

JUVENILE DELINQUENCY RECOMMENDED COURT ORDER IMPROVEMENT THROUGH RBR AND CBR TECHNIQUES

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ABSTRACT

The complexity of recommending court orders for each juvenile delinquencies case is due to the need to make decision based on past experiences, precedence cases and legal statutes. Current practice demand probation officers to look into their past experiences before they are able to search manually for similar precedence court cases. The quest for fairness in the recommendation process often leads to backlog in juvenile delinquency trials. However, this problem can be overcome through the introduction of RBR and CBR techniques. This paper aims to discuss the application of both techniques which are embedded in the Juvenile Delinquency Recommendation (JDRES) model. The similarities between the results from the model and the expert's selection indicate that JDRES model can be applied in the automation of the legal reasoning procedure.

Keywords: juvenile delinquency case; RBR and CBR techniques; precedence case; legal statutes; automation of legal reasoning procedure.

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1. INTRODUCTION

In the legal domain, probation officers must refer and analyze each judicial precedent cases before recommending court decisions for new cases. Precedent cases are prior decisions of previous juvenile delinquency cases committed by the same or different juvenile with the same reason behind the judgment made. Assessing and analyzing precedent cases ensure that each case is treated fairly wherever the case is heard. However, in Malaysia the generality aspect in the legal domain, which are the different level of seriousness of each juvenile cases and the number of offences committed by juveniles in different states, are acceptable by the juvenile court. In this regard, the delinquent is bound to abide by the decision pronounced by the court and need to understand how the court has dealt with their case and reached its decision [1]. Without a reliable technique to accumulate decided precedent cases incrementally and access these cases efficiently, legal officers need more time to complete their investigation. Therefore, there is a need for effective techniques that will ensure easy access to the precedent cases to warrant justice in the decision making process. In this world, where majority of the population are IT literate, people are demanding for the appropriate solution to solve critical situations in a complex system.

This paper discusses the application of case based technique and rule based technique to the judicial system architecture that permits probation officers to practice impartiality in their treatment towards each delinquent juveniles cases. The paper is organized as follows; Section 2 describes the research background to this study. Section 3 discussed the methodology used to complete the study, Section 4 presents the results and discussion of the study and lastly Section 5 defines the future work of the study.

2. RESEARCH BACKGROUND

Findings from the previous studies show similar demographic information amongst juvenile delinquents. For example, in [2] found many Malay juveniles whose family are from the lower income group and with relatively low educational level would have a poor communication level with the children. Moreover, it is expected that family with a limited educational, economical and institutional resources perform inappropriate parenting skills [3] that lead into less attention on these juveniles. These situations often produced juveniles who are prone to

engage in conduct disorder. According to [1], youngsters in the range of 15 to 17 years old are found to be most difficult to engage in an improved behavior. But, compared to adults, they are more treatable which indicate a rehabilitation-oriented juvenile is most appropriate. In addition, a suitable treatments or corrections proposed must have a personal relevance to these teenagers for them to accept it. Females are more emotional that requires mental and family support while males, being a masculine type, require anger management courses, empathy and soft skills programs. All these issues provide challenges to the probation officers, families and society. Early work by [3] on juvenile delinquency in northern Malaysia generate a Juvenile Legal Assistance, a rule-based model to assist new probation officers in defining the related rules for specific offenses committed by juveniles. An extension work on JDRes model included both the RBR and CBR techniques added the consistency and flexibility when recommending court orders for new juvenile cases [4].

3. METHODOLOGY

The methodology for this study consists of six activities which are data collection, knowledge acquisition, analysis, development of the case based legal reasoning model and lastly the validation of the model. Secondary data collection was done by reviewing Juvenile Registration Logbook and Juvenile Probation Reports. Decision was made to extract completed past juvenile cases only as this is accordance to the judicial approach – the doctrine of Stare Decisis which require courts to refer to past cases with the same reason behind the judgment made, as guidance before deciding on new cases. The facts of a case determine the new case's relationship with the precedent cases. The knowledge acquisition is interview sessions with the probation officers. The purpose of conducting the interview is to understand and identify the complete procedure for processing juvenile cases. The interview sessions gave an insight view of the process delivering recommended orders based on the doctrine of judicial precedent established under the law. The sessions also aimed to stimulate information that is unattainable in the literature. The analysis activities focused on analyzing the three documents and interview transcripts. Two techniques used were decision tree for determining the relationship between offences and related court orders, and content analysis for understanding decided precedent cases. These techniques contributed to the judicial process,

which is important in defining the relationship between personal, home and parental variables with committed offences variables.

4. RESULTS AND DISCUSSION

Decision making process is crucial in legal domain however difficult to apply in the complex systems. To solve the problem of extracting similar precedent cases, the model analyzed each precedent case, juvenile's background, guardian's background and offence information. By using two distance measuring techniques Hamming and Manhattan technique, similar precedent cases were prioritized. This is followed by applying kNN classification to classify the selected decided precedent cases. The results of similarity percentages for all five commonly committed offences are shown in Figure 1. However, for two offences which achieved only 50% similarity, the JDRES model and expert selected different penalties. This is explain by the generality aspect existed in the law domain. In this domain, the penalties prescribed for all offences in Section 91 and Section 93 in the Child Act 2001 are applicable to all type of offences without specifying to which it refers to. This generality open the room for the experts to exercise their own discretionary power based on their experiences when recommending court orders and previous decisions in the decided precedent cases. The significance of this research lies in the ability to effectively extract precedent cases and related cases when recommending court orders for juvenile delinquencies cases. The capability of the model to consistently extract most similar decided precedent cases adds credential to the reasoning made by probation officers when recommending court decisions for a new case. This is the contribution of JDRES Model in ensuring uniformity of the order given in the juvenile court.

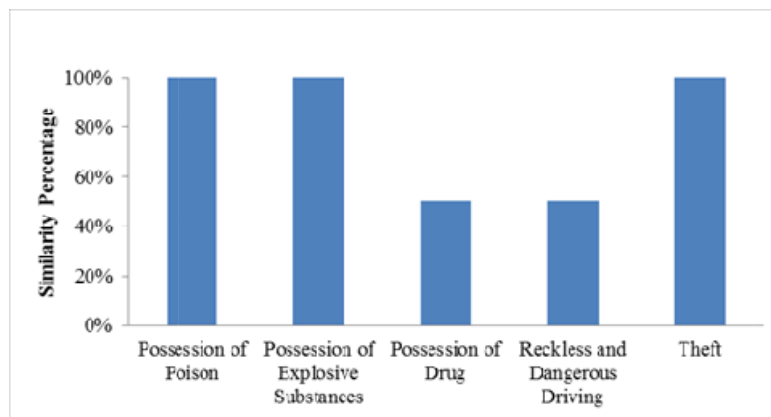


Fig.1. Similarity percentages between JDRES model and expert selection

5. CONCLUSION

The strength of JDRES Model lies in its ability to correctly define and extract 60% of the decided precedent cases thus able to assist in providing fairness and certainty in the juvenile court. The factor that contributed to the lower accuracy level is the generality aspect in the legal domain, which are the different level of seriousness for different states in juvenile cases and the number of offences committed by juveniles in different states in Malaysia. Therefore, future work on the upgrading of this model will look into optimization technique for the selected precedent cases. It is hoped that future study will highlight the most similar and dissimilar characteristics between new cases and selected precedent cases

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