

A Study of the Competition relationship among Departments by Mining Association Rules between Departments in Examinee Future Intention Databases of the College Entrance Examination

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Abstract

As the dropping of birth rate and the continuous increasing of college enrolled students, the higher education market had become saturated in Taiwan. Every college is confronting the most enormous pressure on recruiting the students. In the saturated market, Market Orientation has become Customer-Oriented or Competitor-Oriented. So that, every college should not only understand its product position, but also its major competitors from the view of customers. However, because of short of appropriate method to understand, school authorities usually can't do their best on their target market. Examinee Future Intention Databases of National college and university entrance examinations (EFIDof NCEE) are similar to transaction databases. So that, association rule mining could be used in EFIDofNCEE as in transaction databases. The aim of this paper is to develop a system that can help them to understand their supply and demand, product positions and major competitors from the view of customers by mining association rules between departments in ECD beyond the psychological factors. This paper carried out the aim by MSbinary algorithm which is modified from IHP algorithm proposed by Holt and Chung (2002). In this paper, the major competitors of each department had progressively sieved out by MSbinary algorithm from 87,059 freshmen transactions in 2003 EFIDofNCEE. We find that the allowance of music and physical education is too much. There are 47 departments had no major competitors. The support of some departments is influenced by their enrolled mode and school geographical location. We analyzed National Taiwan University (NTU), National United University (NUU), National Ilan University (NIU) and the department of Business Management, NUU (BMNUU) as examples. We found the major competitor of NUU is National Tsing-Hua University, NUU is NIU each other and BMNUU is the department of Finance, NUU.

Keywords : Data Mining, Association Rule, College Entrance Exam, Target Market