The authors used an experimental research approach combining mechanical testing, monitoring techniques, and microstructural analysis to study damage and fracture behavior of steel fiber-reinforced concrete (SFRC).Specifically, they employed the following methods and experiments: o Three-point bending fracture tests on notched SFRC beams with different steel fiber contents to evaluate bending damage, load-CMOD behavior, flexural-tensile strength, and fracture toughness.o Scanning Electron Microscopy (SEM) to analyze the microstructure and fracture surfaces after testing, identifying mechanisms such as fiber bridging, debonding, and pull-out.o Fractal analysis of AE time-series data, where the Grassberger-Procaccia algorithm was applied to calculate the correlation dimension and characterize crack evolution and damage states.o Fracture mechanics analysis using the double-K fracture criterion to calculate crack initiation toughness, instability toughness, and cohesive toughness from load-CMOD curves.Together, these experimental methods allowed the authors to link macroscopic bending behavior with microcrack evolution and fractal damage characteristics in SFRC beams