

## **Abstract**

Happiness index is a value that is able to show level of people happiness in a particular area. People opinion is one of thing that can be used as an input for happiness index measurement. Social media is a trend of technology that keep increasing in the last few years. With the increase of users, more users share their opinions via social media. So, social media data can be used to measure happiness index. But to measure happiness index, it needs a lot of data, so it needs a system of collect data from social media. Search engine is one of the way to collect data but because the searching domain is specific, using keyword-based search engine is considered not efficient enough so domain-specific search engine is needed.

Use of ontology in searching can handle that problem. Ontology is one of the way to represent knowledge, starting with happiness index domain it can be built to an ontology that can represent happiness index. According to that idea, combined paradigm is chosen and it will be constructed using Noy McGuinness methodology. In searching process, a method from Ehrig and Maedche is chosen because the data characteristic is similar with data collected from social media. Implementing ontology on search engine is expected to increase searching accuracy if compared to keyword-based search engine so data collecting to measure happiness index can be done more efficiently.

In this research, testing will be performed to measure performance of ontological-search engine that use Ehrig computation and ontology-using classification. Based on the result, it shows that the result is satisfying. Filtering functionality achieves 86% of F1-Measure score to determine the relevance of data to ontology and result of 84% and 100% of comparing ontological search engine and standard search engine. For classification, it achieves 81% accuracy score, quite good score for a proposed method.

Keyword: happiness index, social media, ontology, search engine, classification