ABSTRACT

Mental disorders in pregnant and lactating mothers have a negative impact on the welfare of mothers and children. However, this issue still has low attention in Indonesia. This is indicated by the high prevalence of mental disorders and is exacerbated by the rate of misdiagnosis and treatment of mental health patients in Surabaya, one of the regions in Indonesia, which is 84%. The primary treatment methods carried out by experts have various limitations, especially in cultural bias and perspective due to stigma. This makes medical experts try new alternatives by utilizing social media data as a new perspective from mental health patients. This study aims to identify risk factors for maternal depression (pregnant and lactating mothers) using the integration of the results of the Latent Dirichlet Allocation (LDA) topic modeling aspect extraction with DistilBERT multi-aspect sentiment analysis. The dataset used consists of 21739 Indonesian language posts from the Facebook maternal community forum collected using web scraping techniques. The analysis process includes text preprocessing, aspect extraction with LDA, pre-labeling with TextBlob, DistilBERT multi-aspect classification, Selection of the best LDA topic modeling architecture, identification of themes in the results of aspect extraction related to maternal depression risk factors, and identification of risk factors (themes) that are relevant to the results of sentiment prediction. The results show that the risk factors that are widely expressed in the posts of mothers who are members of the Facebook maternal community are Fetal Weight, Social Support, Drug Effects on Babies, Child Health, Physical Symptoms of Pregnancy, Type of Labor, Menstrual Cycle, Labor Expectations, Family Dysfunction, and Diagnosis of Fetal/Placental Abnormalities in Pregnancy Examination Results. However, after validation, only Fetal Weight, Social Support, and Diagnosis of Fetal/Placental Abnormalities in Pregnancy Examination Results were key factors in maternal depression. In the selection of the best LDA architecture, 4 architectures were used with different combinations of alpha, beta, and number of topics. The selection results showed that the architecture with alpha 0.1, beta 0.01, and number of topics 9 achieved the highest F1-Score reaching 92.55% on the positive label when the aspect extraction results were used on ABSA DistilBERT. This study highlights two challenges, namely unbalanced data distribution due to pre-labeling

and poor translation results that can affect the performance of the model, both classification and topics. These findings provide an important contribution in understanding which risk factors affect pregnant or breastfeeding mothers, as well as being the basis for designing a more targeted maternal depression treatment strategy.

.***Keywords***: *Architecture, Aspect Extraction, Breastfeeding, DistilBERT multi-aspect, LDA, Maternal Depression, Pregnant Women, Risk Factors.*