IMPACT OF FINANCIAL INCENTIVES ON THE PERFORMANCE OF FIELD HOCKEY TEAMS (MEN): A CASE STUDY OF HIGHER EDUCATION INSTITUTIONS (HEIs) OF PAKISTAN

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ABSTRACT

Consistent decline in performance of Pakistan Field Hockey team (men) in excellent international competitions has raised a serious concern among professionals. it has become an area of great interest to discover underlying causes of this phenomenon. Economic model of sports suggests that one way of understanding underlying cause of various variables associated with sports performance is assessing the role of finance. This study sought to understand the impact of financial incentives on performance of field hockey varsity players (men) in Pakistan. For this purpose, a self-developed questionnaire that was consisted on 21 items, was distributed among all (eleven) teams (men) of field hockey that were qualified for participation in intervarsity hockey championship (men) Pakistan. For analysis, a simple regression was run to explore the relationship among financial incentives for varsity student field hockey athletes (males) hockey infrastructure, coaching facilities and their sports performance. The analysis indicated that all of three dependent variables (facilities, coaching and performance) found to positively related with financial incentives. Findings suggested that institutions of higher education should offer additional financial benefits for varsity hockey athletes with the aim of achieving objective of uplifting the performance of field hockey (men) at university level in Pakistan. The findings further highlight that the universities should allocate enough finance to develop and to promote sports infrastructure and coaching facilities of high quality to raise the standard of field hockey at universities in Pakistan. The findings of this study put forward the importance of reviewing policy matters regarding budgetary allocations and their usage for national game of Pakistan in institutions of higher education.

Keywords: *Finance, Field Hockey, Student Athletes, Universities, Sport Performance*

Introduction

Field Hockey has been a popular sport in almost all of the continents. It is a popular sport and recognized as a national game of Pakistan. The historical data indicates that since 1958 to 1994, Pakistan

Field Hockey team (men) has prestigious record of winning several excellent competitions. Those include eight medals in Olympics; three gold (1960, 1968, 1984), three silvers (1956, 1964, 1972) and two bronzes (1974, 1992) ("Field hockey at the Olympic Games," 2016). In history of Field Hockey World Cup, hockey Pakistani team (men) won four gold and two silver medals ("Pakistan men's national field hockey team," 2016). In addition, Pakistan field hockey men's team stood three times on the place of champion in champion trophy. However, since 1998 a significant decline has been observed in the performance of Pakistan filed hockey team (men). At present, Pakistan national hockey team could not qualify for participation in Hockey World Cup 2014.The data demonstrates a very poor performance of Pakistan Field Hockey in world scenario as compared to 70s, 80s and 90s. This remarkable decline in the performance of Pakistani national team of field hockey raised serious concern among the professionals. Importantly, in recent years, researchers and professionals in sports science interested to identify the factors that contributed in the decline of field hockey in Pakistan.

Traditionally, Higher Education Institutions (HEIs) considered among the important streams of the gross root structures and sport management units in any country (Georgakis & Light, 2012).Unlike several countries of the world (Flowers, 2009; Henry, 2010), universities in Pakistan obviously play an important role in the development of elite athletes through organization of intervarsity competitions. In the case of Pakistan, intervarsity competitions of field hockey game being organized under the management of Pakistan Universities Sports Board (PUSB), which works under the supervision of Higher Education Commission (HEC), Pakistan. Through, intervarsity competitions higher education institutions make major contribution in organization and promotion of field hockey at national level.

With regard to the factors of sports performance, there are some suggestions indicated that

sports performance primarily rely on the amount of investment of financial resources. For example, advocates of economic model of sports performance conceptualizes that the goal of sports promotion and enhancement can be achieve through increasing investment of financial resources on sports (Andreff, 2001; Bernard & Busse, 2004). According to this view, sports performance positively related with financial investment (Manuel Luiz & Fadal, 2011). In the context of higher education institutions (HEIs), one way of increasing financial investment includes allocation of adequate budget to provide financial incentives to the players of hockey in universities. In overall sports system, unlike facilities and infrastructure, physical fitness, coaching and training, the importance of a players itself is central for sporting success. In the life of a player, finance incentives are among the powerful motivators and sources of effort investment for sports successes.

Specifically, studies in the sports context provided some evidences regarding positive effect of financial incentives on perceptions towards coaching, training, and utilization of sports facilities. For example, Horn (2000) demonstrated that college players with financial incentives (sports scholarships), in comparison with perceptions of athletes receiving no financial incentives by educational institution, exhibited higher level of motivation in sports participation and depicted more positive perceptions towards coaches and sports training. In contrast, poor financial incentives for players can have adversely affect their efficacy and their perceptions concerning sports participation, investment of effort in skill learning, improvement in fitness and coaching (Holt, Kingsley, Tink, & Scherer, 2011).

In these lines, one area of inquiry might be assessing the relationship between the financial incentives for university field hockey players (Haden, 2001) and their relationship with their perceptions towards indicators of sports performance such as, physical fitness and training, coaching, and sports facilities. Prior studies suggest that sports performance greatly depends

on the physical fitness (Gabbett, 2010; Manna, Khanna, & Dhara, 2011; Vescovi, 2014), good coaching (Gearity & Murray, 2011; Wiman, Salmoni, & Hall, 2010), sports facilities (Schwarz, Hall, & Shibli, 2015), and sports training (Güllich, 2014; Hanjabam & Kailashiya, 2014; Tucker & Collins, 2012). Due to the fact that the variables including physical fitness, sports coaching, sports facilities, and sports training are considered fundamental for sports performance; hence, these variables can be used as proxies of performance of field hockey teams.

The need for financial incentives allocation for players in universities can be realized in the framework of dual responsibilities and some additional load on athletes in comparison with non-athletes students in HEIs. As, athletes in HEIs have to bear dual load in the form of endeavoring to achieve their academic goals while simultaneously acting as an agent of wining fame in the field of sports to raise positive image of HEIs in the community (Carodine, Almond, & Gratto, 2001). They also face some additional problems such as, problems created by faculty members, problems by peer students, time management, health issues, extra stress due to physical training along with academic assignments and pressure put on by coaches and university authorities (Elferink-Gemser, Visscher, Lemmink, & Mulder, 2007; Henry, 2010; Simiyu, 2010).

It is a matter of fact that athletes in education institutions being considered as a special class of students that require specific policy-making and treatment (Freeman, 2012). Providing them extra financial incentives can be one form of compensation in response to their specific role (e.g., student and athlete) in the universities (Haden, 2001; McCormick & McCormick, 2006). The financial incentives for varsity hockey players can be in form of scholarships, prize money, free dormitory on campus, free transporting facilities, fee waves, stipends during training and competitions, free supply of food from university mess, free supply of sports kits, and free supply of sports equipment (Porto, 1985).

Prior research suggests that good financial conditions of athletes and spending sufficient budget on student athletes can lead to increased sports participation and training, increased utilization of facilities and sports equipment, increased motivation and investment of physical effort to win, reduced stress, and improved satisfaction (Sotiriadou, Shilbury, & Quick, 2008). These factors collectively may results in improved physical fitness, increased interest in receiving coaching from good hockey coaches, and ultimately improved performance. With regard to field hockey players in universities of Pakistan, it is unclear that whether increased financial incentives offers for hockey athletes likely to improve their efficacy regarding coaching training, fitness, and positive perceptions towards facilities, ultimately improved performance. Using economic model of sports performance, we intend to know whether increased financial incentives for hockey athletes can lead to improve performance.

Jian-chen (2007) indicated that sports facilities and coaching in universities play a significant role in improving performance and participation of student athletes. Among the facilities, availability of Astroturf pitch thought more important to maintain standard of field hockey game in universities (Durack, 2013). Sibson (2005) argued that the globalization of field hockey placed affective stress at the grass-root structures (e.g. universities, clubs, and associations) to develop sufficient Astroturf, playing surfaces, spectators areas. In addition, other indicated the importance of facilities for talent identification, increased participation (Wicker, Hallmann, & Breuer, 2013), raise standard and talent identification for sports (Martindale, Collins, & Daubney, 2005; Georgakis & Light, 2012). These findings emphasize the significance of infrastructure of field hockey game and the need of professional standard field hockey facilities in universities.

In addition, the quality and quantity of physical fitness training also believed to consider among the important determinants of sports performance, particularly at gross-root levels

in universities (Grove & Hanrahan, 1988; Keogh, Weber, & Dalton, 2003). The rapid changes in completion rules of field hockey game during the past few decades as well as introduction of synthetic surface has remarkably altered the physiological demands by the players at all levels including national, international, intervarsity levels (Gabbett, 2010; Reilly & Borrie, 1992). It has been suggested that physical fitness and physiological demands on the field hockey players significantly changes as a function of changes in training seasons (pre-competition, post-competition-during competition, off-season, maintenance season) (Astorino, Tam, Rietschel, Johnson, & Freedman, 2004). Moreover, it has been indicated that the acquisition of expertise in field hockey is multidimensional requiring intense training of wide ranges of tactical, technical, and psychological skill training (Cote, Baker, & Abernethy, 2004; Elferink-Gemser et al., 2007). This require adequate coaching by expert and skilled coaches (Baker, Horton, Robertson-Wilson, & Wall, 2003).The expertise and potential of the coach to provide feedback contribute to enhance skills and techniques of the players and thus considered one of the major contributors of development of expert players (Baker et al., 2003). This point towards the need of a systematic and scientific plan of physical fitness and training program throughout the year in universities for intervarsity hockey players under the supervision of skilled and experienced physical fitness trainers.

Purpose of the study

The purpose of this study is to assess the influence of financial incentives on the performance of field hockey intervarsity players of Pakistan. Additionally, we sought to determine the relation between financial resources and sports facilities and coaching as well.

Significance of the study

This analysis based on grassroots data may be able to identify the underlying causes of decline in field hockey at national level in Pakistan. It may further contribute for better policy-making and managem-

ent field hockey for identification and development of talent in the game of hockey.

METERIAL AND METHODS

Population and sample

The population was 176 (11x16) student players of field hockey teams (men) from eleven universities of Pakistan. The response rate for questionnaire was 82% (144 out of 176 respondents). 126 questionnaires out of 144 found suitable for data analysis. All hockey athletes were male, willing to participate voluntarily in this study and recruited by sending a letter to the managers and coaches of university hockey teams requesting them to allow their players to involve in this study. With the consents of team coaches and managers, the researchers contacted by telephone to the players and arranged the time and place to meet the investigators. All participants provided Informed consents prior to data collection. The researchers made it assured that information obtained from participants, would be keep confidential. The researchers further informed to participants that they could withdraw their participation in the study at any time.

Instrument

A 21 item Likert-type questionnaire was developed for data collection. The options of strongly agree (SA), agree (A), uncertain (UNC), disagree (DA), and strongly disagree (SDA), were presented in front of each item. The participant's task was to express their honest opinion by putting the check mark (√) on the option that best represented their opinion. The questionnaire included two constructs i.e. performance, and financial incentives. Whereas, questions concerning a) facilities, fitness and training, and coaching were used as proxies of construct one (performance).

With regard to proxies of performance e.g. a) facilities) fitness and training, and c) coaching), questions concerning sports equipment, availability of comfortable accommodation for stay, membership of hockey club, and availability of playing surfaces such as grassy fields and Astroturf were included in

proxy one (facilities). The items such as availability of physical fitness trainer, provision of physical fitness plan through the year, skill of their physical fitness trainer, experience of trainer, and regularity in participation in training program, were included in proxy two (fitness). However, the proxy three consisted of questions such as availability of experienced hockey coach, expertise of hockey coach, adequacy of coaching services, coach's feedback regarding correction of errors in skills, and effectiveness of coaching.

In construct two (financial incentives), the questions concerning the provision of financial allowances for participation in training camps, amount of daily allowances, money spending on hockey athletes, career opportunities based for hockey athletes, sports quota for admissions in universities and sports scholarship, were included in this construct. Thus, construct one comprised of 15 items whereas, each proxy was composed of five questions. The remainning six items were included in construct two (financial incentives).

Five experts took part in the discussion to decide the constructs and content of the questionnaire. Those experts included one PhD, one student of PhD program, one student of master in physical education, one intervarsity level hockey player and one university hockey coach. The focus of experts during instrument developmment was that only those items should be included those are directly related with the issue under investigation and had ecological significance and relevancy with context of Pakistan. Regarding validity of the questionnaire, the analysis showed 0.885 at Cronbach's Alpha level, showed higher level of validity and consistency of this instrument.

Data analysis

For the purpose of data analysis, SPSS Statistics version 20 was used. Using the financial incentives as criterion variable, a simple regression was run with each explanatory variable (facilities, coaching, and fitness).

RESULTS

The analysis showed that per-formance of intervarsity hockey teams, sports facilities, and coaching were predicted by the amount of adequate financial incentives for student hockey athletes.

With regard to using finance in a regression analysis to predict performance, the analysis revealed that the prediction model was statistically significant, $F = 59.730$, $p < .001$ and accounted for approximately 32% of the variance of performance ($R^2 = .325$, Adjusted $R^2 = .320$).

We used finance in a regression analysis to predict filed hockey facilities. Analysis revealed that prediction model was statistically significant, $F=43.437$, $p < .001$ and accounted for approximately 26 of the variance of sports facilities ($R^2 =.259$, Adjusted $R^2 = .253$). The analyses further indicated that the prediction model for coa-ching was also statistically significant, $F= 25.514$, $p< .001$ and accounted for approxima-tely 17% of the variance of coaching ($R^2 = .171$, Adjusted $R^2=.164$). Model summery, ANOVA table and Coefficient has shown in Figure 1.

Figure-1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.570[a]	.325	.320	.67287	1.519

a. Predictors: (Constant), Finance

b. Dependent Variable: Performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.043	1	27.043	59.730	.000[b]
	Residual	56.141	124	.453		
	Total	83.184	125			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.574	.211		7.458	.000
	Finance	.526	.068	.570	7.729	.000

DISCUTIONS, CONCLUSION AND RECOMMENDATIONS

The primary objective of this study was to understand the effect of financial incentives on sports performance of field hockey (men) teams at university level in Pakistan. Additionally, we were interested to know the correlation among financial incentives and facilities and coaching of field hockey. According to the opinion of the

varsity field hockey athletes following findings are presented.

Firstly, findings revealed a positive correlation between financial incentives and performance. Secondly, filed hockey facilities and coaching positively related to financial incentives. This means that availability of adequate financial resources is having a positive impact on the sports facilities, coaching, and sports performance. Conversely, lack of adequate financial resources is having a negative impact on the sports facilities, coaching, and sports performance.

These findings seem in line with the economic model of sports performance (Leeds & Leeds, 2012; Rathke & Woitek, 2008). According to this view, financial resources, economic conditions, or budget allocation for certain sports are the most important and powerful factor among determinants of sports performance (Buts, Du Bois, Heyndels, & Jegers, 2013). For example, studies indicated that sports performance is positvely associated with investment of financial resources (Ahmadi, Asari, & Jorly, 2015; Emrich, Klein, Pitsch, & Pierdzioch, 2012; Manuel Luiz & Fadal, 2011). In turn, lack of financial investment in certain sports may lead to detrimental effect on sports performance. In education setting, financial incentives in the form of scholarships, tuition wave, daily allowances, traveling cost, provision of good nutrition, and free board have greater significance for university hockey players.

These findings point to the fact that the fundamental cause of decline of field hockey at gross root level specifically at universities level is probably lack of financial resources allocated for the benefits of varsity athletes. This may further negatively influenced performance of student hockey athletes. These findings contradict with the reports that student athletes enjoying great financial benefits in the higher education institutions in developed countries (Corgan, 2012; Fram & Frampton, 2012). Those financial benefits includes exemption of tuition fee, provision living expenses, free board, free books, a

university degree, recognition of at national and international level as well as opportunities of prestigious professional career (Duderstadt, 2009). For example, in America, it has been indicated that varsity sports has become commercialized, entered into the shape of entertainment business, attained greater popularity, engagement of national media and quasi-professionalization that involves investment of huge budget for sports programs (Duderstadt, 2009; M. Mitten, Musselman, & Burton, 2009; M. J. Mitten, Musselman, & Burton, 2010; Zhu, Won, & Pastore, 2005). On the other hand, it is evident that varsity athletes in higher education institutions contribute greatly not only by creating rich environment in campus life of universities but also help to increase institutions pride, recognition, and goodwill as well as contributing promoting the good repute of universities. On the other hand, student athletes in higher education institutions confront with multidimensional challenges simultaneously endeavoring for their sports success along with achieving their academic goals (Carodine et al., 2001; Comeaux & Harrison, 2011; Hyatt, 2003; Parham, 1993). One possible cause of this phenomenon might be the that the primary focus of educational institutions / universities in under-developing counties is to attain educational goals whereas development of sports is on the least priority in many educational institutions in these countries (Andreff, 2001). In contrast, many universities in developed nations take the responsibility of development of sports along with gaining their academic mission (Duderstadt, 2009; Georgakis & Light, 2012).

Furthermore, findings revealed a significantly positive correlation between the investment of financial resources and facilities such as grassy fields, Astroturf, stadiums, and establishment of hockey clubs. Sports facilities are fundamental for the development and promotion of certain sport (De Bosscher, De Knop, van Bottenburg, Shibli, & Bingham, 2009). Previously, Dong, Yu, and Dong (2011) demonstrated that allocation and investment of finanical resources is essential element for the purpose of

sports development and maintenance of sports facilities and infrastructure. In addition, Fereidouni, Foroughi, Tajaddini, and Najdi (2015) showed that lower investment on sports facilities results in poor sport facilities. It is evident that presence of infrastructure requires heavy amount of budget allocations for the development of these facilities (Gallardo, Burillo, García-Tascón, & Salinero, 2009). Poorly managed infrastructure of field hockey has adverse effect on the participation of student athletes in universities sports (Hallmann, Wicker, Breuer, & Schönherr, 2012; Lim et al., 2011). In addition, well developed and well managed facilities of field hockey may further positively impact on the quality and quantity of training and participation (Curtis & Birch, 1987; Wicker, Breuer, & Pawlowski, 2009). These, in turn, might resulted in decreased performance of hockey players at intervarsity level that further contribute to decline the standards of field hockey at national level in Pakistan.

With regard to coaching, analysis showed that coaching positively related with finance. This implies that increasing the spending money on coaching in the form of increasing coaches' salaries, incentives, coaching facilities, coaching campuses, may results in enhancing the quality and quantity of coaching of student hockey athletes in universities. This increased quality and quantity of coaching of hockey athletes further lead to improved performance in intervarsity competitions. Similar to our finding, Freeman (2012) found that increasing financial spending on coaching expected to increase athletic success. In contrast, other studies found no positive relation between increased finance for coaching and improved performance (Orszag & Israel, 2009; Tsitsos & Nixon, 2012).

To date, the data about facilities, coaching, sports participation and performance of varsity field hockey student athletes is not available. As there is no publish work that present the number of hockey surfaces (aster turf or grass pitches), equipment, stadiums, number of total qualified coaches, sports hostels, share of allocated finan-

ce for field hockey in total sports budget, and number of total hockey teams of field hockey in universities of Pakistan. However, Pakistan considered an underdeveloped country that has very tiny budget for higher education institutions or universities. The share of education budget in total federal budget Pakistan 2015-16 is approximately 2.1%. Intuitively, it can be assumed that the portion of sports budget within the total university budget may be very low. The tiny sports budget in universities leave less space for financial resources for the development and organization of field hockey. Thus, it can be logically concluded that the less education budget in Pakistan likely to suggest few facilities, poor coaching and training, and less financial benefits for student field hockey athletes. Overall, the findings of present study seems congruent with a study conducted by Andreff (2001) demonstrating that lack of financial resources is the fundamental cause of decline of sports in developing or third world countries. The study further highlighted that these countries confronting shortage of sports facilities, infrastructure, poor coaching, and insufficient sports equipment due to lack of financial resources.

Based on the findings and discussions, following recommenddations put forward for the development and promotion of field hockey at grass root levels with special reference to Pakistani universities.

1. Outstanding varsity hockey athletes should be offered financial scholarships in the form of sports scholarships, daily allowances during training campuses and during competitions and tournaments.
2. Enough sports budget should be allocated by the universities. The sports managers and administrators in universities should invest increase financial investment on student hockey athletes and infrastructure development.
3. Hockey equipment and infrastructure such as hockey fields, sports hostels should be developed. In addition, these facilities should be in access of student hockey athletes for practice and training.

4. Artificial Astroturf should be develop and provided for the training and practice of student hockey athletes in universities.

Future studies are indeed needed that should focus on examining the link between the amount of financial resources inverted on university players on other sports (e.g. soccer, cricket, basketball etc.) and influence on performance using secondary data. It will be more interesting to explore the wide range of other detriments of sports performance (social, cultural, geographic) to determine the mechanisms behind current status of sports in higher education institutions of Pakistan. Another interesting venue of research is to assess the difference in the amount of financial resources for sports development that is being invested in the universities of less vs. high developed geographical regions with in the Pakistan. This kind of research may further help to shed light on the discrimination regarding allocation of finance in different universities located in different geographical regions.

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