Zbl 247.05007
Erdős, Pál; Spencer, Joel
On a problem of Erdős and Hajnal. (In Hungarian)
Mat. Lapok 22(1971), 1-2 (1972). [0025-519X]

Let $|\mathcal{S}| = n$, $f(A)$ a set function which maps every subset of $\mathcal{S}$ into an element of $\mathcal{S}$ so that $f(A) \notin A$. A subset B of $\mathcal{S}$ is said to be independent if for every $A \subset B$ $f(A) \notin B$. $h(n)$ is the greater integer for which for every function f there is an independent set having at least $h(n)$ elements. The authors prove

$$\frac{\log n - \log\log n}{\log 2} + o(\log\log n) < h(n) < \frac{\log n + 3\log\log n}{\log 2} + o(\log\log n).$$

Classification:
05A10 Combinatorial functions
05A05 Combinatorial choice problems