Lexical complexity prediction (LCP) is the task of predicting how difficult words in a text are on a continuous scale. It plays a vital role in simplifying or annotating complex words to assist readers. To study lexical complexity in Japanese, we construct the first Japanese LCP dataset. Our dataset provides separate complexity scores for Chinese/Korean annotators and others to address the readers’ L1-specific needs. In the analysis, we show that the L1 background affects complexity and deserves special consideration. In the baseline experiment, we demonstrate the effectiveness of our BERT-based system for Japanese LCP.