

Point Losing KPIs in Final Competitions of Karate World Championships – 2014 and 2016

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Abstract Excelling in the performance of his or her chosen sport is the major aim of any elite athlete. The aim of this study was to understand and determine frequencies of point losing KPIs executed during Karate World 2016 final competitions among world-class karate athletes. There has not been any similar research in Karate KPIs yet. All the 20 final competitions of individual and team matches in World Championship 2014 and 2016 have been downloaded in HD quality. A group consisted of six skillful karate fighters was set to determine point losing KPIs. By the help of Kinovea video analysis software and Excel Microsoft Office 2013 the data of the matches has been recorded. A total number 390 point losing KPIs in the final competitions has been analyzed. The results indicate that “Point winner starts an attack” stands first with 44 out of 390, and the second most point losing KPI occurred when “Point loser starts an attack” with 37 out of 390. Furthermore, “Wrong technique selection” by fighters rated in the third place among point losing KPIs and is also an evidence of speed increase in today's Karate competitions.

Keywords Karate, KPI, Coaching

1. Introduction

As one of the popular sports, Karate is well-known all over the world [1], and it is distinguished into two competitive disciplines: Kata and Kumite. Kata is a fight against fictitious opponents, whereas Kumite is a real match against one opponent where the two competitors, under strict rules, are free to move, kick and punch in defensive and offensive ways [2].

Technique is the ‘proper pattern of movements to do a specific sport skill’. With regard to effectiveness, it is defined as the power to produce an effect (decided, decisive, or desired effect). In other words, a movement is effective if the execution achieves the objective(s) of the movement (e.g. accuracy, scoring, power, projecting the body as far or as high as possible, etc.) [3].

For safe practice in prearranged-sparring, the offensive techniques, such as punches and kicks, must be controlled or stopped before contact [4]. In the context of kumite, punching (zuki) and kicking (geri) techniques are allowed at the head (jodan) and abdomen (chudan). Kumite competition is divided into team matches and individual matches. Kumite's scoring system contains: 3 points (Ippon) are

awarded for leg kicks to the head and the techniques of cleaning and throwing, which result in a final fall of the opponent or a final punch, 2 points (Waza-Ari) are adjudicated for kicks to the trunk and punches to the back, including the back of the head and neck. Finally, 1 point (Yuko) is awarded for single arm punches to the head and body [5].

Karatekas usually feel more confident and comfortable when they are taking the lead, especially when the score difference is significant (e.g. difference of 3 points or more) [6].

In 2019, Petri and her colleagues concluded that by using virtual reality training sessions, the real athletes can try out different kinds of reactions while being in a safe environment. However, training under this situation is safe, but VR training should not replace training in reality [7].

To achieve injury prevention, new rules are stricter about prohibited behavior for competitors, including excessive force used in dealing blows to permitted areas, to the forbidden areas (throat, arms, legs, groin, joints, and instep), blows to the face with open hand techniques, and dangerous or prohibited throwing techniques. Any illegal behavior results in a warning or penalty [8].

Historically, coaching intervention has been based on subjective observations, which have been shown to be problematic. Bias, highlighting, limitations of memory and observational difficulties are just a few of the pitfalls associated with a subjective evaluation. Thus, successful coaching hinges on the collection and analysis of unbiased, objective data. Technological advances have allowed

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coaches greater access to video-based feedback; however, the increased volume of information provided by such a tool requires careful consideration in terms of what aspect of the performance should be focused on by coach and athlete alike [9].

Contemporary match analysis systems, whether based on conventional video coding of matches or player tracking technology, provide a rich source of quantitative data on how well skills are performed during competition. The collection of such data enables key performance indicators for a single player or the team as a whole to be identified. The performance indicators may relate to biomechanical, technical, tactical or behavioral measures of performance [10], (For example in Kumite when missing point(s): wrong footwork, wrong weight-shifting, error of distancing, etc.)

To the best of our knowledge, there has been some studies in Karate performance analysis such as physiological responses and Karate performance by Chaabene and his colleagues [11], visuo-motor behavior rehearsal, relaxation and imagery in Karate by Weinberg and colleagues [12], neuro-muscular tests and Kumite performance by Roschel and colleagues [13], mood states in Karate competitors by McGowan and Miller [14], spatiotemporal analysis of Karate Kumite moves by Lapresa and colleagues [15] and too many other researches in Karate performance analysis; however, there has not been any type of research in this combat sport in point losing KPIs up to the present time. Hughes and Bartlett have suggested that KPI's are "a selection, or combination, of action variables that aims to define some or all aspects of a performance" [16]. To become an elite athlete, several hours of training is one of the requirements that is needed to be accomplished. It has been shown that changes can occur in brain tissue with respect to repetitive performance of the motor exercise lasting in years [17]; However, knowing and having a good and practical understanding of point losing KPIs in high level karatekas will definitely assist high performance coaches, technical experts, scientific researchers and the athletes to improve their planning and training programs which can lead to an enhanced performance even in elite athletes. Thus, the aims of the current study were to divulge the point losing KPIs in final competition of Karate World Championships –Austria 2016 and Germany 2014 in order to help coaches and top level athletes in this newly Olympic included combat sport.

2. Methodology

All the twenty final competitions of male individual (Individual male weight categories: >84 kg, <84 kg, <75 kg, <67 kg, <60 kg) and team matches (without weight limit) in Karate World Championship 2014 and 2016 have been downloaded in HD quality. There were five final matches for individuals on the basis of their weight categories and also five matches for team final in each world karate championships. All the critical incidents' footages have been analyzed, frame by frame by the help of Kinovea Video

Analysis software (0.8.15) (and by reaching a consensus with invited karate experts), the data has been entered in Excel Microsoft 2013 for more analyzing. Before the researcher goes for any data entrance, all the perturbations and critical incidents (N) were recorded with their full antecedents (N-1, N-2, N-3...) in order to obtain more accurate KPIs. Then all the successful techniques (winning points) and point losing KPIs have been extracted by regarding the antecedents and critical points which started to occur by the referee *hajime* (start fighting) and finished by the referee *yame* (stop fighting).

Furthermore, for a better and stronger research result, five other Karate experts (who had, at least, an experience in international kumite competition) have been recruited. At first, they were given full explanation of the research project and all about KPI(s). After explanations, they were asked for announcing some KPI(s) which came to their mind. Then three different scenes of kumite scoring have been presented to them. Then they were asked to write whatever KPIs which related to above-mentioned scenes on a paper and a three-day deadline has been given for this task. After three days, all the suggested KPIs have been collected by the researcher and then by acceptance of the most agreed KPIs (ie, 4 out of 6) by the experts (5 recruited experts plus researcher) the tentative project started. The pilot research was 5 scoring scenes from -60 kg final individual kumite of 2016 world championships. The list of agreed KPIs has been presented to the experts alongside with requested -60kg clip and they were asked to consider the KPIs as it was agreed and listed before. This time the deadline was one week and after that all the requested KPIs related to -60kg final individual kumite have been collected. A few more KPIs has been agreed and added to the final list and all the experts have reached to a consensus. After reaching a consensus on every aspects of KPIs and existed antecedents of the matches, the analysis has been started.

The matches have been analyzed twice with a fortnight interval between by the same researcher who is black belt and karate coach. All the data, then, has been gathered in Excel Microsoft 2013 for analytical objectives and records.

23 different techniques have been recorded. Techniques were as follows: Ashi Barai (foot sweep), Mae Geri (front kick), Jodan Mawashi Geri (upper roundhouse kick), Chudan Mawashi Geri (middle roundhouse kick), Mae Mawashi Geri (flip kick), Ura Mawashi Geri (hook kick), Ushiro Ura Mawashi Geri (spinning heel kick), Ushiro Geri (back kick), Yoko Geri (side kick), Kizami Zuki (Jab), Oi Zuki (lunge punch to head), Kizami Zuki Gyaku Zuki (jab + reverse punch), Kizami Zuki Oi Zuki (double face starting with front hand), Oi Zuki Kizami Zuki (double face starting with rear hand), Kizami Zuki Oi Zuki Oi Zuki (triple face), Gyaku Zuki (reverse punch to body), Uraken (back fist), Haito Uchi (ridge hand), Uke (block), Nagashi Uke (sweeping block), Osae Uke (pressing block), Head Movement (dodge), Mawashi Uke (roundhouse block). It was analyzed which of the above techniques have been used by competitors and, moreover, which were used by winners

and losers the most.

O'Donoghue's (2010) definition of performance indicators was a great guide to extract our 32 point losing KPIs. O'Donoghue announces that 'A performance indicator must represent some relevant and important aspect of play'. [8] KPI represents key performance indicators.

At first, all the antecedents' KPI have been extracted, then by reaching a consensus, and by all 6 experts' confirmations, 32 KPIs have been selected for more research about point losing KPIs. In Table 1 You can see 32 point losing KPIs (N-1, N-2, N-3, ...) which were used in this study.

Table 1. Point Losing KPIs Agreed by 6 Karate Experts

PL starts an attack	PO starts an attack	Closeness for stimulation by PL	Closeness for stimulation by PO
PL gets closer	PO gets closer	Good footwork	Good weight-shifting
Wrong footwork	Wrong weight-shifting	Deceiving (by hands, legs, distancing, etc.)	Deceived (by hands, legs, distancing, etc.)
Good block (after technique)	Good technique prevention	Incomplete technique performance	Complete confusion
Making PO imbalanced	Getting imbalanced by PO	Inappropriate stance	Good Stance
PL starts a counter-attack	PO starts a counter-attack	Error of timing	Error of distancing
Uncovered guard	Forced error	Wrong technique selection	Good technique performance
Delay in technique performance	Performing pre-scoring technique (preliminary technique)	Haste	Referee made mistake (even by VR)

PL starts an attack: This KPI indicates that the point loser starts the attack before the scoring occurs and finally he missed a point.

PO starts an attack: this KPI indicates that the point winner (obtainer) starts the attack before the scoring occurs and finally he obtained a point.

Closeness for stimulation by PL (pressure): This KPI indicates that the point loser tries to stimulate his opponent by bluff charging him, tries to trick him or putting him under pressure by showing off some attacks by hands and feet to lower or upper body (without performing any actual attack) in order to force him doing a wrong movement or reaction. Finding a way for a better attacking to the opponent by creating such perturbations is the reason for this KPI. However, finally this leads to losing point(s) for the PL (point loser who performs this KPI).

Closeness for stimulation by PO (pressure): This KPI indicates that the point winner tries to stimulate his opponent by bluff charging him, tries to trick him or putting him under pressure by showing off some attacks by hands and feet to lower or upper body (without performing any actual attack) in order to force him doing a wrong movement or reaction. Finding a way for a better attacking to the opponent by creating such perturbations is the reason for this KPI. Finally this leads to obtaining point(s) by PO (point winner who performs this KPI).

PL gets closer: This KPI is not the same as "closeness for stimulation by PO/PL"; however, there is closeness. This KPI indicates that the point loser gets close to his opponent intentionally or unintentionally. This closeness can be happened by previous strategy or even by a wrong or appropriate footwork. Actually, This KPI shows that this is the point loser who is entering to the red zone of fight where anything for scoring can occur because the distance between two fighters is decreased.

PO gets closer: This KPI is not the same as "closeness

for stimulation by PO/PL"; however, there is closeness. This KPI indicates that the point winner gets close to his opponent intentionally or unintentionally. This closeness can be happened by previous strategy or even by a wrong or appropriate footwork. Actually, This KPI shows that this is the point winner who is entering to the red zone of fight where anything for scoring can occur because the distance between two fighters is decreased.

Good footwork: This KPI indicates that a fighter has done a good and appropriate displacement of body by selecting a right feet movement(s). The diagnosis of right feet movement(s) is by considering the position of the fighter in comparison to his opponent whether there is dominancy or priority over his opponent or not. Of course, if the displacement of feet leads to a better position while being attacked by opponent, and causes a good run away from the opponent's attack then it is also considered as "Good Footwork". Therefore, this KPI is considered both in attack or defense if a fighter finds a better place for his feet.

Good weight-shifting: This KPI refers to a good upper body movement without doing any footwork or feet displacement. So the main factor for this KPI is upper body movement (to right, left, back or forth) and no foot/feet displacement.

Wrong footwork: This KPI is the opposite of "Good Footwork" KPI. Actually it refers to any foot displacement which cause a fighter to be in danger, losing point, getting imbalanced or unable to perform an appropriate technique.

Wrong weight-shifting: This KPI is the opposite of "Good weight-shifting" KPI. Actually, it refers to inappropriate upper body movement (without any foot displacement) while being under attack or pressure or while trying to start an attack. This KPI can lead to a danger position, inappropriate reaction to an opponent's attack or trick or even to a loss of point(s).

Deceiving: This KPI indicates that a fighter showing a

tricky action in order to deceive his opponent and pave the way for the main attack. Decreasing or losing an opponent's concentration is the main factor for performing this KPI.

Deceived: This KPI refers to a fighter who has lost or decreased his concentration and deceived / acted as it was desired by his opponent. In other words, being trapped by an opponent's trick and doing wrong reaction or losing point(s).

Good Block: This KPI indicates that a fighter has stooped or defended his opponent's attack by using his hands. If the fighter has not used his hands for stopping the kicks or punches thrown by his opponents, we would never have considered this type of attack prevention as the good block KPI. Therefore, wherever hands stops the kicks or punches thrown by an opponent, then it is a "Good Block" KPI.

Good Technique Prevention: This is actually referred to a type of KPI in which a fighter, without using his hands, by dodging or moving to sides or back & forth (with footwork and body movement) proceeds to stop or run away from his opponent's attack. In Case a fighter neutralises his opponent's attack by doing an in timely attack just before his opponent's or doing a better attack towards his opponent right at the time that his opponent starts his attack, then scoring is a probable and we consider such an attack prevention as "Good Technique Prevention". The main difference between this KPI and "Good block" KPI is that the former's defensive action occurs during or before opponent's attack while in latter the defensive action occurs after opponent's attack and by using hands as defensive arms.

Incomplete Technique Performance: This KPI indicates that a fighter couldn't perform a technique which leads to scoring, either it is performed incompletely or wrongly. For example; if a fighter tries to perform a Kizami zuki and he faces his opponent's Gyaku zuki to the body and loses a point, then everybody saw that Kizami zuki but it was also seen that his technique has not done completely or went to a wrong (pointless) direction and in the middle of his attack he faced with a reverse punch strike. In other words, if a thrown punch or kick is faced with a better technique by an opponent and at last this led to losing point with a half-way executed technique, it is considered "Incomplete Technique Prevention". There is a difference between "Good Technique Prevention" and "Incomplete Technique Performance" and it is that the former is used for point winners and the second one is used for point losers.

Complete Confusion: This KPI refers to any fighters who is completely trapped by technical or tactical skills of his opponent, and there would be no way for him except losing point(s). In other words, it is referred to a type of situation when a fighter is totally mixed up thanks to his opponent's superior skills. It is worth to be mentioned that this KPI doesn't have any relation with another indicator which is about getting imbalanced by performing feet sweep technique.

Making PO Imbalanced: This KPI refers to a situation where point loser, before a scoring occurs, tries to imbalance his opponent. This unbalancing situation should be happened

where a fighter (point loser) performs a foot sweep for knocking an opponent off balance (Ashi Barai) or using a throw technique to knock the opponent to the ground.

Getting Imbalanced by PO: this refers to any point loser who get imbalanced by their opponent's Ashi Barai (foot sweep) or throws before any scoring occurs.

Inappropriate Stance: stance refers to the position of whole body (especially feet) in a fight. Appropriate stance refers to the proper positioning of the feet and body (without any foot displacement) while fighting which comes from dominancy and master level. Inappropriate stance indicates that the position of the fighter's feet or his body is not proper, in a way that his opponent can easily put him in danger. For example, at a time of defense, a fighter places his feet too close to each other, this wrong feet positioning (without having any definite plan or strategy) will cause him a foot sweep and losing point(s).

Good Stance: It refers to right feet stability, positioning and body posture while an opponent is attacking to him. Saving energy and increased focus and concentration is a reason for master class level fighter to select a good stance with calm and show their advantages over their opponents. Furthermore, another usage of this KPI is where there is an attack toward a fighter and the fighter gets imbalanced, and quickly he can get his balance again and becomes ready for next attack(s).

PL starts a Counter-Attack: This KPI refers to a situation where a point loser faces an attack by a point winner and after his opponent's attack, the point loser starts a counterattack by performing a technique. However, his counterattack is useless for him and no points for him at the end of this perturbation.

PO starts a Counter-Attack: This KPI refers to a situation where a point winner faces an attack by a point loser and after his opponent's attack, the point winner starts a counterattack by performing a technique. In the end, his counterattack is useful for him and bringing him point(s) or paving the way for him to get point(s) by the end of this perturbation.

Error of Timing: Timing is a determinant factor in Karate Kumite. Good timing causes defensive actions occur in timely even before the attacker could understand what the defender has for him, through this factor, a good defensive action takes place with high efficiency, this means that you are ahead of your opponent even for a few microseconds which is highly demanded and considered in world class level. "Error of Timing" KPI means that a fighter doesn't have a proper reaction at a proper time to his opponent's stimulation or attack either in defense or attacks.

Error of distancing: This KPI refers to a fighter where he couldn't keep the right distance of Kumite with his opponent (getting too close to him carelessly), either in attack or defense, and this may put him in danger or even losing point(s).

Uncovered Guard: A standard hand guard in Karate is a guard where your hands could cover your body and head well. If this standard gets ignored and a point loss occurs then

this KPI gets activated for that fighter (for example; a thoroughly hands down while fighting and losing point).

Forced Error: This KPI occurs when a fighter pushes his opponent under pressure (ie. By kicking or punching) and this pressure causes the opponent to lose his concentration and uses a wrong technique or reaction which would bring him point loss.

Wrong Technique Selection: This KPI refers to a situation where a fighter uses wrong or inappropriate technique in defense or attack, instead of using a proper one. For example; when a fighter uses Kizami zuki for attacking to his opponent and his opponent performs quickly a nice Gyaku zuki and the fighter loses point. Insisting on doing Kizami zuki again and losing points in front of this master class Gyaku zuki striker is definitely a wrong technique selection.

Good Technique Performance: Performing a proper technique at a proper time which puts a fighter in safe zone or puts his opponent in danger. This could be considered for techniques where those techniques may bring point(s) or paving the way for brining point(s) or at least brings back a fighter a balance (if he gets imbalance by his opponent) or keep him in a safe zone (while his opponent is offensive).

Delay in Technique Performance: In some situations, fighter A performs a good technique as counterattack; unfortunately, the judge will not give him point(s) because fighter B's technique had been performed correctly right before the fighter's A. Therefore, in Karate first strike which can hit the target gets point not other techniques by an opponent right after that. Sometimes, fighter A could perform a technique much quicker but his delay or doubts in performing those techniques wouldn't bring him point(s) or even worse causes him losing point(s).

Performing Pre-Scoring Technique: This KPI refers to a situation which a fighter shows a preliminary technique in order to score or pave the way for his secondary technique. The preliminary technique must be an independent technique, performed completely or incompletely.

Haste: This KPI generally occurs in the last minute or

seconds of a match where a fighter tries to do his best to score; however, this hastiness brings him nothing except point loss. Attacking recklessly and carelessly is the reason for labeling this KPI.

Referee Made Mistake: in any sports, the mistakes caused by referees are inevitable and Karate Kumite is not an exception, even by VAR.

In order to understand what are the main reasons for losing a point we should clearly know what where the process and what happened in this dyadic (combat sport 1 vs. 1) system. Having a good knowledge about point losing KPIs can lead us to a result that why a point is lost.

3. Result and Discussion

In this research, 32 point losing KPIs were considered and all the 20 final matches (point losing side) have been analyzed on the basis of these point losing KPIs. A total 390 cases have been extracted. Among them 44 out of 390 were the most point losing KPI which allocated to "Point Obtainer (PO) starts an attack", it means that the karateka who won the point was the man who started the attack. On the other hand and the second top (37 out of 390) was "Point Loser (PL) starts an attack", it means that the man who attacked first and made the perturbation lost the point finally. In table 2, you can see the five top point losing KPIs.

Table 2. Top 5 point losing KPIs

Point Losing KPI Name	Frequency
Point Obtainer (PO) starts an attack	44
Point Loser (PL) starts an attack	37
Wrong Technique Selection	28
Error of Distancing	27
Delay in Technique Performance	23

And in table 3 you can see top five point losing techniques on the team or individual specific weight division in 2016.

Table 3. Point Losing KPI based on team competitions and Karate World Federation individual specific weight division 2016

KPI Name	Team	Individual +84 kg	Individual -84 kg	Individual -75 kg	Individual -67 kg	Individual -60 kg	Total
PL starts an attack	14	1	1	2	5	2	25
PO starts an attack	10	3	2	3	1	4	23
Error of Distancing	8	3	2	1	3	3	20
Wrong Technique Selection	5	4	2	2	2	5	20
Delay in Technique Performance	6	3	0	1	3	0	13

Table 4. Point Losing KPI based on team competitions and Karate World Federation individual specific weight division 2014

KPI Name	Team	Individual +84 kg	Individual -84 kg	Individual -75 kg	Individual -67 kg	Individual -60 kg	Total
PO starts an attack	5	4	2	4	3	3	21
PL starts an attack	3	3	3	2	1	0	12
Error of timing	5	0	0	2	2	3	12
PL starts a counter-attack	4	2	0	1	3	1	11

And in table 4 you can see top four point losing techniques totally on the team or individual specific weight division in 2014.

Our findings indicate that at most of the time in these two world championships, this was the point winners who start an attack or a perturbation and finally a critical incident (scoring) occurred; especially, in 2014 world championships which point winners started 21 perturbations which ended in point losing for their opponents. On the other hand, in 2016 these were the point losers who have the most first attack (25 attacks) which led to point loss for them. These two statistics shows that there is big shift from defensive weaknesses of point losers in 2014 to their offensive weaknesses in 2016. In other words, in 2014 the weaknesses in defending correctly caused the most point losing while in 2016 the weaknesses in attacking have brought the most point loss for the karate fighters who attack first. However, we see a slight increase in “PO starts an attack” KPI from 2014 to 2016 which was 21 in 2014 and it became 23 in 2016. Thus, considering both world championships in 2014 and 2016, “PO starts an attack” with 44 recorded items stands first in point losing KPIs and in second place stands “PL starts an attack” with 37 recorded items.

“Wrong Technique Selection” stands in the third place of the most point losing KPIs. Our research shows that in 2014, there were only 8 recorded items for this KPI; however, when it comes to 2016 there is a sharp increase of this point losing KPI. In 2016, we recorded 20 items for “Wrong Technique Selection” which helped this KPI develop and reach to the third place among all 32 KPIs exists in our research for the most point losing KPIs. This sharp increase may show how the speed is growing in today’s karate competitions. The more speed you have the more mistakes your opponents can make in technique selection or in response. For example, In team final 2016 between Iran and Japan, there were 5 matches, therefore as you see from Table 3; for example, in “wrong technique selection” in 5 matches there were 5 recorded items; however, the same KPI (wrong Technique Selection) in -60 kg kumite between Iran and Netherlands occurred 5 times which means equal to total of all five team matches. So it shows that the higher speed competition causes the fighters make mistake in proper technique selection. As you see again in this weight (-60 kg) there was no (zero) “Delay in Technique Performance” which shows that in light weight a karateka should decide rapidly what to do or react against his opponent; so however there is no “Delay in Technique Performance” but there are a lot of “Wrong Technique Selection” equal to all five team matches.

“Error of Distancing” stands fourth among all point losing KPIs. This KPI had 7 recorded items in 2014 while in 2016 it reached to 20. Higher speed cannot guarantee scoring if you don’t care about distancing specially in front of a world-class fighter with quick footwork. Wrong distance estimation at the time of attack or defense will give your opponent a chance for scoring and finally will lead to point losing for

you. Actually, another sign of speed increase in recent Karate competitions is having wrong estimation in distancing for a fighter. Your opponent tries to deceive you with his body movement and footwork, this should be done too quickly in order to avoid proper reaction; all of a sudden the deceived person starts an attack or defense and the result for him is nothing but point losing.

Another evidence of speed increase in recent Karate competitions is our “Delay in Technique Performance” KPI which stands in fifth place. This KPI may show that a fighter couldn’t do his proper technique at the time of need because of the lack time in presenting his ideal technique. In 2014, this KPI had 10 recorded items while in 2016 it experience a slight increase and reached to 13 recorded items. In general, three of our top five point losing KPIs are a good evidence of speed increase in today’s Karate competitions. “Wrong Technique Selection”, “Error of Distancing” and “Delay in Technique Performance” are our three important factors in showing the speed increase in Karate Kumite. Furthermore, in 2014, our investigations show that “Error of Timing” with 12 recorded items stand third in 2014 KPIs’ related stats for point losing.

4. Conclusions

Obviously, we can conclude from this research that we have been experiencing a more speedy Karate in recent years and all the coaches and athletes (Karate fighters) who are trying to be successful in world-class competitions should consider two main results of this research; Firstly, they should empower themselves in speedy attacks by using short distance and higher speed punching or kicking; Secondly, they should equipped themselves with less energy and time-consuming techniques in defensive manner. Using complicated and multi motions techniques in defense is futile. Thus, they should choose a short and quick way of defending which is safer for them and give them the opportunity to have priority over their opponents.

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