

# Analyzing interest transition in movies genre over different age-group

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## ABSTRACT

Nowadays, the most common and popular entertainment resource movies consider as means of social and individual transformation. People with different age-group, educational and social-economic background perceives information differently from same movies. Common assumption is people with the same age-group tends to have the same behavior, feelings, and interests. This study focuses on what kind of movies are popular in different age group which helps to determine their conduct. This study also focuses on human interest development in movies genre over the passage of time helps to realize transition phase in human development.

## KEYWORDS

movies, genre, age-group, ratings, cluster.

## 1 Introduction:

Throughout the course of history many leaders have used the power and reach of cinema to propagate their propaganda. This clearly shows that cinema plays a vital role in altering the behaviors of people. Its clear examples can be found in the propaganda films during different wars. We can see Hitler making movies in World War II. USA can be seen producing Anti-Soviet movies in the 80s and 90s. Nowadays, hundreds of millions of people watch a movie at home, or the big screen in a commercial cinema to get entertain.

Movies can affect individual and society in both good and bad ways. Movies can inspire individuals, help the economy to grow, and expand knowledge. Movies can change the individual to be a completely different person, so not only the big movies studios must be very careful of what they are showing to the people but also the society needs to observe what people around them are watching. For-example if a person is watching a crime-thriller movies, it is possible that he perceives it in a worse way. On the other hand, if a student is interest in watching science-fiction movies, there are high chances that he inspires and want to become a doctor, scientist, or engineer.

Scientific studies show how human mind learn, mature, and adapt from infancy to adulthood to elderly phases of life. While every person is a little bit different, human development tends to follow a remarkably predictable pattern. This development can be realized in his choices and behavior. This study focuses on analyzing human interest development in movies genre over the passage of time. Common assumption is people with the same age-group tends to have the same behavior, feelings, and interests. We will analyze this assumption based on movies genre watch by the group of people of same age. We will try to find co-relation between the age group and the genre of movie, which might help in explaining behavior and thoughts felt by that age group.

## 2 Background:

Tina Kubrak [1] focuses on behavioral changes after watching the movies in one's life. The study shows after watching the movie about elderly, undergraduate students' negative attitudes towards elderly people got worse, while postgraduate students' assessments, on the contrary, changed for the better. According to T. Kashani [2] films are expected to change attitudes, form beliefs, and influence opinions including towards topical social issues. Harris R. [3] and Bryant et, al. [4] focuses on the influence of mass media on cognition, emotion, and behavior. Baran S.B et, al. [5] shows in their study and experiment that humanistically oriented movies can increase children desire to understand and help others also improve skills of children in communicating with fellows. Valkenburg P.M et, al. [6] study reveals that Dramatic films taught teenagers about social interaction with the opposite sex and adults, had a positive impact on their self-concept.

## 3 Methodology:

In this section, we will explain the dataset, pre-processing and clustering techniques used on the dataset to analyze our key findings.

### 3.1 Dataset:

We have obtained two IMDB datasets [1] from Kaggle i.e., movies.csv and rating.csv. Collectively, we will be analyzing around 170k+ rows of data. Movies have different attributes such as Year, Genre, Country, Language, Title, Budget etc. Whereas ratings have attributes such as Average Rating, Total Votes, Rating by different age groups etc. The dataset obtained has the age groups defined as 0-18, 18-30, 30- 45 and 45+ whereas movie genres are drama, comedy, action, adventure, fiction, romantic etc. and their combination as group.

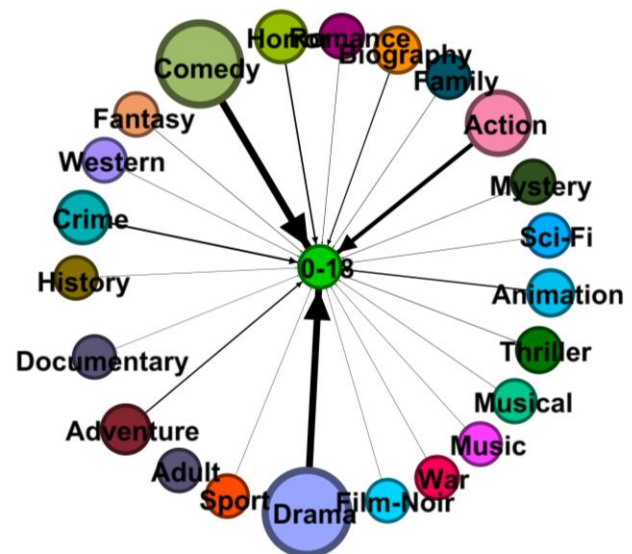
### 3.2 Preprocessing:

We have written two scripts in python to preprocess the data. The missing values are ignored, genres of movies are normalized. Only necessary attributes are picked from dataset. The nodes csv file is generated by one of them using movies dataset. Whereas the edges csv file is generated by the second script which uses both movies and ratings dataset to generate edges between the age-groups and movie ratings.

### 3.3 Clustering:

We will perform one of the clustering algorithms such as Girvan Newman or Markov cluster, to cluster the nodes by their attributes i.e., movies genre, age group etc. We'll cluster together the movies of same genre to get the overall response of different age-groups to that category of movies.

The following image shows the relation between an age-group of 0-18 users and the genres of movies. Here, the node size represents the number of movies in that genre and the width of edge represents the user-reviews. It can be clearly seen that people falling in age-group 18 have strong connection with Comedy, Drama and Action movies, while they are not permitted to watch adult movies, there is not connection between those nodes.



### 3.4 Node and Network Centrality Analysis:

We will calculate both the network and node-based centralities such as degree distribution analysis, centrality analysis, page rank analysis, density analysis and path analysis etc. We can perform these analysis and others more that we might learn as the course progresses using timestamps also. This can help us find the change in relations or likeness or dis-likeness over a course of time. We can visualize the trend over the period using Gephi. This analysis can also help us predict the popularity of an upcoming movie of a certain genre in different groups

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