



Customer Segmentation Using Multiple Instance Clustering and Purchasing Behaviors

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Abstract

On-line companies usually maintain complex information systems for capturing records about Customer Purchasing Behaviors (CPBs) in a cost-effective manner. Building prediction models from this data is considered a crucial step of most Decision Support Systems used in business informatics. Segmentation of similar CPB is an example of such an analysis. However, existing methods do not consider a strategy for quantifying the interactions between customers taking into account all entities involved in the problem. To tackle this issue, we propose a customer segmentation approach based on their CPB profile and multiple instance clustering. More specifically, we model each customer as an ordered bag comprised of instances, where each instance represents a transaction (order). Internal measures and modularity are adopted to evaluate the resultant segmentation, thus supporting the reliability of our model in business marketing analysis.

Keywords: *Multiple instance clustering, Customer Purchasing Behaviors, Decision Support Systems*

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