Given

$$X \sim \mathcal{T}(\nu, \mu, 1)$$

Student's distribution with mean μ and $\nu > 1$ degrees of freedom (and variance 1), we have

$$\mathbb{E}[|X|] = \int_0^\infty \frac{x}{[1+(x-\mu)^2/\nu]^{(1+\nu)/2}} C(\nu)\mathrm{d}x - \int_{-\infty}^0 \frac{x}{[1+(x-\mu)^2/\nu]^{(1+\nu)/2}} C(\nu)\mathrm{d}x$$

where $C(\nu)$ is the normalising constant, equal to the standard density in zero $f(0|\nu,0,1)$. Thus,

$$\begin{aligned}\int_0^\infty \frac{x}{[1+(x-\mu)^2/\nu]^{(1+\nu)/2}} C(\nu)\mathrm{d}x = \mu \mathrm{P}_{\mu,\nu}(X>0) - \\ \frac{\nu}{\nu-1}\int_0^\infty \frac{\mathrm{d}}{\mathrm{d}x}\frac{1}{[1+(x-\mu)^2/\nu]^{(\nu-1)/2}} C(\nu)\mathrm{d}x \\ = \mu \mathrm{P}_{\mu,\nu}(X>0) + \frac{C(\nu)\nu/(\nu-1)}{[1+(\mu)^2/\nu]^{(\nu-1)/2}}\end{aligned}$$

and

$$\begin{aligned}\int_{-\infty}^0 \frac{x}{[1+(x-\mu)^2/\nu]^{(1+\nu)/2}} C(\nu)\mathrm{d}x = \mu \mathrm{P}_{\mu,\nu}(X<0) - \\ \frac{\nu}{\nu-1}\int_{-\infty}^0 \frac{\mathrm{d}}{\mathrm{d}x}\frac{1}{[1+(x-\mu)^2/\nu]^{(\nu-1)/2}} C(\nu)\mathrm{d}x \\ = \mu \mathrm{P}_{\mu,\nu}(X<0) - \frac{C(\nu)\nu/(\nu-1)}{[1+(\mu)^2/\nu]^{(\nu-1)/2}}\end{aligned}$$

so

$$\mathbb{E}[|X|] = \mu(2\mathrm{P}_{\mu,\nu}(X>0)-1) + \frac{2C(\nu)\nu/(\nu-1)}{[1+(\mu)^2/\nu]^{(\nu-1)/2}}\,.$$

In particular, when $\mu = 0$,

$$\mathbb{E}[|X|] = \frac{2C(\nu)\nu}{\nu-1}\,,$$

which remains bounded when ν goes to 2, while $\mathbb{E}[|X|^2]$ and therefore $\mathrm{var}(|X|)$ go to infinity.