The dynamics of an electron subjected to a uniform electric field is numerically studied in the scope of a tight-binding electron-phonon interacting approach aimed at describing transport in one-dimensional lattices. Particularly, the direct impact of intrachain disorder on the electronic dynamics is carefully investigated. Two kinds of disordered structures are considered: a binary lattice, in which the on-site energies are distributed according to the Fibonacci sequence, and an impurity endowed lattice. Within this physical picture, a novel dynamical process with no counterpart in pristine lattices is obtained. Our findings show that in the low-disorder limit, the electron performs spatial Bloch oscillations generating in the turning points of its trajectory composite quasi-particles that are formed by the interaction between a part of the electronic wave packet that disentangles from the oscillations and lattice phonons, which we name quasi-polarons. These structures propagate independently and the trend of their movement is a consequence of the assumed initial condition. Conversely, when it comes to highly disordered systems, in Fibonacci lattices, two strongly localized quasi-polarons are formed in the region where oscillating charge is confined, besides the propagating structures. Considering the impurity endowed lattices, a Gaussian barrier is introduced in the system leading to the formation of quasi-polarons that, after a short transient time, are strongly localized at the defect region. On the other hand, for a Gaussian well we observe several quasi-polarons formed at returning points of the oscillations, they are evanescent structures since after a time they dissociate between their components. Importantly, the critical values for the impurity strength to promote the quenching of Bloch oscillations and the localization of quasi-polarons are obtained. These findings may enlighten the understanding of the electronic dynamics above the mobility threshold in low-dimensional systems.