What are declining and evergreen businesses in LA?

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In this report, I will use **Active Businesses** and **Business Closures since 2013** dataset from *Los Angeles City Data Portal (data.lacity.org)* to answer the following question.
What types of businesses experienced the greatest percentage of closures since 2013 and what types experienced the lowest?

Active Businesses lists all active businesses currently registered with the Office of Finance. **Business Closures since 2013** lists all businesses whose owner has notified the Office of Finance a cease of business. Both data sets are similar in structure, and main variables used in this report are *NAICS* and *PRIMARY NAICS DESCRIPTION*, NAICS stands for North American Industry Classification System which is a code classifying the type of business.

The main problem with the cleaning of data is that many business entities do not have a NAICS code. Although this problem is not significant with the **active businesses** dataset, only a quarter entities in the **business closures** dataset have NAICS codes. All business entities without NAICS codes are removed during preliminary cleaning for the purpose of this analysis.

The main method used in this report is "split-apply-combine" using the *dplyr* packages. After computing number of business entities by each business type in both datasets, the two datasets are joined and total number of business entities by type is computed. Percentage of business closures by type is subsequently computed by dividing number of closures by total number of business entities (open and closed) for each business type.

For business types with a small number of entities, only a few closures may increase the percentage of closures greatly. And this is even more problematic when many records of closures are removed due to lack of NAICS code, therefore only business type with over 100 entities (open plus closed) are included in the final result.

Table 1: Top 5 Business Types with greatest percentage of closures

Business type	total count of entities	% of closures
Medical Marijuana Collective	645	74.73
Taxi & limousine service	145	19.31
Tobacco & tobacco products	662	15.86
Apparel mfg.	6738	15.23
Luggage & leather goods stores	110	14.55

Table 2: Top 5 Business Types with lowest percentage of closures

Business type	total count of entities	% of closures
Fuel dealers	104	1.92
Lessors of real estate (including mini warehouses & self-storage units)	43104	3.04
Architectural services	1417	3.46
Offices of certified public accountants	998	3.51
Real estate property managers	4717	3.63

In conclusion, business types that are more vulnerable to closure often face significant changes in law (for example, legalization of recreational Marijuana or restriction of smoking in public) or industry (competition from Uber and improvement in public transportation). While types that are less vulnerable to closure are usually related to highly specialized professions(accountants, real estate agents and architects).