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Behavioural case linkage:  
Linking residential burglary offences in New Zealand

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## Abstract

Thesis title: Behavioural case linkage: Linking residential burglary offences in New Zealand

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This thesis aims to replicate and extend prior research on behavioural case linkage from the United Kingdom and Finland, using a sample of residential burglaries committed in New Zealand. Eighty-two solved residential burglaries, committed by 47 serial burglary offenders in Napier, New Zealand, are sampled from the New Zealand Police National Intelligence Application (NIA) database. Prior research using behavioural case linkage for residential burglary has found support for the usefulness of crime scene behaviours, inter-crime distance and temporal proximity to accurately predict offences committed by the same offender. Inter-crime distance has consistently shown higher degrees of accuracy in determining whether two crimes are linked to the same offender. Using the methodology followed by previous researchers, 41 linked crime pairs (two offences committed by the same offender) and 41 unlinked crime pairs (two offences committed by different offenders) are created. Three behavioural domains of crime scene behaviours, inter-crime distance and temporal proximity of offences committed by the same offender are compared with offences committed by different offenders. Logistic regression analysis and receiver operating curve (ROC) analysis is used to determine the ability of the three behavioural domains to accurately predict whether offences are linked or not. Similar to prior studies, all three behavioural domains showed moderate predictive ability in reliably determining the linked status of crime pairs. Contrary to prior studies inter-crime distance was found to be the least accurate predictor in

determining the linked status of crime pairs, with an optimal model combining temporal proximity with crime scene behaviours showing the greatest degree in determining whether crimes were committed by the same offender or not. These results provide support for the use of behavioural case linkage for linking residential burglary offences in New Zealand while caution is required when relying on inter-crime distance alone as a linking feature within small geographic areas.

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