

## THE EFFECTIVENESS OF BIKE FITTING IN IMPROVING TIME ON A 1-KM CYCLING TIME TRIAL OF AN AMATEUR ROAD CYCLIST

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### ABSTRACT

Time trials, the heartbeat of precision and endurance in the cycling world, are a testament to an athlete's solitary battle against the clock. A unique discipline where riders challenge not only their competitors but also their limits, time trials unveil the pure essence of speed, strategy, and mental fortitude. In the world of cycling, achieving optimal performance and preventing injuries is a delicate balance. One crucial factor that often goes underestimated is the art and science of bike fit. Bike fitting involves adjusting the biomechanics of the bike to suit the individual cyclist's body and capabilities, aiming to improve performance and reduce the risk of injuries. The study aimed to determine the effectiveness of bike fitting to improve the performance of amateur road cyclists, the researchers utilized the 1-KM cycling time trial test as an outcome measure to assess the performance of the amateur cyclists before and after the implementation of the bike fitting. The effectiveness of bike fitting in improving speed on a 1-km cycling time trial of an amateur road cyclist was expressed through the pre-test and post-test scores of the participants. Prior to the implementation of the program, the pre-test scores of the 30 participants had been recorded. The gathered pretest scores signify the initial measures of the time of each participant. During the implementation, it was notable that the 1-KM cycling time trial of the participants had significantly improved by the end of the bike fitting session. Overall, based on their Mean Value the participants have an improvement in their posttest scores as compared to their pretest scores with the mean of the pre-test scores and post-test scores is 106.18 secs and 104.86 secs respectively. The data recorded from these scores indicated a decrease in the time of 1-KM cycling time trial. The improvements in the time trial were most apparent after the participants completed the bike fitting where their posttest scores significantly improved as compared to their pretest scores. Moreover, the intervention of the Bike Fitters protocol helps improve the body's flexibility, posture, range of motion (upper, mid and lower body) balance. Based on the results, the researchers concluded that there is a significant difference between the 1-KM cycling time trial pretest and posttest measurement of the respondents after participating in the bike fitting; thus, the outcome of the study was consistent with the objective of the study.

**Keywords:** Bike fitting, Amateur cyclists, Cycling time trial, Road cycling