**Zbl 448.10040**
**Erdős, Paul; Sarközy, A.**
*On the number of prime factors of integers.* (In English)
**Acta Sci. Math. 42, 237-246 (1980). [0001-6969]**

Let $pi_i(x)$ be the number of integers $n \leq x$ such that $\Omega(n) = i$, where $\Omega(n)$ denotes the number of prime factors of $n$ counted with multiplicity. Let $\delta$ be a constant satisfying $0 < \delta < 2$. Then the authors prove the following two results. First $2^i i^{-4}\pi_i(x) = 0(x \log x)$ uniformly for all $i \geq 1$. Next $(i-1)!(\log\log x)^{1-i} = 0\left(\frac{x}{\log x}\right)$ uniformly for all $i$ satisfying $1 \leq i \leq (2-\delta)\log\log x$. They deduce some corollaries to these results. We may quote: for every $\varepsilon > 0$

$$\sum_{1\leq i\leq z \log\log k} \pi_i(k) = 0(k(\log k)^{-\varphi(z)+\varepsilon})$$

and

$$\sum_{1\leq i\leq z \log\log k} \pi_i(k^2) = 0(k^2(\log k)^{-\varphi(z)+\varepsilon}).$$

Here the 0-constant depends only on $\varepsilon$ and $z$. $\varphi(x) = 1 * x\log x - x$, is defined for all $x > 0$ and $z$ is defined as the unique real root of $\varphi(x+1) = \varphi(x)$. It may be noted that $z = 0.54\ldots$.

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Classification:
11N37 Asymptotic results on arithmetic functions