Integration of Rough Set and Affinity Set for Data Mining on the Life-Cycle and Sales of Bio-Product

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ABSTRACT

In this study, we used Affinity/Guanxi Data Mining the most attributes of the sales at the three stages on the life cycle of Bio product. Since Affinity/Guanxi Set was proposed by Chen and Larbani in 2005, that was just for development. Affinity/Guanxi Set is a time-dependent set theory. First, we interviewed the 10 Bio companies in Taiwan and found the attributes of influencing the sales. In order to focus on the bio product, we choose the most Bio-Product in Taiwan- medicine to be our case. The raw of Bio medicine product in Taiwan is almost imported by Europe and America, R&D is less. So we delete the Development stage and Introduce stage and we just use Growth, Maturity and Decline stage to set the model. our data (include the 9 attributes and sales data) was from a pharmaceutical company in Taipei. Second, we defined the three stages (on the Product Life Cycle by the error of last year sales and this year sales. After separating the data, we used the Rough Set (RS) to find the rules of the three stages. Finally, we must calculate the Hit Rates of the rules and find the k-core. Therefore, we discussed relation between the most attributes and Product Life Cycle. As the result, we find Affinity Set is better method than Rough Set of choosing rules. In the part of Bio medicine product, we got the most important factors on the Bio-Product Life Cycle efficiently. The pharmaceutical company can be referenced by this study.

Keywords : Affinity/Guanxi Set (AS) ; Data Mining ; Product Life Cycle ; Bio medicine product ; Rough Set (RS) ; k-core

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