrational importance of these standards (such as preoccupation with mistakes, chronic suspicion of inadequacy, and the need for precision and order). Another factor is interpersonal perfectionistic tendencies that include the perception of parental pressure through unrealistic standards and criticism (Jowett, Hill, Hall, & Curran, 2013). Another relevant model of perfectionism was developed by Hewitt and Flett (1991), and according to this model, perfectionism can be directed toward oneself and toward others. Intrapersonal and interpersonal aspects are reflected in three specific dimensions: self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism (Sherry, Hewitt, Flett, & Harvey, 2003).

The potential integration of these two models is supported by research studies that suggest that two broad factors can be extracted from these two models: perfectionistic strivings and concerns, i.e., the adaptive and maladaptive perfectionism (Bieling, Israeli, & Antony, 2004; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). Factors show different, and often opposite, relations with psychological adjustment and maladjustment, particularly

when their overlap is partialized out (Stoeber & Gaudreau, 2017). Perfectionistic strivings consist of personal standards and self-oriented perfectionism, while perfectionistic concerns consist of socially prescribed perfectionism, concern about mistakes, and doubts about action (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000). Based on the dimensions that make them up, we can conclude that perfectionistic strivings primarily involve setting personal standards and striving for perfection, while perfectionistic concerns involve striving to achieve the standards set by significant others, as well as worrying about mistakes and doubts related to the action with excessive criticism if perfectionist standards are not reached. Studies that have dealt with the two-factor nature of perfectionism consistently show that aspirational perfectionism positively correlates with the adaptive phenomena in sports, such as coping strategies, hope of success, well-being, and even success itself, while concern perfectionism correlates positively with the maladaptive phenomena such as the avoidance coping strategies, burnout, fear of failure (Stoeber & Becker, 2008; Stoeber, Stoll, Pescheck, & Otto, 2008). Sports psychology currently uses this model to differentiate between healthy perfectionists, unhealthy perfectionists, and non-perfectionists.

The difference between perfectionistic concerns and perfectionistic strivings is also reflected in their correlations with personality traits. Personality traits refer to consistent behavior patterns, feelings, and thoughts (Allport, 1961; McCrae & Costa, 1999). When describing personality today, we often rely on the Big Five model, according to which personality can be described through five dimensions: neuroticism, extraversion, openness, agreeableness, and conscientiousness (John & Srivastava, 1999).

In previous research that examined correlations between perfectionism and personality traits of the Big Five model (Dunkley & Kyparissis, 2008; Enns, Cox, & Clara, 2005; Fee & Tangney, 2000; Hill, McIntire, & Bacharach, 1997; Langendörfer, Hodapp, Kreutz, & Bongard, 2006; Miquelon, Vallerand, Grouzet, & Cardinal, 2005; Nathanson, Paulhus, & Williams, 2006; Rice, Ashby, & Slaney, 2007; Sherry, Hewitt, Flett, Lee-Baggley, & Hall, 2007) only neuroticism and conscientiousness showed consistent correlations with perfectionism, while extraversion, openness and pleasantness showed an inconsistent pattern of correlation (Stoeber et al., 2009b). The research has shown that conscientiousness correlates positively with perfectionistic strivings, while neuroticism correlates positively with perfectionistic concerns (Dunkley & Kyparissis, 2008; Hill, et al., 1997).

Conscientiousness is defined in the Big Five model as a personality trait that measures indi-

vidual differences in self-discipline, perseverance, and thoughtfulness. It refers to the degree to which a person follows social norms and engages in goal-directed behavior (Hart, Stasson, Mahoney, & Story, 2007). Neuroticism measures individual differences in anxiety, depression, and negative affect. It is often defined as a reduced ability to adapt and emotional instability. Individuals with higher neuroticism scores more often experience negative moods, fear, and irritability (Judge, Higgins, Thoresen, & Barrick, 1999).

If we go back to the definition of perfectionism as the aspiration that primarily involves setting personal standards and striving for perfection, it is justified to assume a positive correlation with conscientiousness. We define concern perfectionism as striving to achieve standards set by significant others, as well as concern about mistakes and doubts related to the action with excessive criticism if perfectionistic standards are not reached. This can lead to emotional instability and reduced ability to adapt, all characteristics of neuroticism. Also, if we emphasize that the essential feature of perfectionism's aspiration is emotional stability and its connection with adaptive constructs such as well-being and coping strategies, we can expect a negative correlation of the mentioned construct with neuroticism.

Achievement motivation can be characterized as striving to achieve the highest goals important to the individual (McClelland, Atkinson, Clark, & Lowell, 1953). Achievement motives are essential in studying psychological predictors of success in athletes. In literature, the achievement motive is often divided into two dimensions: coping and avoidance, where coping is usually defined by the hope of success and avoidance by the fear of failure (Atkinson, 1957).

Previous research that examined the relationship between perfectionistic strivings and perfectionistic concerns with motivational strategies revealed that perfectionistic concerns consistently positively correlate with avoidance strategies, while perfectionistic strivings positively correlate with coping strategies (Gaudreau & Antl, 2008; Kaye, Conroy, & Fifer, 2008; Stoeber et al., 2009c; Zarghmi, Ghamary, Shabani, & Varzaneh, 2010).

Also, emotional instability and increased reactivity impact the choice of motivational strategy, so people who are more reactive and more oriented toward negative stimuli less often choose achievement motives (Elliot, 1999).

Bearing in mind the aforementioned results of empirical research, as well as the theoretical basis of the constructs themselves, the question of how personality traits influence the setting of goals in athletes remains open.

The aim of this research was to examine a model that predicts the relationship between personality

traits (conscientiousness and neuroticism), perfectionism (concerns and strivings), and achievement motives (hope of success and fear of failure). Based on the results of previous research, we hypothesized a positive correlation between conscientiousness and perfectionistic strivings, as well as conscientiousness and perfectionistic concerns. Also, a positive correlation was assumed between neuroticism and perfectionistic concerns, and a negative relationship between neuroticism and perfectionistic strivings. Regarding the association with motivational strategies, we hypothesized a positive correlation between perfectionistic strivings and hope of success, as well as perfectionistic concerns and fear of failure. Also, we hypothesized that perfectionistic concerns have a mediating effect on the relationship between neuroticism and fear of failure and that perfectionistic strivings have a mediating effect on the relationship between conscientiousness and hope of success.

Methods

Procedure

Consent from the respective authors was first secured for all the used questionnaires. The questionnaires were then translated from English to Serbian and the translation was checked by a re-translation into English. Data were collected on the premises of the clubs, either in a sports hall or a changing room. Before completing the questionnaires, the potential respondents were asked if they would like to participate in a survey; they were also asked to give written approval on the first page of the questionnaire. It was emphasized that participation was voluntary and that all those who were not interested in consistently participating and completing the questionnaires were allowed to quit.

Participants

In this research, 348 respondents (111 women, 237 men) from Serbia, Montenegro, Bosnia and Herzegovina, aged from 16 to 54 years ($M=21.24$, $SD=4.4$) filled the questionnaires. The sample included athletes, both amateur and professional, from team and individual sports. Respondents were presented with the basic information about the project and the purpose of the research, as well as the fact that the research is anonymous and that the author would keep the research data strictly confidential. In addition to the mentioned information, the title page also contained a part where the respondents had to confirm in writing that they had voluntarily agreed to participate in the research.

Questionnaires

Respondents first filled out a socio-demographic questionnaire (gender, age, education), then Sport-MPS-2 (Gotwals & Dunn, 2009), MIPS (Stoeber,

Otto, Becker & Stoll, 2007), AMS-R (Lang & Fries, 2006), and VP+2 (Smederevac, Mitrović, & Čolović, 2010).

According to Stoeber (2011), perfectionistic concerns and perfectionistic strivings are measured using different subscales of two questionnaires Sport-MPS 2 (Gotwals & Dunn, 2009) and MIPS (Stoeber, et al., 2007). In his study, Stoeber (2011) points out that general measures of perfectionism cannot measure the differences in perfectionism in sports and that it is, therefore, better to use multiple measures for each of the dimensions of perfectionism. When it comes to perfectionistic strivings, we use personal standards of the Sport-MPS questionnaire (Sport Multidimensional Perfectionism Scale; Dunn, et al., 2002, 2006; Version 2: Gotwals & Dunn, 2009) and striving towards perfection of the MIPS questionnaire (Multidimensional Inventory of Perfectionism in Sports; Stoeber, et al., 2007). For measuring perfectionistic concerns, concern over mistakes and doubts about actions of the Sport-MPS (Sport Multidimensional Perfectionism Scale; Dunn, et al., 2002, 2006; Version 2: Gotwals & Dunn, 2009) and negative reactions to imperfection in the MIPS questionnaire (Multidimensional Inventory of Perfectionism in Sports; Stoeber, et al., 2007) was often used.

The Sport Multidimensional Perfectionism Scale (Sport-MPS; Dunn, et al., 2002, 2006; Version 2: Gotwals & Dunn, 2009) is a revised questionnaire that measures perfectionism in athletes. It consists of 42 items divided into six subscales: concern over mistakes, organization, perception of parental pressure, perception of coach pressure, doubts about actions, and personal standards. Considering the results of previous research pointing out that the best indicators of perfectionistic strivings and concerns are the following subscales: personal standards, concerns about mistakes and doubt related to action (Stoeber, 2011), only these three scales were included in the research. An example item for the personal standards subscale would be: *If I don't set the highest standards for myself in the sport I play, chances are I'll end up as a second-rate player.* Examples of the items for concerns over mistakes would be: *Even if I fail partly at the competition, it is as bad as being a complete failure;* and for the action doubts subscale: *I usually feel insecure about whether training is preparing me well for the competition.* The respondent's task was to determine on a five-point scale how much the stated statements apply to him/her (1= I do not agree at all, 2= I mostly disagree, 3= I am not sure, 4= I mostly agree, 5= I completely agree). All subscales show good reliability (Gotwals, et al., 2010): for personal standards $\alpha=.77$, for concern over mistakes $\alpha=.79$ and for doubts about action $\alpha=.77$.

The Multidimensional Inventory of Perfectionism in Sports (MIPS; Stoeber, et al., 2007) is

another questionnaire developed to detect perfectionism in athletes. The theoretical basis for developing this questionnaire lies precisely in the assumption that perfectionism can lead to either negative, maladaptive consequences or positive, adaptive ones (Stoeber, et al., 2007). It consists of two subscales, measured by 10 items: negative reactions to imperfection (example item: *I get extremely angry if I make mistakes*) and striving for perfection (example item: *I strive to be as perfect as possible*). The respondent's task is to determine on a five-point scale how much the stated statements apply to him/her (1= I do not agree at all, 2= I mostly disagree, 3= I am not sure, 4= I mostly agree, 5= I completely agree). The Cronbach alpha coefficient for the dimension of striving for perfection is $\alpha = .90$, and for negative reactions to imperfection $\alpha = .86$. (Stoeber, et al., 2007).

We calculated the global score for perfectionistic strivings by summing the scores on the dimensions of personal standards measured by the Sport-MPS 2 questionnaire (Gotwals & Dunn, 2009) and striving for perfection MIPS (Stoeber, et al., 2007). We calculated the global score for perfectionistic concerns by summing the scores on the dimensions of concerns about mistakes and doubts about actions measured by the Sport-MPS 2 questionnaire (Sport Multidimensional Perfectionism Scale; Gotwals & Dunn, 2009) and negative reactions to the imperfection of the MIPS (Multidimensional Inventory of Perfectionism in Sports; Stoeber, et al., 2007). A higher score meant a greater presence of one or another type of perfectionism.

The Achievement Motivation Scale Revised (AMS-R; Lang & Fries, 2006) is a questionnaire used to measure the motivational strategies of hope of success and fear of failure. It consists of 10 items divided into two subscales: fear of failure (example item: *Even if no one would notice my failure, I fear tasks that I am not capable of doing*) and hope of success (example item: *I like situations in which I can discover how capable I am*). The respondent's task is to determine on a five-point scale how much the stated statements apply to him/her (1= I do not agree at all, 2= I mostly disagree, 3= I am not sure, 4= I mostly agree, 5= I completely agree). Cronbach alpha coefficient for hope of success is $\alpha = .78$, and for fear of failure $\alpha = .85$ (Lang & Fries, 2006).

Big Five plus 2 questionnaire (VP+2; Smederevac, et al., 2010), the questionnaire intended to measure seven dimensions of personality, was constructed based on lexical descriptions of personality in the Serbian language (Smederevac, et al., 2010). The questionnaire consists of seven dimensions of personality: neuroticism, extraversion, openness, conscientiousness, aggressiveness, and negative and positive valence; each of the mentioned scales contains two or three subscales. Conscientiousness and neuroticism scales were used in this

research. Respondents expressed their degree of agreement with the statements on a five-point Likert scale (1= I do not agree at all, 2= I mostly disagree, 3= I am not sure, 4= I mostly agree, 5= I completely agree).

The questionnaire of socio-demographic characteristics contained information about the respondent's sex, age, and education, then about the time the respondents spend on training on a weekly basis, the sport they primarily practice, the experience (in years) they have been practicing this sport and sports in general, and information about whether the respondent competes in any sports league, as well as information about the best result from the competition.

Data analysis

The structural equation method (SEM) was used to examine the theoretical model. When analyzing the data, we relied on suitability indicators that indicated the agreement of the theoretical model with the empirical data: RMSEA (Root-Mean-Square Error of Approximation), SRMR (Standardized Root Mean Square Residual), CFI (Comparative Fit Index), TLI (Tucker-Lewis Index). Data analysis was carried out using scripts written in the R programming language in R Studio.

Results

Descriptive statistics

Table 1 shows the descriptive indicators of the variables included in the research. The results of the Kolmogorov-Smirnov test for the normality of the data distribution show that deviations from the normal distribution occur in neuroticism and motivational strategies of hope of success and fear of failure. The values of skewness (Sk) and kurtosis (Ku) indicate significant deviations from the normal distribution only of the variable hope of success, where the curvature is shifted to the right, i.e., towards higher values, and of the variable neuroticism, shifted slightly to the left, i.e., towards lower values.

Fitting theoretical models with empirical data

As mentioned previously, the method of structural equations modeling was used to analyze the model that predicts the relationship between personality traits conscientiousness and neuroticism, perfectionistic strivings and concerns, and motivational strategies—hope of success and fear of failure.

The basic assumption was that perfectionism would have a mediating effect on the relationship between personality traits and motivational strategies. In addition, it was assumed that personality

Table 1. Descriptive indicators, indicators of characteristics of the distribution of results and the indicator of the reliability of the applied questionnaires

Variables	AS	SD	Achieved range	Sk	Ku	K-S	α
Neuroticism	75.66	23.26	38-152	.88	.44	.00	.94
Conscientiousness	103.58	13.68	64-136	-.06	-.36	.20**	.84
Perf. strivings	43.99	7.76	19-59	-.39	.16	.20**	.83
Perf. concerns	46.93	11.82	18-79	.17	-.22	.20**	.85
Hope of success	21.84	3.36	11-25	-1.12	.87	.00	.80
Fear of failure	13.89	4.79	5-25	.09	-.67	.00	.83

Note. ** $p < .01$; arithmetic means (AS), standard deviations (SD), Skewness (Sk), Kurtosis (Ku), Kolmogorov-Smirnov test (K-S) and Cronbach alpha coefficient (α).

Table 2. Fit indices of theoretical models with empirical data

Models	Values of fit indices							
	χ^2	df	p	χ^2 /df	RMSEA	SRMR	CFI	TLI
Model 1	92.08	5	0.00	18.42	.226	.089	.834	.535
Model 2	4.61	4	0.33	1.15	.021	.019	.999	.996

Note. ** $p < .01$; χ^2 /df – ≤ 3 (acceptable); ≤ 2 (good); RMSEA – $\leq .1$ (acceptable according to a milder criterion), $\leq .08$ (acceptable), $\leq .05$ (good); SRMR – $\leq .08$ (good); CFI – $\geq .90$ (acceptable); $\geq .95$ (good).

traits would have a direct effect on motivational strategies, namely neuroticism on the fear of failure and conscientiousness on the hope of success. It was also hypothesized that conscientiousness would have a positive correlation with concern perfectionism, and neuroticism would have a negative correlation with aspirational perfectionism.

The research results shown in Table 2 show that the model does not fit the data collected in the research.

Based on the modification index, changes were made to the model and a new model was obtained that fit the empirical data. The changes introduced in the model include the exclusion of the relationship between conscientiousness and perfectionistic concerns, the addition of the correlation between perfectionistic strivings and perfectionistic concerns ($r = .43$; $p < .001$) and the relationship between the hope of success and neuroticism ($r = -.23$; $p < .001$). The modified model showed a much better agreement with the empirical data (Figure 1).

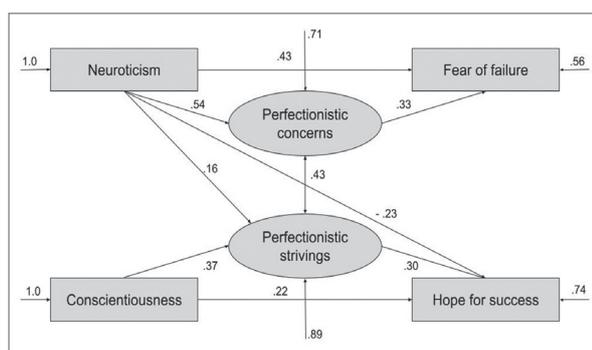


Figure 1. Estimation parameters for the modified model of the relationship between personality traits, perfectionism, and motivational strategies of hope of success and fear of failure.

Neuroticism had the greatest positive effect on perfectionistic concerns ($r = .54$; $p < .001$) and then on the fear of failure ($r = .43$; $p < .001$), while it had the weakest connection with the perfectionistic strivings ($r = .16$; $p < .001$) and a negative association with hope of success ($r = -.23$; $p < .001$). Conscientiousness had a positive effect on perfectionism aspiration ($r = .37$; $p < .001$) and hope of success ($r = .22$; $p < .001$). Perfectionistic concerns had a positive effect on fear of failure ($r = .33$; $p < .001$), while perfectionistic strivings had a positive effect on hope of success ($r = .30$; $p < .001$).

Discussion and conclusion

This research aimed to examine a model predicting the relationship between personality traits (conscientiousness and neuroticism), perfectionism (concerns and strivings), and achievement motives (hope of success and fear of failure). As an additional goal, we asked whether perfectionism would have a mediating effect on the relationship between personality traits and motivational strategies. Based on the results of previous research, we assumed a positive correlation between conscientiousness and perfectionistic strivings, as well as a positive correlation between neuroticism and perfectionistic concerns. Regarding the connection with motivational strategies, we hypothesized a positive correlation between perfectionistic strivings and hope of success, as well as perfectionistic concerns and fear of failure. Also, based on previous research, we hypothesized a negative relationship between neuroticism and perfectionistic strivings. Through additional analyses, we established a significant relationship between perfection-

istic strivings and perfectionistic concerns. Also, the change compared to the initial model included the introduction of a link between neuroticism and hope of success, which is in line with previous research showing a negative correlation between neuroticism and coping strategies (Hart, et al., 2007).

The results show that a high score on neuroticism has a positive effect on perfectionistic concerns, fear of failure, and a negative effect on hope of success while establishing a low correlation with aspirational perfectionism, which is in line with the theoretical assumption that more emotionally unstable people, who have elevated reactivity and are more often perfectionists, express their aspirations through the perfectionism of care (Dunkley & Kyparissis, 2008), and opt for avoidant motivational strategies (Elliot, 1999).

Conscientiousness has a positive effect on perfectionistic strivings and motivational strategy hope of success, which is also in line with expectations, considering that people with a high score on conscientiousness more often choose coping strategies and exhibit behavior directed toward achieving the goal (Costa & McCrae, 1992; John & Srivastava, 1999).

Perfectionistic concerns have a positive effect on fear of failure, while perfectionistic strivings have a positive effect on hope of success. Considering that perfectionism aspiration and the motivational strategy of hope of success have in their definition the setting of high personal standards with the aspiration to achieve them, it was justified to expect such a relationship. Perfectionistic concerns and fear of failure also contain a common characteristic: precisely avoidance and fear as a consequence of setting high goals, so we can also say that expectations align with the assumptions.

As for the mediating effects of perfectionism in the relationship between personality traits and motivational strategies, special attention is drawn to the mediating effect of perfectionistic strivings on the relationship between neuroticism and hope of success. Namely, in this relationship, perfectionistic

strivings change the direction of the effect of neuroticism on hope for success, which becomes positive, while in a direct relationship, it is negative. This can be explained by the fact that anxiety in neuroticism, in conjunction with personal standards and striving for perfection, influences success orientation in goal setting. In some of the following research, more attention should be paid to this relationship and to the examination of under what conditions neuroticism has a positive effect on goal setting.

The results of the research show us how personality traits can have an effect on setting goals and indirectly on the success of athletes, as well as the importance of perfectionism itself in that relationship. The obtained results, in addition to the theoretical ones, can also have practical relevance for the work with athletes in order to achieve better results. As perfectionism is a way of thinking that significantly affects success, it is important first to differentiate between the two mentioned types of perfectionism and then strengthen the perfectionism of the aspiration and influence motivational strategies through it.

Limitations and future directions

It is also necessary to refer to the shortcomings of the given research. This research did not include differences between athletes who practice professional and amateur sports, and the conditions in which the respondents filled out the questionnaires were also not controlled. Namely, some candidates filled out questionnaires immediately before the competition itself, others before or after a training session, which are not equally stressful conditions and could have an impact on the results themselves. In some of the following research, it would be interesting to test the model in different situations and thus check whether the degree of stress of the situation in which the questionnaires were filled out impacts the results. It would also be interesting to examine how the model performs in samples of professional and amateur athletes.

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Submitted: May 5, 2023

Accepted: July 12, 2023

Published Online First: November 25, 2023

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