ABSTRACT

The study intended to explore the relationship of age and performance of test batsmen to know at what age they achieved the peak performance while playing test cricket. Qualitative data was collected through interviews and secondary data sources were used of different ICC (International Cricket Council) websites and magazines. Sample comprised of top 12 test players of Pakistan from past and present era, who played for Pakistan with distinction. Time series and regression analysis was executed to find the significance of the relationship between their age and performance (Batting average). The findings of the study revealed a parabolic trajectory relationship between age and their performance, positive relationship at the start and then a plateau and then a negative relationship between age and performance. The rise and decline pattern varied and majority of the cricket players touched the peak between the ages of 28 to 34 years. The current study will provide solid grounds to account the role of age in producing expert performance and strongly suggested through the evidence of data analysis that to achieve the expert performance of the enrolled test batsmen, patience is required until and unless the cricket players meet a specific age limit.

Key Words: Cricket, Test Batsmen, Peak Performance, Age

INTRODUCTION

On a bright sunny morning of 1997-98 winters, stage was set to topple the mighty South Africans at eastern shores. South Africans were under tremendous pressure and a target of 146 was given to Pakistan to win the 3rd test match and also the series by 1-0 at Faisalabad. Ali and Aamer started the innings with confidence and things were under control and triumph was certain. At the score of 23, Aamer nicked one to the Bacher in the slips and in adding four runs Pakistan top four batsman were gone to the pavilion. After that no batsman appeared to show any guts to tackle the mighty Africans ferocious bowling attack and bowled out at 92 in just 37.3 overs and lost the test series 1-0 to South Africa. Chughtai (2001) stated that Pakistan had repeated this unpredictability on number of
times on scrutinized it was found that fourteen of Pakistan’s sixth seven defeats were due to their batsmen inability to reach the target score. Successful chase depends on high degree of strategic planning in terms of solid start form the opening batsmen, maintaining the required run rate and sustained aggression (Qazi, 2015) Mohammad Hafeez Former Test captain admitted after the defeat in the ICC world T20 final the team’s major concern is chasing abilities and this can be overcome through shear hard work and perseverance (Gulf news. com). Ramiz Raja former executive PCB said “ Batting has been team Achilles heel, the situation is not going to change unless Pakistan introduce drastic changes in batting structure, team simply lacked skills which is why “we have been flogging dead horse ”. “Batting line should have revamp as it has been failing to perform in the world event where it is supposed to perform full. As far as bowling is concerned “we always find good bowlers” (Nafis, 2013). Pakistan’s current Test captain Misbah-Ul-Haq said “the consistent batting failures are worrying” (AFP, 2012). “Team is now left to wince at the sight of our batsmen struggling to barely clear the infield. Time and again, their technical deficiencies and mental frailties are exposed, their poor show punished by dropping them from the side, only for the same batsmen to return after a brief hiatus, but with little sign of improvement in their game”. Pakistan’s batting is going through a deep crisis but there seems to be no answer to this predicament. Perhaps, it is time to give hitherto untested players a chance instead of repeatedly relying on the same set of players” (The Express Tribune, 2013).

Over the years Pakistan bowling has been the main contributor in test victories. Record showed Pakistan’s win/lose ratio in tests dropped down to 1.117 from 2.532 in recent years which is quite ordinary as compare to other top teams. World’s cricket data base revealed that seventy out of one hundred and twenty six triumph were attained by bowling potential and rest of fifty five by batting potential. (Cricketinfo.com, 2015). There are number of question raised from these stats first is the team not getting appropriate and right batting
talent which can absorb the pressure of test cricket? Second, are the batsmen getting picked for the national side not mature enough to cater the demand of test cricket? Are there administrative, managerial, environmental and cultural issues that are not conducive for the development of expertise in batsmen? Past Literature showed athlete’s career follows a parabolic trajectory: there is elevation as the body matures and skills are hone, than a plateau and then decline phase starts as the ability fades. These ups and downs depend on the physiological and psychological attributes of performance. The rise-peak-decline pattern varies in sports. Numerous studies on baseball pegged peak age between 27 -29, Tennis an explosive sports pegged peak age between 20-25 years. Basketball pegged peak age 27 on all position, Track and field’s events peaking age between twenty to twenty five and endurance events peak after mid-twenties, Golfer have higher peak age between 25 to 35 and slower decline, Football running backs and receivers peak around 27, with running backs showing sharpen fall off than receivers, quarter backs have broader peak between 25 -35 (Schultz & Curnow, 1988). In majority of the sports the peak attained between the age of 22 to 30. The age at which performance tends to peak across sports seems to depend on the physiological and psychological demands of the sports, explosive sports peaking earlier as compared to cognitive skill based sport. There are also some sports which depends on the combination of explosive physical and cognitive abilities (Peterson, 2015). Chopra (2009) argued that successful exhibition of cricket skills such as batting, bowling and fielding depends on the highly competent psychological skills. “Psychological state of a cricket players could change in a short spell of play from being highly confident to a state of utter diffidence. This distinguishes skilled players from the less skilled, not so much due to raw talent but, relatively, to work ethic, and a focused state of mind”. “Cricket successful bowlers and batsmen are the ones who can apply the correct type of attentional focus to the task at hand allowing them to harmonies the emotional, physical and mental strands of the situation”.
Owens (2008) argued that “It is the cricket player’s ability to concentrate on task-relevant cues and adapt attentional focus to the ever-changing game context and to continuously employ effective personal coping resources”. This study was aimed to investigate the relationship of age and performance of the successful test batsmen of present and past eras. Age was measured in years as batsmen ageing through playing test cricket and on the other hand performance was measured in terms of batting average / year. The study intended to find out the peak performance age of test batsmen. Study found that Pakistan’s greats of games touched the pinnacle of their batting performance at a different ages, depend on their natural physiological and cognitive maturation age while competing at test level. The findings of the study will be beneficial for players, players support personnel’s, Selectors and cricket board’s management and administration in number of ways. First, to understand how the growing age contributes towards peak performance second, what is the peak performance age.

Peak performance age will provide the solid base to account the role of ageing process in producing the expert performance and will also help to broaden the life span of test batsmen by stoppage in ruining prematurely in early phase of their careers due to ordinary performance. Understanding of Peak performance age could provide information about long term athlete development program, Event selection, decision regarding resource allocation and team building for future events. (Allen et al., 2015).

Materials and Methods
The study adopted qualitative and quantitative approach to collect the data from secondary sources including websites, newspapers and journals. Retrospectives study design was executed to scrutinize the batting performances (Averages) of Test batsmen. Lewis (2005) argued that “The effects of outstanding or poor, single performances are smoothed over the larger number of games”. Averages are suitable frame work to analyze the performance trends because it reflects the individual performances across a series of matches (Bracewell et al., 2009).
Theoretical framework developed for this study comprises age as independent variable and performance (Average) as a dependent variable. Time series and regression analyses were conducted to see the performance trends of top twelve successful test batsmen who played for Pakistan with distinctions. There are other variables that can affect the relationship of age and performance such as batting order, location of the innings, quality of opposition and consistent participation but due to limitations these variables were kept constant because average/year reflect overall performance trend of cricket players.

Data Analysis

Mohsin Khan had played as opening batsmen in Pakistan cricket team and played 48 test matches and scored 2709 with the average of 37.10 in his test career (Cricinfo.com, 2015). He made his test debut at a mature age of 23 years and played 8 years of test cricket and considered to be the stylish opening batsmen. After 2 years of test cricket he sat on to gain the peak and at the age of 27 he scored 1029 runs at the average of 73.50 (See figure 1). His regression analysis (R2 0.6) value is very high which strongly represents that the age had brought 60% variation in his performance and he retired at the right time because his performance was at the lowest of his overall all test career (see figure 2).
Inzimam Ul Haq was one of the greats who played for Pakistan from 1992 to 2007. He started his career as top order and then shifted to middle order after early setbacks. He played 120 test matches and scored 8830 runs with average of 49.60 (Cricinfo.com, 2015). He started his test career at the age of 21 and experienced early setbacks and then started settling down after couple years’ experience. He gain his peak at the age of 29 where he scored highest number of runs 1090 with the average of 60.55 (see figure 3). His regression analysis showed (R2 0.40), which tells that the age brought 40% variation in his performance (See figure 4). He retired at the right time because his average was at the lowest (30 average) of his career.
Javed Minadad is considered to be the greatest batsmen Pakistan ever produced. He played in 124 tests and scored 8832 with the average of 52.57 (Cricinfo.com, 2015). He started his career at the age of 19 years with successful start and average 95 in his first year after that he gone through a lean patch and then at the age of 32 he regain his peak and averaged 95 (see figure 5). Regression analysis showed (R2 0.23) tells that age brought 23% variation in his performance (see figure 6). He should have retired at the age of 33 because his performance was on the lowest but he continued on playing 3 more years with the average of 31, 23, 42, and 31 till 36th years of his career (see figure 5 & 6).

Younus Khan is one of Pakistan’s modern greats. He played 118 tests and scored 10099 runs at the average of 52.05 (Cricinfo.com, 2015). He started his career at the age of 21 with a hundred on the debut test. He had set back in his early days and dropped from the side number of times. Time series analysis demonstrated that he gradually building up his performance with the age and at the age of 28 & 29 he touched his peak by scoring 899 and 1179 runs with the average of 65 and 64 (see figure 7). His regression analysis showed the after the year of 29 his performance declined up to 35 years
but he fought hard and able to get on incline in his batting average. R2 value (0.51) indicated that the age brought 51% variation in his batting average (see figure 8).

Figure-9: Mohammad Yousaf career progression

Graphs showed that he had a stable and consistent start by averaging 41, 30, 49 and 72 (See figure 8 &9) but he gained the peak at the age of 31 and 32 where he managed to produce the world record by equalizing the record of Sir Vivain Alexander Richards (West Indies) (Most runs in a year) By averaging 100 runs / Innings. His regression trends (R2 value 0.52) showed that age brought 52% variation in his performance.

Figure-10: Mohammad Yousaf Binominal Trendline

Mohammad Yousaf one of Pakistan’s great middle order batsmen. He played 90 test matches in his career and scored 7530 runs at the average of 52.29 (Cricinfo.com, 2015). He started his career at the age of 24 years which is quite late as compared to other greats of the game. On the basis of these stats we can say that Yousaf had started his test career at a mature age (24 years).
Hanif Mohammad was known as “little Master” He started his test career at the age of 17 years. He played 55 test and scored 3915 runs at the average of 43.98 in 55 test matches (Cricinfo.com, 2015). Time series analysis showed that he achieved the peak at the age of 23 after spending 6 years at test level. He remained consistent after the age 23 till the age of 31 where he hit the bottom and ended up at 34 years (see figure 11). His regression analysis R2 value (0.51) showed that the age had brought 51% variation in his performance (see figure 12).

Majid Khan was known as a graceful driver and hooker of the ball. He played in 63 tests and scored 3931 runs at the average of 38.92 (Cricinfo.com, 2015). He started his career at the age of 19 years. He had an ordinary start of his test career with a high degree of fluctuation till the age of 26 years where he started building peaks but the highest
peak he touched in the year of 31 and 32 years where he scored 715 at the average of 55 (See figure 11). His decline started after 33 years where his performance gradually starting moving downwards and touched the bottom at the year 38. These figures also indicated that he retired at the right time. His regression analysis showed R2 value (0.51) which indicated that age brought 51% variation in his performance (see figure 12).

Figure-15: Mudassar Nazir Batting Progression

Figure-16: Mudassar Nazar Binomial Trend line

Mudassar Nazar started his test career at the age of 21. He scored 4114 runs at the average of 38 in 76 test matches (Cricinfo.com, 2015). He started his career in an ordinary fashion with couple of good performances at the age of 23 and 24. He was lucky enough to get consistent runs of opportunities from the start of his career but after spending 7 years he managed to achieve the peak performance at the age of 28 years where he scored 858 runs at the average of 66 (See figure 15). His decline started after the age of 28 and then gradually came down and ended up at the age of 34. (R2 0.77) showed that age had brought 77% variation in his performance (see figure 16).
Saeed Anwar was known as the greatest timer of the ball. He also stated his career at the age 23 years similarly as Mohammad Yousef. He played 55 tests for Pakistan and scored 4052 runs at the average of 45.52 (Cricinfo.com, 2015). Time series analysis showed that he had a very ordinary start of his test career and was dropped from the test squad after scoring two zeros in his first outing at test match level. After 3 years of break he regain his spot at the test level with a bang and averaged 60 runs /innings in the 8 test matches. He got his peak at the age of 29 where he averaged 64 runs /innings (see figure 13). Regression analysis ( R2 0.54) also verified that age had brought 54 % variation in his performance which is significant as compare to other (see figure 14).

Saleem Malik started his test career at early age of 20 years. He played 103 test and scored 5768 with average of 43.69 (Cricinfo.com, 2015). Time series analysis showed that he had a stable and consistent start of his test career,
starting from averaging 30, 35, 62, 24 and 45 in his first 5 years. He got the peak after spending 9 years at test level at the age of 29 (See figure 15) which is quite late as compared to other middle order batsmen. His regression trends (R2 0.29) showed that age brought 29% Variation in his performance which quite moderate (See figure 16).

Figure-21:
Ijaz Ahmad Batting Progression

\[ y = 0.0071x^2 - 0.9337x^3 + 48.599x^4 - 1250.2x^5 + 15897x - 79908 \]
\[ R^2 = 0.8333 \]

Figure-22:
Ijaz Ahmad Binomial Trend Line
Ijaz Ahmad started his career at the age of 19 years. He played in 60 tests and scored 3315 runs at 37.67 (Avg) (Cricinfo.com, 2015). He was one those batsmen who made multiple comebacks in the test team stating from 1987. His early career progression line showed an ordinary starts of his test career started form 19 years to 23 years and then he came back in the side after couple of years break at the age of 25 and then he gained the peak of his performance at the age of 27 till 31 years (See figure 17), where he averaged 45 and then the slump started at the age of 32 and then dropped from the team at the age of 34. His regression analysis showed R2 value (0.83) which indicated that age had brought 83% variation in his performance (See figure 17). He retired at the right time be-cause the binomial trend line showed vertical dip in his career at the age of 32.
Zaheer Abbas is also known as Asian Bradman. He started his career at the age of 22 years. He played in 78 test and scored 5062 runs at the average of 44.79 (Cricinfo.com, 2015). His career progression showed frequent high and lows in his career till the age 30 where he started to gain the peak for 2 years (See figure 19) at the age of 31 and 32 and then the slumped started with 4 good years and a dip at the age of 38. His regression analysis R2 value (0.28) showed that the age had brought just 38% variation in his performance and he retired at the right time because age of 38 his performance was a rock bottom.

Results

The Time Series analysis showed that among Pakistani test batsmen the age matters a lot for boosting their performance. Figures (1 to 23) showed that age contributed immensely towards performance of test batsmen. Majority of test batsmen peaked between the age of 28 and 32 years and after that they went into decline phase. Figs (2, 3, 7, 8, 11, 13, 17, 22 and 23) reflected the particular effect of age on their performance. The result of the data helped to draw a conclusion regarding the decision to waist the talents or how much time is required for the maturation as an expert. The results evidenced that the Pakistani batsmen can perform better between the age group of 28-32 years. So, the captains / Pakistan Cricket Board management need to utilize their talent until and unless their ages meet up to 28 years in order to get peak of their performance. Figures (1 to 23) had illustrated better understanding of the relationship between age and performance of Pakistani test batsmen.

Discussion

Cricket as we know is the most popular sports in Pakistan.
Cricket is being played in Pakistan on vast scale and considered to be a binding force that closes the gap between the different cultures and ethnic groups of Pakistan. People heart beat fluctuates with the performance of their national team. Over the years Pakistan team had glories but in patches. Winning the 1992 world cup in Australia and T20 world cup in 2009-10 were among the few highs in limited over cricket. On the other hand Pakistan team test performance is not different from one day and T20 competitions. The best era Pakistan have had was the early 90,s to 2001-02 in which Pakistan Win / lose ratio in tests was the highest 2.573 since the birth of Pakistan at world cricket. Surprisingly Pakistan team has lowest number changes in batting and bowling units in that era. Literature showed that every athlete has its peak and decline which depends on physiological and psychological maturation and its decline. Cricket is a team game but very much depends on the individual performance. Literature showed the age has significant effect on sport performance. This study had two objectives first to analyze the relationship between age and performance (Average) of cricket players at test level. Second what is the age of peak performance of test batsmen? Findings revealed that age has significant impact on batting performance. Majority of the batsmen touched the pinnacle of their performance between the age of 28 and 34 after spending a certain training time frame. The finding of the study were in line with the deliberate practice theory of Ericsson in 2000 which states that the expertise can be attained in any domain after spending certain time frame. He further highlighted that the difference in mediocre and expert in particular domain depends on the training time frame spent on the skill and mediocre usually spend relatively less amount of time in practice and training skills. Ericsson also emphasized heavily on the role of individual difference in attaining expertise, which states that every individual is different from one another and time to attain expertise can vary in individuals. Past Literature substantiated the role of talent, individual difference and time spent in practice in attaining expert performance. As far as Pakistan cricket team perfor-
Performance is concerned it is on decline and its win/lose ratio has dropped down to 1.117 from 2.532 in recent years (Cricinfo.com 2015). Cricinfo data base showed that there were 23 specialist batsmen tested by the Pakistan from 2000 to 2017 and most of them tested repeatedly. These figures clearly indicates that Pakistan team has been making frequent changes in player’s selection and batting order on consistent bases. There are 110 specialist test batsmen who had represented the national side from 1952 to 2017 and only 20% of them were able to exhibit their expertise at test match level, 80% of them were wasted before the maturation stage and not able to represent the country after a brief experience at elite level (Cricinfo.com, 2015). These changes has effected the batting performance by multiple ways first it is harming the confidence of young batsmen as they are facing career threatening consequences after early setbacks in terms of batting performance. Second, draining out the young talent before the maturation stage because most of the players were tested in early twenties and discarded prematurely form the team. Third, most importantly causing inconsistency and unpredictability in team’s batting performance. By considering the findings of this study it is suggested that following recommendation should be consider in order to stabilize batting performance and develop expertise in test players.

- It is suggested the expertise batting performance can be accessed between the ages of 28 to 34 years because most of the great players had achieved their peak performance in between that age.
- It is suggested that in order to develop expertise in batsmen one should be given a consistent run of opportunities and exposure (4 to 6 years) at test level until they approach to age 28 to 34 years.

**Conclusion**

The study was conducted to analyze the relationship between age and performance of test players in order to find out their peak performance age. The findings revealed that the majority of the test batsmen achieved their peak performance between the age of 28 and 34 years. Some of them touched their peak before 28 years because of their early start
of their test career as compared to others. Analysis showed that the batsmen achieved their peak after a good number of consistent participation at test level. On the basis of these result we can conclude that in order to achieve the peak performance consistent opportunities are required. Unfortunately Pakistan cricket team is unable to provide the consistent opportunities to the batsmen in recent years which is restricting its batsmen to reach its peak performance age and ultimately resulting in fragile batting performances in crunch situations. The study will be beneficial for the Pakistani Cricket Board and for the international and young players in order to cope up with the problem of utilizing the talent of batsmen at a specific age. The figures (1 to 23) are the evidence of primary and secondary data resources that what should be the waiting time for firing or hiring of test and young batsmen in order to get excellent results in test cricket.

**Recommendation**

Following recommendation are suggested in order to stabilize and develop expertise in cricket performance

- It is suggested to bring consistency in player’s selection and playing opportunities especially to young players in order to give them enough time to stabilize themselves at test level.
- It is suggested to set a team formation policy based on future investment program, where a specific number of young batsmen should enroll to get exposure for extended period of time at test level unless and until they reach the age of 28 and 34 years.
- It is suggested to develop player’s pathway starting form learning stage age (6-8 years) to expert stage (20-40 years) based on player’s age.
- It is suggested to strengthen and scrutinized selection policies at youth level in terms of consistency in player’s selection at youth level where player should enroll in player pathway from development stage to expert stage.

It is also suggested to establish a secondary resource in form of A TEAM at national level in order to develop young talent before its exposure to test cricket and also a platform for rehabi-
litation in order to facilitate player’s comeback after is premature exclusion from the national side.

References


