We examine the scheme of applying quantum cluster approaches to the detection of the topological properties in correlated topological insulators. Specifically, we point out the long-standing defect that may lead to incorrect topological invariants due to the explicit breaking of the translation symmetry, and propose a right way to get it around. This defect is universal in most quantum cluster approaches but has always been ignored. Therefore, our work is essential to the faithful determination of a nontrivial topology in an interacting system. Thus, it is of particular importance for both the quantum cluster approach community and the correlated topological insulator community.