Esercizio 1. The language contains only the binary relations $<$ and e. The theory T_0 says that $<$ is a strict linear order and that e is an equivalence relation. Let $\mathcal{M}$ consists of models of T_0 and partial isomorphisms. Do rich models exist? Can we axiomatize their theory? If so, does it have elimination of quantifiers? Is it λ-categorical for some λ?

Esercizio 2. Let T_0 and $\mathcal{M}$ be as in Example 7.15 except that we restrict the language to the relations $r_0, \ldots, r_n$ for a fixed n. Do ω-rich models of T_0 exist ? If so, let T_1 be the set of sentences that hold in all rich model. Does T_1 has elimination of quantifiers ? Is T_1 ω-categorical ? Answer the questions above if we add to the language a constant 0. Answer the questions above when we drop the axioms $\neg\exists x\left[r_n(x) \wedge r_m(x)\right]$. (Rispondere sinteticamente.)