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Design of an Integrated Model for Public Service Vehicles Overload Prevention Based on Micro-Controller.

Abstract: The load capacity of a PSV vehicle is normally determined by tare weight and not the available cargo space as stated in section 56 of the Traffic act Cap 403, Kenya. Unfortunately, law enforcers on Kenyan roads only check the number of passengers in a PSV vehicle. This can be misconstrued to deem the PSV vehicle as compliant, while in real sense the actual tare weight is above its capacity. There are numerous instances where PSV vehicles are overloaded, and this has a direct contribution to increased road carnage. This study examined the implementation of an integrated microcontroller-based technology to observe and monitor tare weight in the PSV industry and introduced solutions that might resolve the misconception of overloading, while enhancing safety within the industry. This study provides the design of an integrated model for prevention of PSV overloading using a smart microcontroller. The resulting design was tested using Arduino microcontroller environment for purposes of validating applicability and feasibility. The study uses a proof of concept (POC) methodology and contributes to the body of knowledge in automated and integrated micro-controller-based safety monitoring industry.

Keywords: PSV, Tare weight, Overloading, Micro-controller.

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