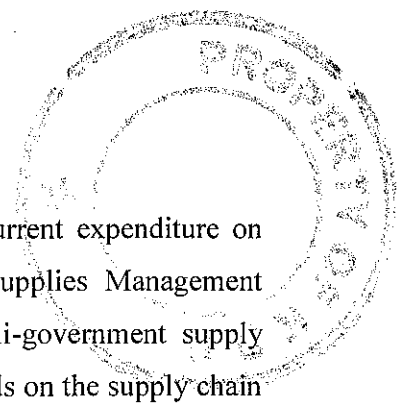# ABSTRACT

The government spends more than one third of the health service recurrent expenditure on medical supplies, management of which is facilitated by Medical Supplies Management Information system (MSMIS), linking all major government and semi-government supply chain players. The Govt. healthcare service is highly sensitive and depends on the supply chain performance, where increasing intensity of activities can lead to constraints or bottlenecks, which call for knowledge, based better management using modern ICT and resources to meet required performances or challenges in the medical supply chain. After three years of operation and expansion, some key areas of MSMIS show signs of losing performance, presumably related to supply chain ERP bottlenecks/deficiencies. This study focuses on identifying the most important bottleneck related performance factors of the MSMIS. In literature review, researcher has identified fifteen; Demographic, Human, Organizational, and Environmental, factors as most important variables influencing three bottleneck factors, in the case study area. The most significantly influencing factors related to the ERP bottlenecks, were quantitatively identified using Uni-variate, Bi-variate and Multivariate analysis of the user response survey data, collected from a random stratified sample of on-line MSMIS users in the Western Province of Sri Lanka. A qualitative analysis was conducted using views of the conveniently selected sample of industry experts in healthcare logistics and IT, to determine the applicability of modern ICT and other interventions to address the identified bottleneck effecting factors, as individual applications as well as, in a combine model application, as solutions for the most critical bottlenecks and its influencing factors. The quantitative analysis has yielded eight most significantly related factors that affect MSMIS bottlenecks, and out of that IT infrastructure, Psychological, Leadership and stakeholders are the most correlated four factors in the order of decent. In the qualitative study with expert opinions, have further consolidated those results since their attention on ERP issues and solutions are also aligned with quantitative findings and mainly focused on ICT and management solutions, especially in the selection of technologies/tools in the real-time stock utilization and tracking model, for accurate national demand forecasting via big data analytics. Thereon, IoT, cloud computing, mobile ERP, RFID, model dispensing system, on-line training, development audits and job role re-defining applications, were recommended by the experts' as solutions for the MSMIS bottlenecks.

Keywords: ERP systems; bottlenecks; ICT tools and techniques; Information Systems.