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Impact Of External Rewards On Intrinsic Motivation Of Elite And Non-Elite Women Cricketers Of Pakistan

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Abstract

The goal of the current study was to determine how external rewards influence Pakistani elite and non-elite women cricketers' intrinsic motivation. This research is a quantitative study located in Pakistan. The sample of the study was elite and non-elite women cricketers of Pakistan. The data was collected using a purposive sampling technique while the number of participants was 200 women cricketers. The analytical tool used for data analysis was SPSS Version 23.0. The Sports Motivation Scale (Palletier et al., 1995) and Effort & Reward Scale (IK-Park, 2021) were used in the study. The results reported that external rewards have a positive impact on the intrinsic motivation of elite (R^2= $0.408, p= 0.000^c$) while no impact of external rewards was found on intrinsic motivation of non-elite (R^2= 0.003 ,$p = 0.604^c$) respondents. Motivation is a key factor in sports participation and the development of an athlete's peak performance. External rewards help to improve intrinsic motivation. The findings of this study suggest that women's cricket organizations concentrate on boosting sports motivation by considering the psychological requirements of athletes, such as recognition, rewards, security, and support. The results obtained from this study will be very effective for organizers as well as women cricketers as it can offer them an inside view and enriched knowledge on how reward works to improve intrinsic motivation, which in turn can influence their approach to training in particular ways that can keep them successful.

Keywords: External rewards**,** Intrinsic motivation, elite, non-elite, women, cricket

Introduction

When considering both an individual's traits and the circumstances in which an action takes place, motivation can only be fully studied as a joint function of environmental elements and internal psychological processes (Kanfer et al., 2012; Kozlowski, 2012). Different approaches have been used to address intrinsic motivation, but the current study will concentrate on how external rewards affect the intrinsic motivation of elite and non-elite women cricketers. There has been extensive research done to determine the impact of external rewards on motivation, ranging from those who claim that reinforcement can undermine motivation and reduce students' intrinsic interest to those who claim that external rewards have no negative impact on athletes' interest and motivation. According to self-determination theory (Ryan & Deci, 2000), distinct motivational styles can be distinguished based on the motives or objectives that underlie any given activity. When someone is motivated by intrinsic factors, they act because they are genuinely interested in the experience. Activities that are intrinsically motivated are enjoyable, have a purpose, and are pursued for those reasons alone rather than as a separate thing of worth (Cerasoli et al., 2014; Deci & Ryan, 1985; Milkovich and Newman, 2017; Pink, 2011;).

Extrinsic motivation, on the other hand, refers to doing something for reasons that are not internal, such as achieving distinct desired objectives or averting undesirable results (Ryan & Deci, 2000). Reward systems are one of the main types of extrinsic motivators. Because they are common in daily life and because they can influence someone's motivation and performance in one of two ways—either positively because they are directly related to performance or negatively because of their undermining and behavior-controlled impact—many researchers are interested in external rewards that are linked to performance (Deci & Ryan, 2000). Research on the influence of external rewards on motivation has been carried out in social psychology, management psychology, and in other fields. In recent years, psychologists have recognized the importance of rewards for supporting individuals (H Nordahi Pedersen, 2022; 2017 Hendijani, Bischak, Arvai, & Dugar, 2016; Jacobsen & Anderson, 2017).

The reward literature is mostly composed of two primary, conflicting streams of research. The first stream, led by psychologists who study self-determination, focuses on the decreasing effect, which claims that receiving external rewards can cause internal drive to decrease (Deci, 1971; Deci & Koestner, 1999; Maimaran & Fishbach, 2014). This stream of experiments investigated whether receiving external rewards, particularly those depending on performance, could have a demotivating effect (Deci & Ryan, 1980; GR Salancik, 1975; Pinder, 1998). Many scholars viewed this adversely for motivation toward a task and hence performance, whether implicitly or openly (Gneezy & Rustichini, 2000). In fact, only a small amount of psychological research has examined the direct link between performance-contingent reward and motivation in settings such as sports and exercise, largely because cognitive evaluation theory (CET) and other limiting theories have taken a dominant position in the psychology literature (Kozlowski, 2012; Rynes, Gerhart, & Parks, 2005). Numerous authors understood this to be damaging to motivation for a task and, as a result, performance, either implicitly or explicitly (Gneezy & Rustichini, 2000). In reality, very little psychology research has looked at the direct relationship between motivation and performance-based rewards in contexts like sports and exercise. This is partly due to the psychology literature being heavily influenced by the crippling theories cognitive evaluation theory (CET) and others (Kozlowski, 2012; Rynes, Gerhart, & Parks, 2005). Receiving external rewards typically causes people to perceive the locus of causality as external, leading them to believe that external forces are in control of their behavior and stripping them of any sense of agency or choice in finishing the task, according to CET (Deci, 1972a, 1972b, 1971; Hagger & Chatzisarantis, 2011). According to CET, performance-based financial incentives may reduce intrinsic motivation by focusing on the external reward's motivating driver. The knowledge one may contribute can also serve as support for one's level of competence, and the competence-affirming nature of these rewards can at least partially counteract their detrimental impacts on intrinsic motivation.

The second stream refers to the augmenting effect, which assumes that external rewards increase intrinsic motivation (Goswami & Urminsky, 2017; Liu et al., 2022). Numerous experimental studies, including more recent ones by Woolley & Fishbach (2018), which found that immediate rewards encouraged intrinsic motivation and excitement for participation in activities more than delayed rewards, corroborate this viewpoint. These results laid a solid foundation for the second stream, which contends that rewards increase intrinsic drive. Related research has demonstrated that participants' perceptions of their intrinsic motivation will be considerably influenced when a task include enjoyable contextual elements (Liu et al., 2022). The primary objective of the second stream of experimental research, which is consistent with

behavioral and economic theories, has been to determine how external rewards impact performance (Scott, 1976; Skinner, 1953). Contrary to studies in the second stream, which emphasize the impact of external reward on performance and argue that this impact is brought on by internal motivation, studies in the first stream primarily focus on the impact of external reward on intrinsic motivation, with an implicit relationship to performance. The failure to effectively assess the independent effects of intrinsic motivation and performance-based rewards on overall motivation and performance is one weakness of prior research in both streams.

The current study looked into the two different playing classes of respondents (elite & non-elite) and their motivation in terms of sports participation. The results of the present research would be beneficial as a contribution to the knowledge and literature available on this topic. Cricket stakeholders in Pakistan will also be able to utilize the outcomes of the study to enhance their knowledge and product offering to current and potential players. Consequently, the information gathered will help the coaches, athletic administrators, and cricket committees to implement strategies that will ensure successful performance.

Objective of the study

1. To identify the impact of external rewards on the intrinsic motivation of elite and non-elite women cricketers of Pakistan.

Methodology

The study adopted a descriptive survey design. Participants included 200 women cricketers who participated in the study by purposive sampling method. The participants comprised of elite (n=100) and non-elite (n=100) women cricketers of the country having minimum one year of playing experience. The age range of respondents was between 16 to 33 years. The variables of this study are listed together with the measurement tools used.

Intrinsic Motivation: It was assessed using the Sports Motivation Scale (Pelletier et al., 1995). The scale was initially created in French; later, Palletier et al. (1995) translated it into English, producing psychometric qualities that were comparable to those of the original scale. In order to answer the question "Why do you play your sport?" a 28-item scale with 7-point subscales measuring motivation is used. The scale ranges from 1 (does not correspond at all) to 7 (corresponds exactly). Four items evaluated amotivation, twelve items evaluated extrinsic motivation, and twelve items evaluated intrinsic motivation. For elite and non-elite responders, the Cronbach's alpha reliability was 0.973 and 0.976, respectively.

External rewards: The study used the Effort & Reward Scale (IK-Park, 2021). The measure consists of 14 items, each of which is scored on a 5-point Likert scale and is broken down into three elements. Future stability, social support, and good progress make up the three components. The ratings for each item ranged from 1 (Strongly disagree) to 5 (Strongly agree). The scale's Cronbach's alpha reliability was 0.774 for elite participants and 0.813 for non-elite participants.

Data Analysis

To collect data, a document was created to link two questionnaires. All the participants were informed about the research procedure, purpose of investigation, and given their written consent before participation. The demographics include playing level, age, playing role, and playing experience. The researcher used face to face technique to collect data prior to the competition. A descriptive analysis was carried out of all measured variables. Cronbach’s alpha reliability of instruments was tested. Normality was also tested by performing the Shapiro-Wilk test. To check the impact of one variable on the other, regression analysis was used. Significance was accepted at $p < 0.05$.

Results

The study findings are presented in this section

Descriptive statistics for Demographics

SPSS software 23.0 was used for statistical analysis. This section demonstrates the descriptive statistics of demographic characteristics of both elite and non-elite respondents of the study. Playing level, age, playing role, and playing experience of the participants were analyzed. The figure 1 shows that out of total (n = 200) respondents of the study, one hundred (50%) were elite while one hundred (50%) were non-elite women cricketers. Figure 2 of elite respondents shows that a maximum number of participants (51%) was in age group 21 to 25 years followed by age group of 26 to 30 years (31%). On the other hand, maximum number of non-elite participants (54%) was in age group 16 to 20 years followed by age group of 21 to 25 years (34%). Playing role of respondents were categorized as batter, bowler, all-rounder, and wicket keeper (Figure 3). It explains that most of the elite participants (71%) were all-rounders followed by batters (18%). Pie chart of non-elite explains that most of the participants (58%) were batters. The Playing experience of the respondents was categorized in two groups; less than five years and more than five years. The pie chart of elite respondents (figure 4) shows that more than half (69%) have more than five years playing experience while 31% of respondents have less than five years' of playing experience. The pie chart of non-elite respondents indicates that more than half (87%) of participants had less than five years of playing experience.

Figure 1: Playing level of respondents (Elite and non-elite)

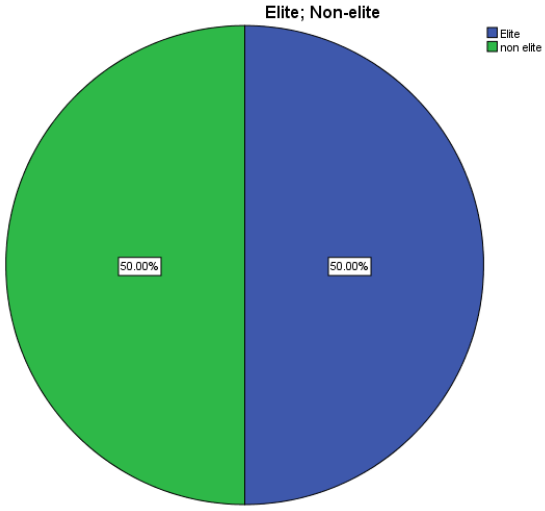
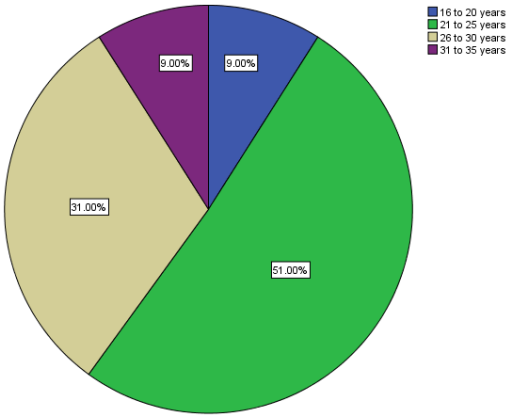
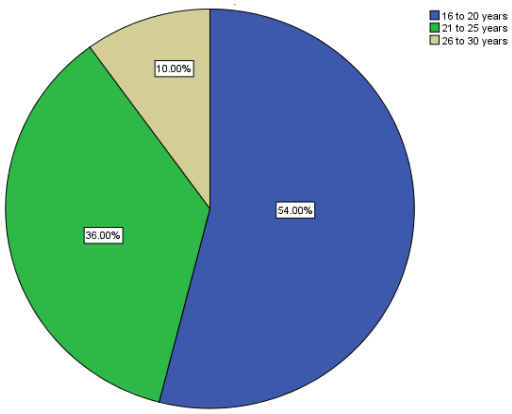


Figure 2: Age of elite and non-elite respondents

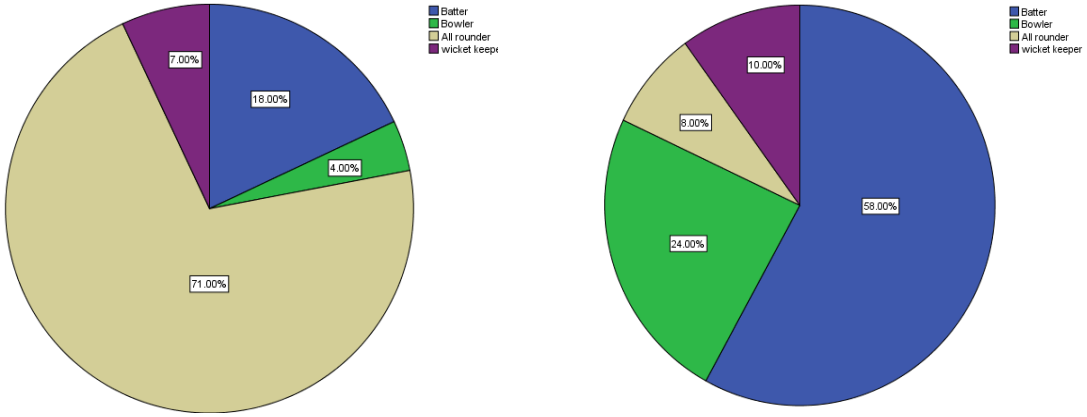


(a) Elite respondents



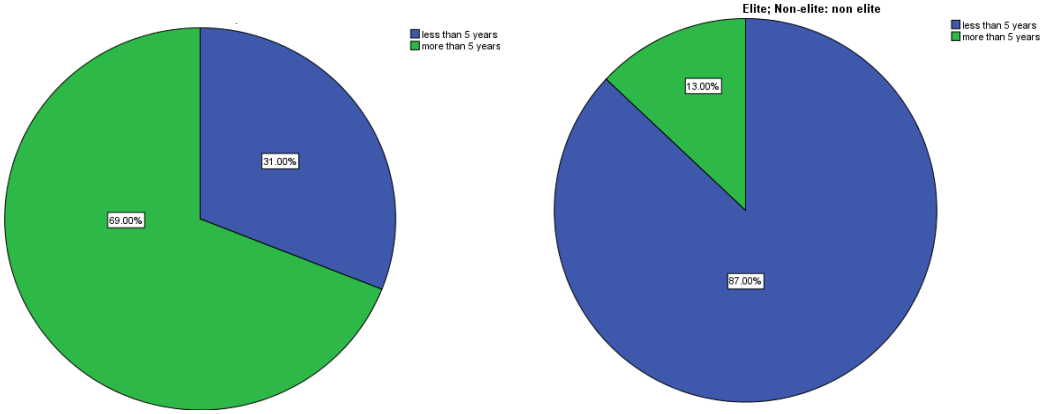
(b) Non-elite respondents

Figure 3: Playing role of elite and non-elite respondents



(a) Elite respondents (b) Non-elite respondents

Figure 4: Playing experience of elite and non-elite respondents



(a) Elite respondents (b) Non-elite respondents

Descriptive Statistics

The total number of participants in the study was 200 women cricketers of Pakistan. Table 1 presents the Cronbach's alpha reliability of study instruments while table 2 and 3 explains the data normality and descriptive of study variables respectively. The study variables for elite and non-elite were found highly reliable and data was also distributed normally ($p = >$ 0.05). Table 3 illustrates the overall descriptive of study variables. Intrinsic motivation scale showed that non-elite had highest mean value as compared to elite women cricketers (Non-elite: 4.237 ± 1.082, Elite:3.931 ± 1.067. Reward Scale consists of 14 items which had high mean value among non-elite (3.332 ± 1.800) as compared to elite (3.254 ± 1.685) respondents.

Table 1: Cronbach's Alpha Reliability of Instruments

		Elite	Non-elite
Scales	**No. of items**	**p – value**	**p – value**
Intrinsic Motivation	12	0.927	0.932

Effort & Reward Scale	14	0.774	0.813

Table 2: Shapiro-Wilk Test of Normality of Scales

Scales	Elite			Non-elite		
	Statistics	**df**	**p – value**	**Statistics**	**df**	**p – value**
Intrinsic Motivation	0.987	100	0.443	0.977	100	0.078
Effort & Reward Scale	0.988	100	0.493	0.986	100	0.362

df= Degree of Freedom

Table 3: Descriptive Statistics of Study Instruments

Variables	No. of Items	Elite		Non-elite	
		M	**SD**	**M**	**SD**
Intrinsic Motivation to	12	3.931	1.067	4.237	1.082
• Know	4	3.917	1.489	4.152	1.316
• Accomplish	4	4.110	0.752	4.180	0.846
• Experience stimulation	4	3.775	1.193	4.362	1.094
Effort & Reward Scale	14	3.254	1.800	3.332	0.637

** Correlation is significant at the 0.01 level (2-tailed). M= Mean, SD= Standard deviation

To examine whether the external rewards have impact on intrinsic motivation of elite and non-elite women cricketers of Pakistan, linear regression analysis was performed. Table 4 shows that external rewards have a significant impact on intrinsic motivation of elite respondents. The results found support for the hypothesis ($R^2 = 0.401, P = < 0.001$) for elite respondents only. On the other hand, The impact of external rewards on extrinsic motivation of elite respondents was also found significant($R^2 = 0.382, P = < 0.001$). On the other hand, external rewards had no impact on intrinsic ($R^2 = 0.003 , p = 0.604^c$) motivation of non-elite respondents.

Table 4: Regression Analysis

Model	R	R2	Adjusted R2	Std. error of the estimate	Durbin-Watson
Elite	0.638^b	0.408	0.401	.82585	1.520
Non-elite	0.053^b	0.003	-0.007	1.08649	1.618

a. Predictors: (Constant), External Rewards

b. Dependent Variable: Intrinsic Motivation

The regression input shows the value of R and R^2 for the model which has been derived. The value of R is 0.638^b and R^2 0.408 which shows 40% of variation in intrinsic motivation of elite respondents is influenced by external rewards. On the other hand, no impact of external reward on intrinsic motivation ($R^2 = 0.003$) reported in non-elite women cricketers.

Table 5: Analysis of Variance Elite and Non-elite Respondents

Model		Sum of squares	df	Mean square	F	p – value
Elite	Regression	45.972	1	45.972	67.405	$<0.001^c$

	Residual	66.839	98	.682		
	Total	112.811	99			
Non-elite	Regression	0.320	1	.320	0.271	0.604[c]
	Residual	115.685	98	1.180		
	Total	116.005	99			

a. Dependent Variable: Intrinsic Motivation
b. Predictors: (Constant), Sports Performance

The ANOVA table of the output (SPSS 23) represents the report of analysis of variance. As per these data, F-ratio is significant at p > 0.001 (elite=67.405; Non-elite= 0.271). The model of elite respondents is significant because $p-$ value is $< 0.001^c$ and not significant among non-elite as $p-$ value is 0.604^c. The results show that external rewards have a positive impact on intrinsic motivation of elite women cricketers while no significant impact of external rewards on intrinsic motivation of non-elite respondents was reported.

Table 6: Regression Coefficient of Elite and Non-elite Respondents

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**P − value**
Elite	(Constant)	0.295	0.451		.654	.514
	External Rewards	1.118	0.136	0.638	8.210	<.001
Non-elite	(Constant)	3.940	0.581		6.781	<.001
	Intrinsic motivation	0.089	0.171	0.053	0.521	0.604

a. Dependent Variable: Intrinsic Motivation

The data for elite ($\beta = 0.295: p < 0.001$) shows that external rewards have a significant impact on intrinsic motivation whole no significant impact of external rewards on the intrinsic motivation was found among non-elite respondents ($\beta = 3.940: p > 0.001$).

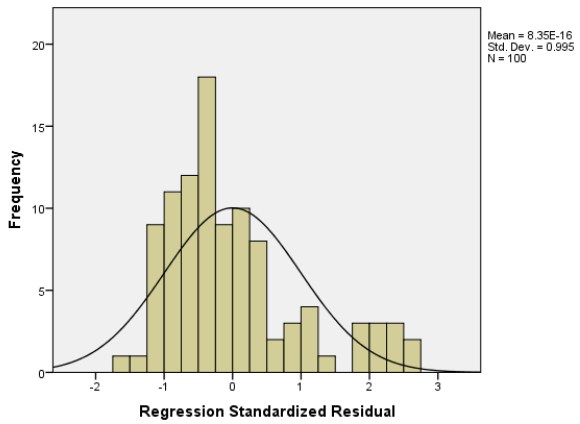
Elite

Intrinsic Motivation $= b_o + b_1$External Rewards
$= 0.295 + (1.118 \times$ External Rewards$)$

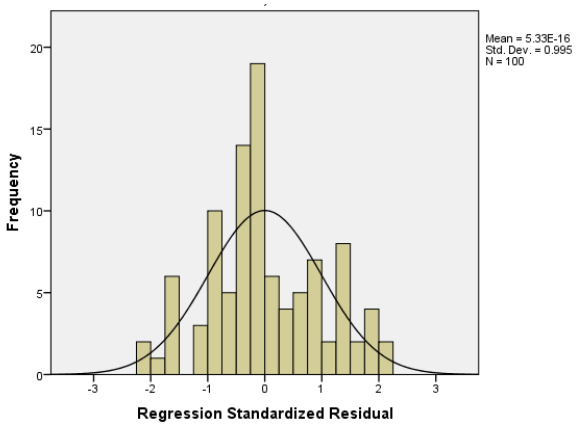
Non-elite

Intrinsic Motivation $= b_o + b_1$External Rewards
$= 3.940 + (0.089 \times$ External Rewards$)$

Figure 5: Histogram and Normal Probability Plot of the Data of Elite and Non-elite Respondents



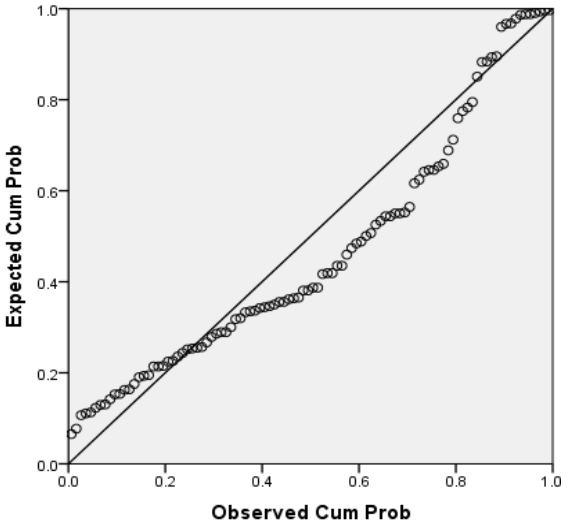
(a) Elite respondents



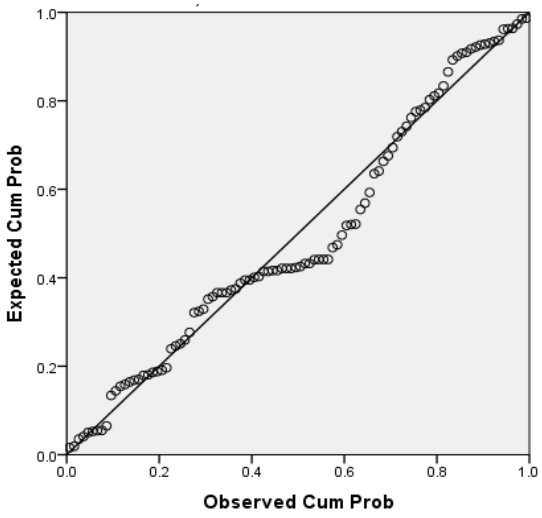
(b) Non-elite respondents

The histogram should look like a skewed distribution. SPSS draws a curve on the histogram to show the shape of the distribution. The histogram for elite shows the dependent variable mean of intrinsic motivation is $8.35E^{-16}$, Standard Deviation 0.995, and $n = 100$. The histogram for non-elite illustrates the mean of intrinsic motivation $5.33E^{-16}$, Standard deviation 0.995, and $n = 100$.

Figure 6: P- Plots of Standardized Residuals against Standardized Predicted Values



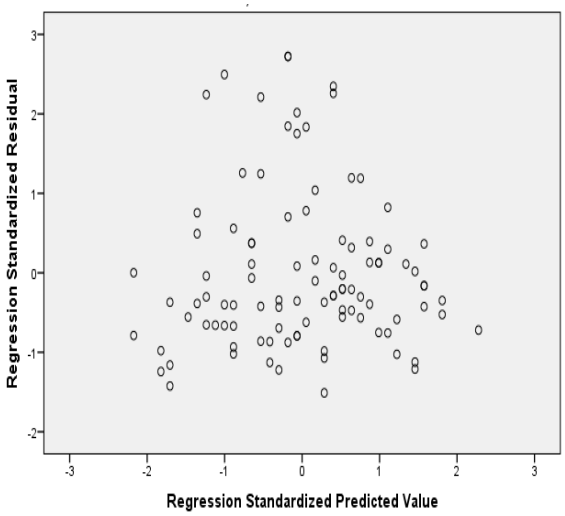
(a) Elite respondents



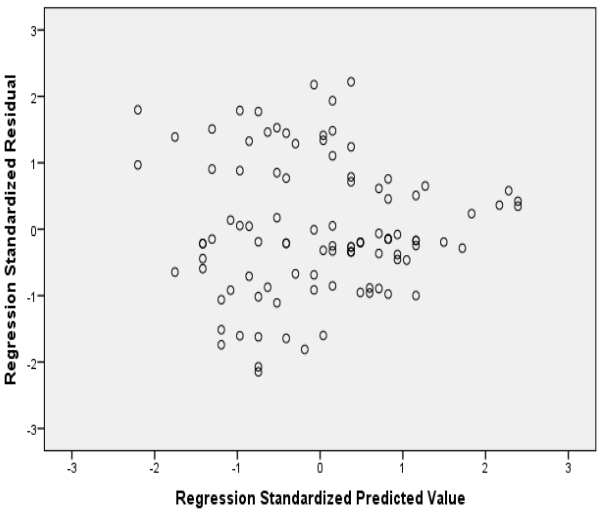
(b) Non-elite respondents

The straight line in the plots indicates a normal distribution of data, and the points in this plot reflect the observed residuals. As a result of the skewed distributed data set, all points fall close to the line.

Figure 7: Plots of Standardized Residuals against Standardized Predicted Values



(a) Elite respondents



(b) Non-elite respondents

While checking for homoscedasticity, it is expected not seeing an apparent pattern in scatter plot. The Figure shows the graph for the data in our mean intrinsic motivation. This pattern is indicative of a situation in which the suppositions of linearity and homoscedasticity have been met.

Discussion

The purpose of this study was to analyze the impact of external rewards on intrinsic motivation of elite and non-elite women cricketers of Pakistan. The study produced several important findings including descriptive results of motivation and external rewards variables as well as the impact of rewards on intrinsic motivation. Before data analysis, the reliability and validity of the research data was tested. The Shapiro-Wilk test was used to check the data normality and the results indicated normal data distribution. The validity of Sports Motivation Scale and external reward scale was excellent. In the current study, all the participants were currently playing cricket matches and practicing several times weekly at the time of data collection. The study was carried out to determine the impact of external rewards on the intrinsic motivation of elite and non-elite women cricketers of Pakistan. The demographic characteristics include age, playing role, and playing experience of the respondents. The mean age of the elite was 24 years while non-elite had a mean age of 20 years. The mean of playing experience for elite was 5 years while non-elite had a mean experience of 1.5 years for playing cricket. It was hypothesized that external rewards help to improve intrinsic motivation of elite and non-elite women cricketers of Pakistan. To test the hypothesis, linear regression test was performed and the findings revealed a significant impact among elite respondents while no impact was reported among non-elite respondents. The findings are in line with earlier research showing that participants' perceptions of intrinsic motivation are greatly increased when an activity involves pleasant incentives (Goswami & Urminsky, 2017; Woolley & Fishbach, 2018), and they exhibit more self-determined behavior (Leander et al., 2017; SL Malek, 2020). One of the subjects that sport psychology academics are interested in is why people choose to play certain sports (Moradi et al., 2020).

Managers and organizations all around the world are always concerned about motivation. Despite the useful findings, there were some restrictions on the study. The information was gathered from a small playing class/level, was only applicable to one sport, and only one gender was considered. Instead of giving out prizes in this study, which might not have covered athletes' external motivation, a reward scale was used. It is advised that future research take these restrictions into account.

Conclusion

Overall, the study's findings confirmed earlier conclusions and helped us grasp more clearly how external rewards affect intrinsic drive. For the purpose of maximizing sports participation at both the top and non-elite levels, it is advised that coaches and sports management take these elements into consideration. Additionally, it is advised that research be done to examine the elements influencing athletes' motivation to participate in sports in addition to cricket.

Recommendations

The results of this study provide recommendations that women cricket organizations should focus on increasing sports motivation by considering the psychological needs of athletes such as appreciation, incentives, security, and support. The Researchers and sports managers can use the study's findings to explore more intrinsic and extrinsic motivation. Furthermore, team managers and program directors would be able to understand when and how to use various forms of incentive to satisfy the psychological demands of the athletes. The results obtained from this study will also be very effective for women cricketers as it can offer them an inside view and enriched knowledge on how their motivation works when participating in sports, which in turn can influence their approach to training in particular ways that can keep them motivated. Finally, it will surely help to form a grip on not only the organizational behavior but also athletes' psychology.

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