HDMA Housing Data

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```r
hdma_mi <- read_csv('https://sldr.netlify.app/data/hdma-mi-20.csv') %>%
  janitor::clean_names()
```

```r
hdma_mi <- hdma_mi %>%
  mutate(action_words = case_when(
        action_taken == 1 ~ "Loan Originated",
        action_taken == 2 ~ "Application approved but not accepted",
        action_taken == 3 ~ "Application Denied",
        action_taken == 4 ~ "Application Withdrawn by Applicant" ,
        action_taken == 5 ~ "File Closed for Incompleteness",
        action_taken == 6 ~ "Purchased Loan",
        action_taken == 7 ~ "Preapproval request denied",
        action_taken == 8 ~ "Preapproval request approvedbut not accepted"))
```

```r
hdma_mi <- hdma_mi %>%
  mutate(denial_reason_1 = case_when(
    denial_reason_1 == 1 ~ "Debt-to-income ratio",
    denial_reason_1 == 2 ~ "Employment History",
    denial_reason_1 == 3 ~ "Credit History",
    denial_reason_1 == 4 ~ "Collateral",
    denial_reason_1 == 5 ~ "Insufficient Cash",
    denial_reason_1 == 6 ~ "Unverifiable information",
    denial_reason_1 == 7 ~ "Credit Application incomplete",
    denial_reason_1 == 8 ~ "Mortgage Insurance Denied",
    denial_reason_1 == 9 ~ "Other",
    denial_reason_1 == 10 ~ "N/A"))
```

```r
hdma_mi <- hdma_mi %>%
  filter(denial_reason_1 %in% c("Debt-to-income ratio",
                                "Employment History",
                                "Credit History",
                                "Collateral",
                                "Insufficient Cash",
                                "Unverifiable information",
                                "Credit Application incomplete",
                                "Mortgage Insurance Denied",
                                "Other"))
```

```r
gf_percentsh(~denial_reason_1 | ~derived_race, data = hdma_mi, size = 8, fill = ~derived_race) %>%
  gf_labs( y = "Denial Reason",
           x = "Percent") %>%
  gf_theme(scale_fill_discrete('Derived Race')) +
  facet_wrap(~derived_race)
```
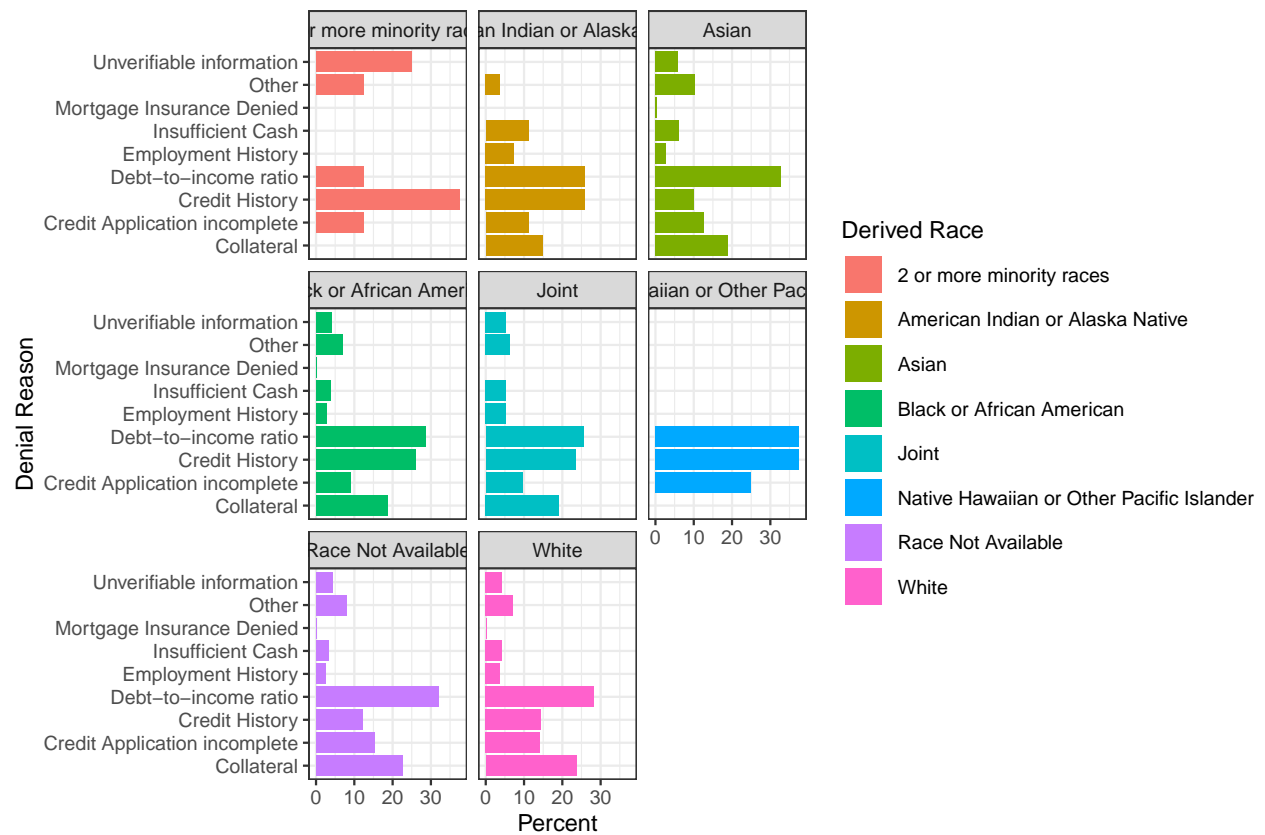
What we can see from these graphs is that the most common reasons for denial is debt-to-income ratio, credit history, and collateral. This seems to be the theme across all of the derived races.