



How Arity and Clutch partnered to reduce loss and improve insurance pricing

A study on measuring risk of car subscription drivers

KEY FINDINGS

- : Arity PreQualSM showed that the distribution of subscription driver risk looks similar to that of personal lines auto insurance risk.
- : Clutch's actual claims data reflected how Arity's predictive PreQual model distinguished driver risk.
- : Arity PreQual identifies the potential to reduce total loss by 12 percent.

THE RESULT

- : Clutch has helped car subscription providers achieve 20 percent reduction in premiums since incorporating Arity PreQual into their risk management technology.

Challenge: New ideas carry unknown risks

The idea of taking a ride in a stranger's car was uncommon until just a few years ago when shared mobility started to boom. While rapid adoption has increased options for consumers to get around, it's created a challenge for those who need to evaluate the risk of new models where people use cars in different ways than before. The vehicle subscription model is an alternative to owning or leasing a vehicle, where the consumer is provided a commercially-owned vehicle on a flexible basis. Without historical data of this specific model, insurers looked to commercial rating structures as a proxy. As commercial drivers inherently carry more risk given the nature of their trips, subscription providers can end up with prohibitively high insurance costs.

Approach: Use a baseline of personal lines auto drivers to measure the risk of subscription drivers

Both Clutch and Arity thought the risk of subscription drivers could be similar to that of traditional personal lines drivers. They agreed to work together to see how they could test this.

To that end, Arity used its proprietary model, Arity PreQualSM, to score a sample set of drivers who had subscribed to Clutch's Atlanta "Lab," a consumer facing subscription offering exclusively in Atlanta, Georgia. The sample set included 1,456 drivers across 228,000 driving days.

Arity PreQual ranks drivers from safest to riskiest, based on the expected value of relative insurance risk for a driver. Leveraging data provided by Allstate Insurance, Arity developed PreQual by analyzing the statistical relationship between a driver's profile and expected loss. The PreQual model provides a score based on information collected when individuals apply to drive, allowing businesses to proactively manage risk before onboarding begins. PreQual scores range from 100-900 where higher scores indicate better, lower risk drivers.

Arity provided an analysis that compares subscription drivers from Clutch's Atlanta Lab against the baseline of personal lines auto drivers. The analysis provides insights into their PreQual scores' distributions and relationship to losses. The findings indicate key similarities between the risk profile of Clutch's subscription drivers and personal lines auto drivers.

*"We see these findings as a first step and catalyst to connect more mobility providers with insurance carriers and be confident that their drivers will be safe and good custodians of vehicles."
- Grady Irely, Senior VP, Arity Data Science*

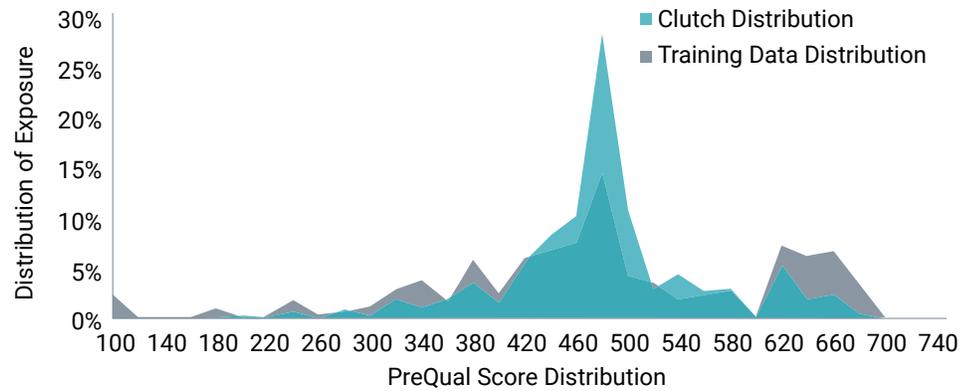
See page 2 for details of the analysis.

KEY FINDING

Subscription drivers from Clutch's Atlanta Lab showed a similar distribution of risk compared to the baseline of personal lines auto drivers.

The majority of Clutch's drivers scored between 401 and 600, which suggests that their subscribers already concentrated in moderate risk profiles. In fact, 78.2 percent of Clutch's PreQual scores fell within the range of 401 to 600 compared to 38.6 percent for the personal lines auto population that was used to train the model. The relationship indicates that drivers who have self-selected into Clutch's car subscription program tend to concentrate at moderate risk levels in a manner similar to personal lines auto.

Figure 1: PreQual Score Distribution



Distribution of PreQual scores of Clutch's drivers compared to the PreQual scores of Arity's baseline of personal lines auto drivers.

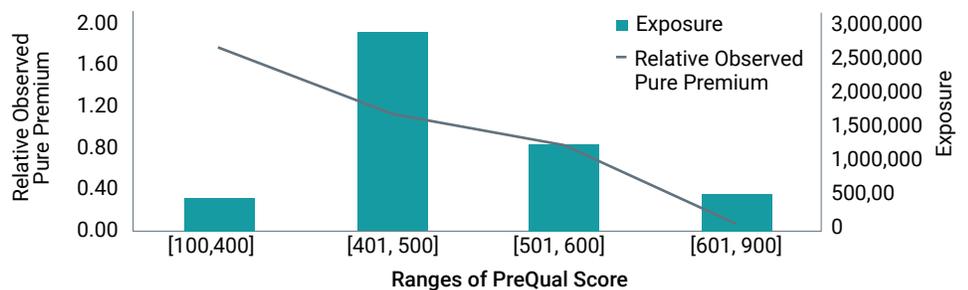
KEY FINDING

Subscription drivers of a better risk profile incur less loss¹, in a trend similar to personal lines auto drivers.

The bars in the graph below represent Clutch's exposure in each range of PreQual scores. Exposure in this case is defined as the number of hours that subscribers had Clutch vehicles. For example, subscribers with scores between 401 to 500 had access to Clutch vehicles for a total of 2.8 million hours.

The line in the graph represents relative observed pure premium. Pure premium is defined as observed losses divided by exposure – in this case, incurred loss per hour the Clutch subscriber possessed a vehicle.

Figure 2: Relative Observed Pure Premium by PreQual Score



Relative observed pure premium (i.e. the line in the graph) is the ratio of the pure premium of a given PreQual range to the total pure premium of all subscribers. For example, subscribers with PreQual scores between 100 and 400 had an observed pure premium that was nearly 1.8 times the overall average pure premium across all subscribers. In contrast, subscribers with PreQual scores between 601 and 900 had a much lower observed pure premium.

¹ Based on observed claims from the sample set. Analysis on a larger sample size is required to ensure statistical significance though results are directionally consistent.

The trend of Clutch's lower-risk subscription drivers incurring less loss is noteworthy because PreQual was originally designed to differentiate drivers based on expected loss for personal lines auto. The similar correlations based on the dataset from Clutch's Atlanta Lab suggest that PreQual is an appropriate method to differentiate driver risk outside of personal lines auto insurance. This relationship merits further analysis as car subscriptions and other models of shared mobility continue to gain traction.

RESULT

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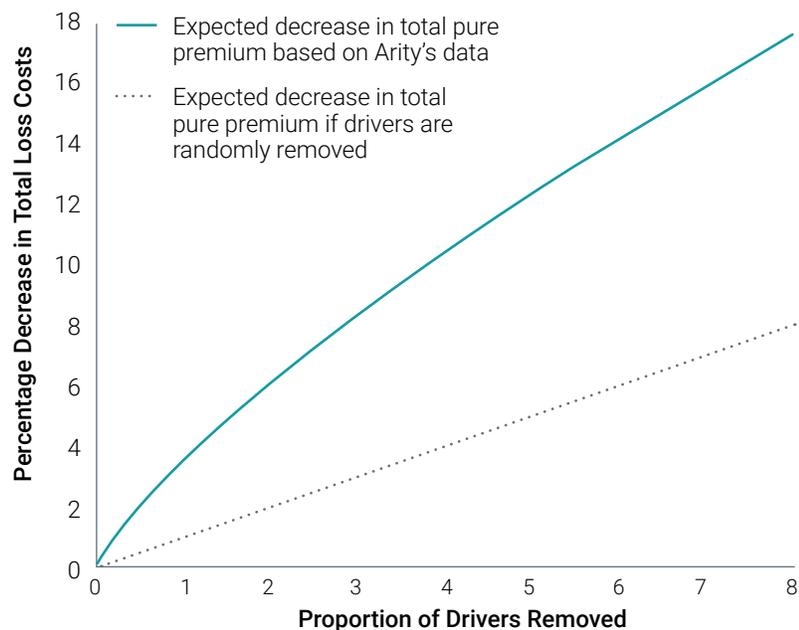
Since incorporating PreQual as a major input of their risk management technology, Clutch has helped their car subscription providers reduce premiums up to 20 percent year over year. Clutch also believes that Arity PreQual will be a useful risk management tool moving forward, supporting discussions with subscription providers (i.e., dealers, OEMs and others) and carriers to develop new insurance products designed specifically for subscription models.

LOOKING AHEAD

Arity is working with shared mobility companies and insurance carriers to control loss up front.

The figure below illustrates how the model can be applied moving forward to help shared mobility companies **reduce total loss by approximately 12 percent** up front by eliminating 5 percent of the riskiest drivers identified by PreQual scores.

Figure 3: PreQual High Risk Gains Curve



Arity is now working with more shared mobility companies and insurance carriers to use PreQual and telematics as a way to baseline the risk profiles of drivers in new mobility models. Together, they are working to design coverage tailored to the needs of car subscription and other kinds of shared mobility environments.

Interested in learning more?

Contact Jacob Reeb at sales@arity.com.

About Clutch Technologies

Clutch Technologies is the leader in consumer subscription software for the automotive industry. Clutch's Subscription Platform enables dealers and OEMs to serve the needs of many different consumers through its full suite of products which includes Service Pickup and Delivery, Extended Test Drive, On-demand Rental, Fractional Subscription, Single Vehicle Subscription and Multi-vehicle Subscription. Clutch is a wholly owned subsidiary of Cox Automotive. Learn more about Clutch at www.driveclutch.com.

About Arity

Arity is a mobility data and analytics company that provides data-driven solutions to companies invested in transportation to enable them to make mobility services smarter, safer, and more economical. Insurance companies, automobile OEMs, shared mobility companies, and governments turn to Arity to better understand driving behavior, manage risk, operate more safely, and ultimately increase their bottom line. The Arity Platform is built on nearly 80 billion miles of historical driving data, and with more than 12 million active telematics connections and over 8 years of data directly from cars. With global offices and a Chicago headquarters, Arity was founded by The Allstate Corporation and launched in 2016. Visit www.arity.com for more information.