

Advanced analytics for
child support programs
From reactive enforcement to
proactive prevention — Part II



In Part I of this article, we provided some background on the rise of analytics, discussed the budgetary challenges facing states, and talked about the internal and external data required to build a powerful predictive model. In this article we will continue the journey by discussing the basics of child support predictive modeling and how analytics can be leveraged in child support enforcement. We will also outline ways advanced analytics can play a critical role in helping child support agencies enhance the collections process, improve revenue collection, increase the likelihood of meeting performance-based incentive funding, proactively identify the non-custodial parents (NCPs) most likely to go into arrears in the future, and help mitigate that arrearage accrual.

Child support modeling basics

Predictive analytics can present a powerful opportunity for child support service agencies to accomplish more with smaller budgets and limited resources. A classic example of child support predictive modeling is to combine internal NCP/case characteristics with external third party data to help calculate a numeric score that segments NCPs along such predicted “target variables” as the likelihood of an NCP’s beginning to pay court mandated child support, the likelihood of an NCP’s becoming in arrears at some point in the future, or the likelihood that 80% or more of the NCP’s accrued amount will be paid in the coming three months. Which target variable (or variables) to estimate, and how, are model design issues that experienced statisticians and child support domain experienced practitioners — the architects building on the foundation of good data — work out in advance in consultation with the client.

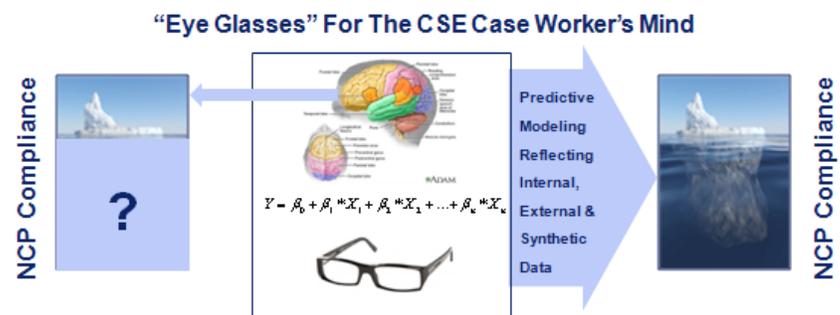
Once the basic design has been established, many dozens — often hundreds — of variables can be created and analyzed using a variety of traditional and modern statistical techniques. The modeling process results in a mathematical equation, typically containing 30 to 50 variables, that is used to predict the likelihood of a target variable happening (e.g., the likelihood of an NCP becoming in arrears at some point in the future).

Leveraging advanced analytics in CSE

Albert Einstein once wrote that “the whole of science is a refinement of everyday thinking.” This is certainly true of predictive analytics. When people make decisions, they typically use their prior experience and domain knowledge to combine various pieces of information to help make predictions or estimate unknown quantities as effectively as they can. In other words, they informally “build predictive models” in their heads. The problem is that we

may be surprisingly poor at doing this. In the past decades psychologists have uncovered dozens of mental rules of thumb that lead to biased thinking. To borrow a phrase from a well known behavioral economist, these mental biases make humans “predictably irrational.”

Therefore just as people wear eyeglasses to correct for blurry vision, forward-thinking businesses and government agencies can adopt predictive models to correct for mental biases. In other words, predictive models can be thought of as decision-support “eye glasses” for the child support case worker’s mind.



An important implication of this analogy is that predictive models are no more meant to replace child support workers than eyeglasses are meant to replace automobile drivers with myopic vision. The significant decisions rest with the case workers. Author Michael Lewis’ *Moneyball*, in describing how the Oakland A’s manager Billy Beane used advanced analytics to benefit from an inefficient market for talent, has become a classic account of how advanced analytics can benefit organizations by compensating for the limitations of experienced judgment (in this case, that of the baseball scouts). In their review of *Moneyball*, the behavioral economists Cass Sunstein and Richard Thaler wrote that “the problem is not that baseball professionals are stupid; it is that they are human. Like most people, including experts, they tend to rely on simple rules of thumb, on traditions, on habits, on what other experts seem to believe.”

Predictive modeling and advanced analytics can allow forward thinking child support agencies to write their own “Moneyball” stories. Predictive models are able to weigh 40 or 50 predictive dimensions, not merely 4 or 5; they are able to do so economically, carefully/correctly, consistently, and fairly; and (not reliant on blood sugar) arrive at consistent decisions before and after lunchtime. Analytics can allow the case worker to see the entire iceberg — and see it properly — not just what is above the surface.

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Bringing the models to life

Ultimately, bringing the predictive model to life typically requires the buy-in of state child support agency leadership and the front line case workers at the forefront of the child support efforts. To the extent case workers learn to leverage and embrace the power of advanced analytics, the following benefits are possible:

- **Enhanced collections process and workforce allocation**

State agencies can leverage the outcomes of the predictive models to help match case worker skill sets with the most appropriate cases. For example, the more difficult cases can be assigned to case workers with greater experience and/or specific skills, while the less complex are left to less experienced workers. For both small and large child support offices, the concept of straight-through processing can be used for certain cases, in order to allow case workers to focus their attention on the cases with the most significant potential for collection results. For cases in which the likelihood to pay appears to be very low, case workers can intervene early by establishing a non financial obligation or by choosing to manually modify the support obligation amount according to state guidelines.

- **Improved collections**

Advanced analytics can help case workers more effectively understand what type of NCP is likely to make a voluntary payment on arrears, in addition to identifying which NCP is likely to become delinquent in the future. This allows for more tailored and proactive case worker efforts segmented by NCP characteristics. By focusing case worker efforts on specific actions likely to encourage the NCP with a higher probability of paying to consistently pay, or those who can be converted from an intermittent payer to a regular payer, child support agencies can avoid spending valuable resource time and effort taking actions to which the NCP is unlikely to respond. Advanced analytics can also help caseworkers identify those NCPs who cannot or will not voluntarily pay child support, and develop effective early intervention activities in setting and enforcing orders.

- **Increased likelihood of meeting performance based incentive funding**

State agencies depend on federally funded incentives to support existing programs. The incentives are based on various performance metrics that must be met for state agencies to receive performance based incentives. As state agencies are measured against other state

agencies, and are competing against each other for a finite pool of federally funded incentives, advanced analytics represents a critical differentiator in helping to achieve effective performance metrics.

- **Proactive identification and mitigation**

Advanced analytics helps to identify NCPs with the greater likelihood of going into arrears in the future. By integrating the early warning signs from the predictive models with outreach programs such as education training, job placement, automated techniques such as outbound calling, texting, or emailing, case workers can help to prevent child support arrears before they happen.

- **Improved outcomes for children**

The traditional focus of the social services programs has typically been to monitor the outcome for that specific program. Since these programs often serve the same family unit, the outcomes in one program can affect the need for and outcomes in other social services programs. States can use predictive analytics to help develop a tailored focus on parents to encourage parental responsibility for the well being of children, with the result that more children can receive more consistent and acceptable support. This in turn may result in these children becoming less reliant on public assistance programs now and in future, leading to lower overall social services spending and to a more productive, self-sufficient population.

Conclusion

In sum, advanced analytics and predictive modeling can be a more effective way for child support agencies to identify the NCP, assign the case worker, and take the required action at the specified/desired time. Benjamin Disraeli once said: "What we anticipate seldom occurs; what we least expect generally happens." With predictive modeling, child support agencies will be in a position to more efficiently anticipate which NCPs may become more challenging in the future and be more prepared to take immediate preventative action. With early intervention, creative outreach programs, educational material, and proactive touch points, the sky can be the limit in terms of being able to positively impact the lives of the parents and children who depend upon child support payments across the United States.

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