

## ABSTRACT

Sri Lanka is an agricultural country. In most of the rural areas, the primary income generates from vegetable cultivation. Vegetable cultivation has been subjected to harvest losses in many years. Post-harvest losses and preproduction losses self-oriented aspects throughout the agricultural sector in the country. As literature reveals, the pre-harvest losses cannot be controlled, but post-harvest losses possible with appropriate technology. Post-harvest losses are the losses that take place after harvesting from farm to customer's hand. This factor study tries to see what the factors are affecting post-harvest losses. Further, the study expects to explore the factors affecting the rejection of the plastic rate system (which is rejected by the farmers and most of the intermediaries in the supply chain) introduced by the government as a remedy to overcome post-harvest losses. The study has quantitative and qualitative approaches to data analysis. For the quantitative study, as the sample, 533 farmers and dealers were selected. 454 farmers were selected using convenience sampling method, while 79 dealers were selected using the same method. For the qualitative study 5 academics, 2 agricultural specialists, 3 leading farmers and 5 corporative hierarchies in fruit and vegetable trading were selected using judgmental sampling method. Questionnaire method was used to quantitate analysis while interview method was used to qualitative analysis and thematic approach used as analysis tool. The quantitative analysis was conducted by using univariate analysis, multivariate analysis, and factor analysis. AMOS (ver 25) and SPSS (ver.22) were used for the analysis as a statistical tool. In the quantitative analysis, sample adequacy was -86 percent for farmers while 66.6 percent for dealers. In case of Reliability 85.2 percent for farmers while 87.4 percent for the dealers. Factors which significance to farmers are; forced decoloring, movement loss, over packing, poor knowledge in packing, poor timing in harvesting, poor timing to market, rough contact, third sorting, transport loss, unsafe loading and poor knowledge in harvesting as important to post-harvest losses. Regarding the factors affecting the rejection of plastic crates, sample adequacy was 94.3 percent and 83.8 percent, while the reliability is 93.8 percent and 94.2 percent, respectively for the farmers and the dealers. As the factors affecting the rejection of plastic crates, the container storage problem is common to both parties. Inflexibility in Reverse logistics, inflexibility in management, lack of options for damage containers, etc. are the dominant factors for farmers. At the same time, to the dealers, they have different factors such as too costly in Reverse logistics. At the end of the study found due to lack of proper awareness, poor

information, poor knowledge of the systems, procedures and methodologies adopted by the farmers in cultivating, transporting, packing and storing, most of the losses in the post-harvest category arises. Whilst, poor awareness has influenced the rejection of plastic crates without considering the benefits through usage. Therefore, the study strongly identified lack of education of farmers had become the main reason to have post-harvest losses and rejection of plastic plates by farmers. They do not agree to accept the financial benefits of reducing post-harvest loss. The other crucial explore through the research is dealers dominate the market, neglecting the need of the final recipient of the fruits and vegetable supply chain in Sri Lanka. There are also some practical problems such as handling difficulties, crate storage problems and the high cost of returning them to farmlands, which need to be considered when reestablishing the system.

Keywords: post-harvest losses, plastic crates, farmers, dealers