ABSTRACT

This study explains in detail the M-tag of Pakistan's electronic toll collection (ETC) system based on (an RFID) radio frequency identification system. Due to traffic jams and the use of the antiquated manual approach in most of the current toll ETC systems, customers frequently encounter hurdles that cause them to waste important time waiting in line at toll gates. In addition, the design of the barriers, where each vehicle must stop and wait until the barriers are raised, takes time delays into account. An electronic toll-collecting system based on radio frequency identification (RFID) technology is suggested to address the concerns mentioned. The integrated system is divided into two primary sections the electronic side, which receives all input data, and the database management office, which maintains all essential data storage. The research developed a web of things, in which all data transfer through the cloud and subsequently to the head office in real-time, to compare the present electronic toll collection system. Furthermore, a barrier design improvement keeps the gate open for all cars with that many tags without asking them to stop, reducing time delays. Foreign studies have been conducted using different methods to compare system throughput to existing toll systems, and it has been shown that the developed scheme has a substantially larger proportion than the present system. the prior study is confined to why Pakistan's citizens do not intend to use the ETC system to fill the gap. As a result, based on conceptual insight, the current study, expositor the behavior of citizens and their impact on purchasing decisions, public awareness, environmental effect, and perceived cost & time. because there aren't any studies that particularly address these factors in the context of electronic toll-collecting systems. Additionally, this study particularly focuses on the "young adult to baby boomers" age cohort among all the other generations since they are better educated and more skilled social media and ICT users than earlier generations. An Online survey was conducted to collect data by obtaining 500 people from Pakistan as the sample using a purposive sampling technique. Data were examined using the SmartPLS and SPSS software, and the findings indicate a strong positive impact on the variables (PD, PA, EF, PC&T) which in some ways with the earlier work. In addition, the e-commerce sector and literature would benefit from the suggestions and directions for future research made in this study.