**Analysis using R**

**A screenshot of a computer code

Description automatically generated**

result :

**A screenshot of a computer

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If you consider the significant variables we can observe that following two variables have an increasing effect on the risk factor

**Event : Lane Departure** (Lane departure increases the likelihood of accidents, collisions, or near-misses. When a truck unintentionally leaves its designated lane, it can collide with other vehicles, roadside barriers, or infrastructure, leading to property damage, injuries, or fatalities.)

**Model : Crane** (this analysis is also supported from the third graph)

**Anova**

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This indicates that both the choice of truck model and the city significantly impact the risk factor. The p-values for both "model" and "city" are highly significant (p < 0.001), suggesting a strong association with the risk factor.

When we dug deep into the interaction effects, we found the following.

**Synergy effect (**when the two variables add up to increase the risk factor) **:**

Peterbuilt – Homeland

Peterbuilt – bakesrfield

**Cancellation effect (**when the two variables add up to decrease the risk factor**):**

Kenowrth – Gilroy

Hino – Aptos

\*graphs required to support the above statements\*