Motivation, workout and performance - a model for amatorial sports

Mattera, Raffaele

Department of Economics and Statistics, University of Naples "Federico II", Italy

20 May 2017

Motivation, workouts and performance: a model for amatorial sports

Mattera Raffaele[a]

[a] Department of Economics and Statistics, University of Naples Federico II, ITALY

Raffaele Mattera,

Via Pietro Piovani 25,

80145 Naples ITALY,

E-mail: raffaelematteraunina@gmail.com

Abstract: The previous literature has not devoted enough space to "motivation for training" issues, especially for amateur sports. Generally, is possible imagine some factors which influence motivation for training in professional sports like an high remuneration, fame, etc. However is more difficult find these motivation factors it in the amatorial context, because an amatorial player already has not a substantial remuneration, has a job beyond sports, etc. The main result of this paper is that a large number of players in a team encourage each other to work hard during training session. All based on the assumption that more workout brings to better performance.

Keywords: motivation for training, amatorial sports, work motivation, workout motivation, sport

Introduction

Even in sports the relationship between performance and incentives is very important and empirically some studies show that an high degree of self-determination is associate with higher levels of performance (Gillet, Vallerand, Amoura, & Baldes, 2010). In a general point of view, we can argue that the structure of incentive is too important.

Barnard (1938) was one of the major scholars of incentive theory and many general conclusions are also applicable to the sports industry. Barnard proposed the distinction between monetary and non-monetary benefits. From his words:

"*An organization can provide the necessary resources to its existence, then, either by the objective incentives it provides or by changing states of mind ... We will call the process of promoting the" incentive method "and the processes of Changing subjective attitudes "the method of persuasion"*

In the professional sports industry (NFL, NBA, MLS, etc.), monetary incentives (like sponsorship and remuneration) are very substantial and players are encouraged to do enough efforts during the workouts (Gibbson e Murphy, 1992). In addiction, team owners have to win to maximize their profits and to achieve this goal must encourage their players to work hard: a lack of incentives for team owners leads to a lack of incentives for players (Palomino and Rigotti, 2000). This does not mean that there are no non-monetary incentives: fame, glory, entertainment and others are non-monetary incentives that for some players can also be very strong.

However, for amateur players, not all the conclusions of the literature are valid: these players often have no substantial remuneration, have no sponsorship, and may only have non-monetary incentives. They play for the pleasure of doing sports and their goal is not the high remuneration but only to play the match.

In general, as Laffont and Martimort (2001) point out, a good balance between incentives and performance is strongly dependent on an unstable and very competitive environment. If this is true, we can think that, in line with Laffont and Martimort, increasing the number of players in a group (as competition increases) increases the team's performance. This is because more competition drives to work harder and this leads to better performance.

In another point of view, according to Ramis, Torregrosa, Viladrich and Cruz (2017), we have two level of motivation: intrinsic and extrinsic motivation. The intrinsic motivation rappresents individuals who participate in an activity because their satisfaction derive from the participation itself. The extrinsic motivation refers to individuals who perform an activity because have consequent benefits of participation.

In this scheme, we can image amatorial players like individuals for whom internal incentives prevail over external ones. The reverse for professional players.

So, many other studies have focused on the structure of incentives in the sports economy and they show there is a strong connection between motivation and performance (Lazear and Rosen, 1981; Coetzee, Grobbelaar, & Gird, 2006; MacNamara, Button, & Collins, 2010). However in reality there are few industry where empirical tests about the magnitude and effects of incentives are possible, due to the few available data. This is true expecially for the amatorial context, for which there is a structural lack of available data.

In the end, in this paper we refer, according to the CPSA classification presented by Andreff and Szymanski (2006), to SPR and PRO (principally football and basketball) sports categories. However, we can extend these results to all team sports in amateur contexts.

The simple model

In general, it is possible to demonstrate what has been said in analytical terms as well.

Consider a really simple model in which we analyze how the number of players present in a team can influence the incentive to work hard during workouts. As we have already mentioned, we started from the assumption that greater the number of workouts is, greater the team's performance is.

In this model we will consider various variables. In particular we call:

Q, the quality of players in the Team;

H, the incentive to make a large number of workouts;
L, the incentive to do a low number of workouts;
P, team performance and
W = number of training sessions.

Finally, N is the number of players in the group.

Assume that Performance depends (positvley) by number of training sessions (which is influenced by number of players in the Team) and by quality of players (Q). For this reason:

$$P(W(N), Q)$$
$$\quad + \qquad +$$

The most important hypothesis of this model is that players do more workouts greater is this difference: H + N > L - N.

H + N is the incentive to do more efforts during training sessions, considering that as the competition increases in the team, having fewer opportunities to play, players will train harder to emerge than others: that is the reason both H and N are positive. If you increase the number of competitors (N), everyone will be encouraged to train hard to play.

However, L-N is the incentive to not do enough workouts, which decreases when N increases beacause the benefit L decreases if the number of competitors increases: if the athlete wants to play, he will have to do efforts during workouts to demonstrate he is better than others. So the benefit L is drastically reduced by the increase in N and for this reason L is positive and N is negative.

Suppose that amateur players prefer less workout (L> H) and that team peformance in match (P) increases as training hours increase (W). We know that W is greater in H than in L. Assuming that the team owners want to maximize Team performance, they will surely impose on players to make H.

In a nutshell, players choose H only if N is large enough. To maximize performance, the company will impose H taking more players into the roster. Analytically, a player chooses H if and only if:

$$H + N > L - N$$

So:

$$N > \frac{L - H}{2}$$

This means that when N is above a certain threshold ($N > \frac{L-H}{2}$), all players will do H (an high number of workouts), otherwise they will be L.

However someone might argue that this threshold does not have to be too large because too much competition might deter some players from going away and look for another team. In general, this criticism is easy to refute if

we assume that the best players and those who engage in workouts are those that actually play more than others: the effect of the competition is to keep only the most motivated and of the highest quality players.

In the end, if Performance (P) is a function of Technical Quality (Q) and the number of workouts (N) (we have discussed this relationship above) then we can conclude that the number of players sufficiently high assures a better performance, especially in the amateur context.

Conclusions

The main conclusion of this paper, according to literature, is that the only solution to forcing players to increase their efforts, supposing remuneration and fame are not incentives for the amateur context, is to make the team more competitive by increasing the number of players.

If you accept the basic hypothesis that a competitive environment allows the group to improve their performance, it can be demonstrated through with this model increasing the number of players in the team improves the performance of the group.

Some authors may argue that this model is not perfectly adaptable to industrial sports professionality, because other incentives are completely different from amateur sportsmen. It is also possible to imagine that weighing more on overall performance than the efforts during the workouts is the quality of the team's players.

However, it can not be concealed that even the quality of the players improves the number and quality of the workouts. For this reason the result of this model is generalizable also for the professional industry: a good team owner and a good coach should consider the idea of holding numerous number of players with the aim of improving the quality of the Workouts And therefore the overall performance.

It is recalled many times, this model is perfectly applicable to the amateur sports industry, where monetary incentives are scarce or totally non-existent and is also generalizable for the professional sports industry.

Studying the basic behavior of amateur societies and players is a path that literature should continue, as the general assumptions are not always perfectly matched.

References

1. Barnard, C., (1938), The Functions of the Executive, Cambridge.
2. Lazera, E. and Rosen, S. (1981), 'Rank Order Tournaments as Optimal Labor Contracts', Journal of Political Economy, 89, 841–64.
3. Gibbons, R., and Murphy, K. J. (1992), 'Optimal Incentive Contracts in the Presence of Career Concerns: Theory and Evidence', Journal of Political Economy, 100(3), 468–505
4. Palomino, F. and Rigotti, L. (2000). The Sport League's Dilemma: Competitive Balance Versus Incentives To Win, Tilburg University CentER for Economic Research Working Paper No. 2000-109.
5. Laffont J., and Martimort D., (2001),THE THEORY OF INCENTIVES : THE PRINCIPAL-AGENT MODEL, Princeton.
6. Coetzee, B., Grobbelaar, H. W., & Gird, C. C. (2006). Sport psychological skills that distinguish successful from less successful soccer teams. Journal of Human Movement Studies, 51(6), 383–401.
7. Andreff W., Szymanski S., (2006), Handbook on the Economics of Sport, Edward Elgar Publishing Inc.
8. Gillet, N., Vallerand, R., & Rosnet, E. (2009). Motivational clusters and performance in a real-life setting. Motivation and Emotion, 33(1), 49–62.
9. Gillet, N., Vallerand, R. J., Amoura, S., & Baldes, B. (2010). Influence of coaches' autonomy support on athletes' motivation and sport performance: A test of the hierarchical model of intrinsic and extrinsic motivation. Psychology of Sport and Exercise, 11(2), 155–161.
10. Szymanski S., (2010), The comparative economics of sport, Palgrave Macmillan.
11. MacNamara, A., Button, A., & Collins, D. (2010). The role of psychological characteristics in facilitating the pathway to elite performance: Part 1: Indentifying mental skills and behaviors. The Sport Psychologist, 24, 52-73.
12. Claudia Zuber, Marc Zibung & Achim Conzelmann (2015) Motivational patterns as an instrument for predicting success in promising young football players, Journal of Sports Sciences, 33:2, 160-168
13. Ramis et al. (2017). The Effect of Coaches' Controlling Style on the Competitive Anxiety of Young Athletes, Frontiers on Psychology, Volume 18, Article 572.