**General Findings**:

Overall, 57% of sample drivers accepted coupons. Carry out & Take away is the highest accepted coupon with acceptance ratio of 74%, followed by cheaper restaurants (Restaurant (<20)) coupon (71%). Bar coupons have the lowest acceptance ratio (41%). Coupon Acceptance ratio is generally higher during hot weather. Coupon acceptance ratio is lower at low temperatures (30-degress) except for Carry out & Take away coupon types. Coupon expiration has the highest positive correlation with acceptance (13%). Cheaper restaurants coupons have higher likelihood of being accepted (84%) if the expiration is 1 day as compared to when expiration is 2 hours. Destination has the highest negative correlation with acceptance (-12%). When not driving to an Urgent Place, drivers have higher likelihood (79%) of accepting cheaper restaurant coupons as compared with other destinations (Home and Work).

**Bar Coupons Analysis**:

Overall, 41% of Bar coupons were accepted. Bar coupons are twice as likely to be accepted by drivers who go to bars more than 3 times a month (76%) than all others (37%). Rate of acceptance of Bar coupons by drivers who go to a bar more than once a month are highly likely (60%) to accept Bar coupons. Drivers who never go to bars are unlikely to accept Bar coupons (19%). Drivers between age 25 and 30 without kids in the car tend to accept Bar coupons at a high rate (71%). Bar coupons are less likely to be accepted (only 21%) when passengers are kids. Drivers who have children are less likely to accept (29%) Bar coupons. Drivers between ages 25 and 30 with friends in the car tend to accept Bar coupons at a high rate. Bar coupons are more likely to be accepted (55%) by Singles than by drivers with other marital statuses. Drivers with Some High School education have a very high tendency to accept Bar coupons (79%). Drivers who never Carry Away have a very low likelihood (18%) of accepting Bar coupons. Drivers who go to expensive restaurants (Restaurant20To50) 4 or more times are more likely to accept Bar coupons (63%) than all others. Rate of acceptance of Bar coupon by drivers who go to cheaper restaurants (Restaurant(<20)) more than 4 times a month and income is less than 50K is low (44%).

In general, we can hypothesize that Bar coupons are highly likely to be accepted by drivers who go to Bars more than once a month. Drivers who never go to Bars or go to bars less than once per year are less likely to accept Bar coupons.

**Some interesting insights**:

* Cheaper restaurant coupons are highly likely to be accepted (80%) when passengers are friends.
* Cheaper restaurant coupons are much less likely to be accepted (54%) when temperature is low (30-degrees) compared to when the temperatures are higher (55-degrees or 80-degrees)
* Carry out & Take away coupons are highly likely to be accepted (87%) at 2PM.
* Carry out & Take away coupons are more likely to be accepted by Widowed (85%) than by drivers’ other marital statuses. Widowed are highly unlikely to accept (21%) expensive restaurant coupons.
* Drivers with Some High School education have a very high tendency to accept Carry out & Take away coupons (94%).
* Drivers who go to bars more than 8 times are less likely to accept Carry out & Take away (56%) compared to all others.
* Drivers who never go to Coffee House have a very low likelihood (18%) of accepting Coffee House coupons.
* Drivers who never Carry Away have a very low likelihood of accepting cheaper restaurant coupons (21%).
* Drivers who never go to cheaper restaurants have a very high likelihood (86%) of accepting Carry out & Take away coupons.
* Drivers are less likely to accept cheaper restaurant coupons (33%) or Coffee House coupons (34%) if they must drive 25 minutes or more to redeem the coupon.

**Next Steps**:

Explore additional multi-variate covariances.

Link to Jupyter Notebook: <https://github.com/kt94582/Module-5>