The BBC is facing an existential crisis as a result of its failure to reach younger audiences in the face of competition from commercial rivals and online services such as YouTube and Netflix, according to Ofcom.

The media regulator found that young people were increasingly turning away from the corporation's TV and radio output and the BBC was "not currently doing enough, quickly enough" to turn this around.

The research found that 16- to 34-year-olds spend about an hour and 20 minutes a day consuming BBC content – around half the average time across all age groups.

One in eight young Britons currently consume no BBC content at all in a given week – a worrying figure given the corporation's current funding model is based on convincing the vast majority of the public to pay £150.50 a year for a TV licence.

Ofcom said that while some of this was a result of changing viewing habits due to the internet, commercial radio stations and ITV were doing comparatively better than the BBC at attracting younger audiences.

"The decline in use among young people is a concern, not only because this audience group is less well served but because young people are critical for the future relevance and success of the BBC," Ofcom said in its first annual report on the BBC's performance.

The regulator also pointed out that the online-only BBC Three channel was reaching only about 8% of people in the 16-34 category each week, despite being specifically designed to appeal to younger viewers.

"Young people also want the BBC to take more risks and felt it was too reliant on conventional formats,"

The BBC director general, Tony Hall, has issued increasingly strident warnings about the threat posed to the corporation by streaming companies while floating the idea of reinstating the licence fee for over-75s.

"Young people spend more time with the BBC than any other media provider including YouTube, Spotify or Netflix. But it's an incredibly competitive market and young people have far more choice today than previous generations.

The BBC was generally delivering on its remit, and audiences rated the BBC's news output particularly highly for providing trustworthy and reliable news and current affairs material on TV, radio and online.