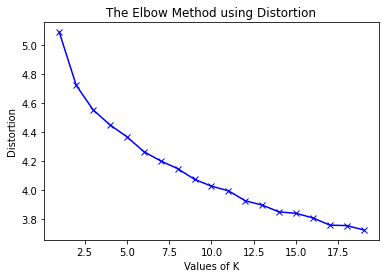
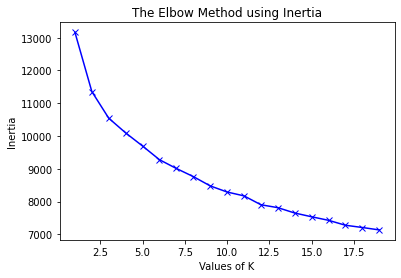
All Unsupervised

No preprocessing

ELBOW GRAPH:





Running regular KMeans on range

Test 0

Test type: KMeans

Parameters: Num Clusters i = 6

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[0, 'Forrest Gump (1994)']

[0, 'Shawshank Redemption, The (1994)']

[0, "Schindler's List (1993)"]

[0, 'Braveheart (1995)']

[0, 'Godfather, The (1972)']

[0, 'Saving Private Ryan (1998)']

[0, 'Gladiator (2000)']

[0, 'Dances with Wolves (1990)']

[0, 'Dark Knight, The (2008)']

[0, 'Good Will Hunting (1997)']

[0, "One Flew Over the Cuckoo's Nest (1975)"]

[0, 'Godfather: Part II, The (1974)']

[0, 'Goodfellas (1990)']

[0, 'Beautiful Mind, A (2001)']

[0, 'American History X (1998)']

[0, 'Green Mile, The (1999)']

[0, 'Catch Me If You Can (2002)']

[0, 'Rain Man (1988)']

[0, 'Casablanca (1942)']

[0, 'Full Metal Jacket (1987)']

[0, 'Departed, The (2006)']

[0, 'Cast Away (2000)']

[0, 'Dead Poets Society (1989)']

[0, 'Jaws (1975)']

[0, 'Life Is Beautiful (La Vita è bella) (1997)']

[0, 'As Good as It Gets (1997)']

[0, 'Inglourious Basterds (2009)']

[0, 'Stand by Me (1986)']

[0, 'Amadeus (1984)']

[0, 'Django Unchained (2012)']

[0, 'Philadelphia (1993)']

[0, 'City of God (Cidade de Deus) (2002)']

[0, 'Almost Famous (2000)']

[0, 'Dead Man Walking (1995)']

[0, 'Slumdog Millionaire (2008)']

[0, 'Casino (1995)']

[0, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[0, 'Pianist, The (2002)']

[0, 'Traffic (2000)']

[0, 'Rocky (1976)']

[0, 'Platoon (1986)']

[0, '12 Angry Men (1957)']

[0, 'Few Good Men, A (1992)']

[0, 'To Kill a Mockingbird (1962)']

[0, 'Untouchables, The (1987)']

[0, 'Last Samurai, The (2003)']

[0, 'Wolf of Wall Street, The (2013)']

[0, 'Sting, The (1973)']

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[0, 'Scarface (1983)']

[0, 'Unforgiven (1992)']

[0, "King's Speech, The (2010)"]

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[0, 'Social Network, The (2010)']

[0, 'Bowling for Columbine (2002)']

[0, 'Boot, Das (Boat, The) (1981)']

[0, 'Black Hawk Down (2001)']

[0, 'Gran Torino (2008)']

[0, 'Seven Samurai (Shichinin no samurai) (1954)']

[0, 'Lawrence of Arabia (1962)']

[0, 'Intouchables (2011)']

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[0, 'Bridge on the River Kwai, The (1957)']

[0, 'Blood Diamond (2006)']

[0, 'Good Morning, Vietnam (1987)']

[0, 'Last of the Mohicans, The (1992)']

[0, 'Three Kings (1999)']

[0, 'Glory (1989)']

[0, 'Mystic River (2003)']

[0, 'Cool Hand Luke (1967)']

[0, 'Hotel Rwanda (2004)']

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--------- NEW CLUSTER -----------

[1, 'Toy Story (1995)']

[1, 'Aladdin (1992)']

[1, 'Lion King, The (1994)']

[1, 'Shrek (2001)']

[1, 'Princess Bride, The (1987)']

[1, 'Titanic (1997)']

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'E.T. the Extra-Terrestrial (1982)']

[1, 'Monsters, Inc. (2001)']

[1, 'Pretty Woman (1990)']

[1, 'Mrs. Doubtfire (1993)']

[1, 'Babe (1995)']

[1, 'Incredibles, The (2004)']

[1, 'Home Alone (1990)']

[1, 'Ghost (1990)']

[1, 'Sleepless in Seattle (1993)']

[1, 'Willy Wonka & the Chocolate Factory (1971)']

[1, 'Four Weddings and a Funeral (1994)']

[1, 'Toy Story 2 (1999)']

[1, 'Clueless (1995)']

[1, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[1, 'Up (2009)']

[1, 'Wizard of Oz, The (1939)']

[1, 'Jumanji (1995)']

[1, 'Shakespeare in Love (1998)']

[1, 'When Harry Met Sally... (1989)']

[1, 'Jerry Maguire (1996)']

[1, 'Harry Potter and the Prisoner of Azkaban (2004)']

[1, "Bug's Life, A (1998)"]

[1, 'While You Were Sleeping (1995)']

[1, 'Harry Potter and the Chamber of Secrets (2002)']

[1, 'Big (1988)']

[1, 'Shrek 2 (2004)']

[1, 'Sense and Sensibility (1995)']

[1, 'Ratatouille (2007)']

[1, 'Harry Potter and the Goblet of Fire (2005)']

[1, 'Chicken Run (2000)']

[1, "Mr. Holland's Opus (1995)"]

[1, 'Ice Age (2002)']

[1, 'Erin Brockovich (2000)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Dave (1993)']

[1, "What's Eating Gilbert Grape (1993)"]

[1, 'American President, The (1995)']

[1, 'Grease (1978)']

[1, 'Honey, I Shrunk the Kids (1989)']

[1, 'Legends of the Fall (1994)']

[1, 'Santa Clause, The (1994)']

[1, "It's a Wonderful Life (1946)"]

[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

[1, 'Sound of Music, The (1965)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, "Bridget Jones's Diary (2001)"]

[1, 'English Patient, The (1996)']

[1, 'Gone with the Wind (1939)']

[1, 'Toy Story 3 (2010)']

[1, 'Harry Potter and the Order of the Phoenix (2007)']

[1, 'Notting Hill (1999)']

[1, 'Moulin Rouge (2001)']

[1, 'Harry Potter and the Half-Blood Prince (2009)']

[1, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[1, 'Wedding Singer, The (1998)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'How to Train Your Dragon (2010)']

[1, '10 Things I Hate About You (1999)']

[1, 'Dragonheart (1996)']

[1, 'Love Actually (2003)']

[1, 'Inside Out (2015)']

[1, 'Pocahontas (1995)']

[1, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[1, 'Much Ado About Nothing (1993)']

[1, 'My Big Fat Greek Wedding (2002)']

[1, 'Pinocchio (1940)']

[1, 'Chocolat (2000)']

[1, "You've Got Mail (1998)"]

[1, 'Casper (1995)']

[1, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[1, 'Charlie and the Chocolate Factory (2005)']

[1, 'Legally Blonde (2001)']

[1, 'Phenomenon (1996)']

[1, 'Miss Congeniality (2000)']

[1, 'Field of Dreams (1989)']

[1, 'Fantasia (1940)']

[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Sabrina (1995)']

[1, 'Crocodile Dundee (1986)']

[1, 'Dirty Dancing (1987)']

[1, 'Thelma & Louise (1991)']

[1, 'Goonies, The (1985)']

[1, 'Grumpier Old Men (1995)']

[1, 'Illusionist, The (2006)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Father of the Bride Part II (1995)']

[1, 'Rob Roy (1995)']

[1, 'What Women Want (2000)']

[1, 'French Kiss (1995)']

[1, 'First Knight (1995)']

[1, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[2, 'Fugitive, The (1993)']

[2, 'Batman (1989)']

[2, 'True Lies (1994)']

[2, 'Speed (1994)']

[2, 'Mission: Impossible (1996)']

[2, 'Die Hard (1988)']

[2, 'Die Hard: With a Vengeance (1995)']

[2, 'Rock, The (1996)']

[2, "Ocean's Eleven (2001)"]

[2, 'Batman Forever (1995)']

[2, 'Twister (1996)']

[2, 'Bourne Identity, The (2002)']

[2, 'GoldenEye (1995)']

[2, 'Clear and Present Danger (1994)']

[2, 'Outbreak (1995)']

[2, 'Star Trek: Generations (1994)']

[2, 'Indiana Jones and the Temple of Doom (1984)']

[2, 'Firm, The (1993)']

[2, 'Cliffhanger (1993)']

[2, 'Net, The (1995)']

[2, 'Crimson Tide (1995)']

[2, 'Hunt for Red October, The (1990)']

[2, 'Back to the Future Part III (1990)']

[2, 'Broken Arrow (1996)']

[2, 'Bourne Ultimatum, The (2007)']

[2, 'Casino Royale (2006)']

[2, 'Top Gun (1986)']

[2, 'Face/Off (1997)']

[2, 'Bourne Supremacy, The (2004)']

[2, 'Mummy, The (1999)']

[2, 'Lethal Weapon (1987)']

[2, 'Mission: Impossible II (2000)']

[2, 'Demolition Man (1993)']

[2, 'In the Line of Fire (1993)']

[2, "Charlie's Angels (2000)"]

[2, 'Die Hard 2 (1990)']

[2, 'Maverick (1994)']

[2, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[2, 'Lost World: Jurassic Park, The (1997)']

[2, 'Enemy of the State (1998)']

[2, 'Eraser (1996)']

[2, 'Patriot, The (2000)']

[2, 'Con Air (1997)']

[2, 'Air Force One (1997)']

[2, 'Client, The (1994)']

[2, 'Sherlock Holmes (2009)']

[2, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[2, 'Tombstone (1993)']

[2, 'Desperado (1995)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Congo (1995)']

[2, 'Mask of Zorro, The (1998)']

[2, 'Ransom (1996)']

[2, 'The Hunger Games (2012)']

[2, "The Devil's Advocate (1997)"]

[2, 'Italian Job, The (2003)']

[2, 'Batman Returns (1992)']

[2, 'Lethal Weapon 2 (1989)']

[2, 'Romancing the Stone (1984)']

[2, 'Last Action Hero (1993)']

[2, 'Blade (1998)']

[2, 'Mr. & Mrs. Smith (2005)']

[2, 'Bad Boys (1995)']

[2, 'Tomorrow Never Dies (1997)']

[2, 'Goldfinger (1964)']

[2, 'Three Musketeers, The (1993)']

[2, 'Sneakers (1992)']

[2, 'Iron Man 2 (2010)']

[2, 'Wild Wild West (1999)']

[2, 'Rush Hour (1998)']

[2, 'Thomas Crown Affair, The (1999)']

[2, 'Disclosure (1994)']

[2, 'Beverly Hills Cop (1984)']

[2, 'Gone in 60 Seconds (2000)']

[2, 'X-Files: Fight the Future, The (1998)']

[2, 'Taken (2008)']

[2, "Pirates of the Caribbean: At World's End (2007)"]

[2, 'Executive Decision (1996)']

--------- NEW CLUSTER -----------

[3, 'Matrix, The (1999)']

[3, 'Star Wars: Episode IV - A New Hope (1977)']

[3, 'Jurassic Park (1993)']

[3, 'Terminator 2: Judgment Day (1991)']

[3, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[3, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[3, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[3, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[3, 'Lord of the Rings: The Two Towers, The (2002)']

[3, 'Lord of the Rings: The Return of the King, The (2003)']

[3, 'Back to the Future (1985)']

[3, 'Independence Day (a.k.a. ID4) (1996)']

[3, 'Apollo 13 (1995)']

[3, 'Men in Black (a.k.a. MIB) (1997)']

[3, 'Terminator, The (1984)']

[3, 'Indiana Jones and the Last Crusade (1989)']

[3, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[3, 'Alien (1979)']

[3, 'Fifth Element, The (1997)']

[3, 'X-Men (2000)']

[3, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[3, 'Star Wars: Episode I - The Phantom Menace (1999)']

[3, 'Aliens (1986)']

[3, 'Stargate (1994)']

[3, 'Batman Begins (2005)']

[3, 'Minority Report (2002)']

[3, 'Spider-Man (2002)']

[3, 'Waterworld (1995)']

[3, 'WALL·E (2008)']

[3, 'V for Vendetta (2006)']

[3, 'Iron Man (2008)']

[3, 'Avatar (2009)']

[3, 'Matrix Reloaded, The (2003)']

[3, 'Back to the Future Part II (1989)']

[3, 'Armageddon (1998)']

[3, 'Interstellar (2014)']

[3, 'Total Recall (1990)']

[3, 'Gattaca (1997)']

[3, 'Contact (1997)']

[3, 'Star Wars: Episode II - Attack of the Clones (2002)']

[3, 'Spider-Man 2 (2004)']

[3, 'X2: X-Men United (2003)']

[3, 'Dark Knight Rises, The (2012)']

[3, 'Star Trek: First Contact (1996)']

[3, '300 (2007)']

[3, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[3, 'Matrix Revolutions, The (2003)']

[3, 'District 9 (2009)']

[3, 'Avengers, The (2012)']

[3, 'Abyss, The (1989)']

[3, 'I, Robot (2004)']

[3, 'Starship Troopers (1997)']

[3, 'Predator (1987)']

[3, 'The Martian (2015)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Star Trek (2009)']

[3, 'Star Trek II: The Wrath of Khan (1982)']

[3, 'RoboCop (1987)']

[3, 'Close Encounters of the Third Kind (1977)']

[3, 'Judge Dredd (1995)']

[3, 'Superman (1978)']

[3, 'I Am Legend (2007)']

[3, 'A.I. Artificial Intelligence (2001)']

[3, 'Alien³ (a.k.a. Alien 3) (1992)']

[3, 'Signs (2002)']

[3, 'Mad Max: Fury Road (2015)']

[3, 'Planet of the Apes (1968)']

[3, 'Species (1995)']

[3, 'Star Wars: Episode VII - The Force Awakens (2015)']

[3, 'Star Trek IV: The Voyage Home (1986)']

[3, 'Edge of Tomorrow (2014)']

[3, 'Gravity (2013)']

[3, 'Johnny Mnemonic (1995)']

[3, 'Serenity (2005)']

[3, 'Deep Impact (1998)']

[3, 'Terminator 3: Rise of the Machines (2003)']

[3, 'Alien: Resurrection (1997)']

[3, 'Highlander (1986)']

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[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Mask, The (1994)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[4, "Ferris Bueller's Day Off (1986)"]

[4, "There's Something About Mary (1998)"]

[4, 'Austin Powers: The Spy Who Shagged Me (1999)']

[4, 'American Pie (1999)']

[4, 'Breakfast Club, The (1985)']

[4, 'Clerks (1994)']

[4, 'Austin Powers: International Man of Mystery (1997)']

[4, 'Office Space (1999)']

[4, "Monty Python's Life of Brian (1979)"]

[4, 'Get Shorty (1995)']

[4, 'Who Framed Roger Rabbit? (1988)']

[4, 'Ace Ventura: When Nature Calls (1995)']

[4, 'Beetlejuice (1988)']

[4, 'Birdcage, The (1996)']

[4, 'Airplane! (1980)']

[4, 'Blues Brothers, The (1980)']

[4, 'Meet the Parents (2000)']

[4, 'Fish Called Wanda, A (1988)']

[4, 'Shaun of the Dead (2004)']

[4, 'Blair Witch Project, The (1999)']

[4, 'Happy Gilmore (1996)']

[4, 'Nutty Professor, The (1996)']

[4, 'Quiz Show (1994)']

[4, 'Liar Liar (1997)']

[4, 'Juno (2007)']

[4, 'Addams Family Values (1993)']

[4, 'Mars Attacks! (1996)']

[4, 'South Park: Bigger, Longer and Uncut (1999)']

[4, 'Dogma (1999)']

[4, 'High Fidelity (2000)']

[4, 'Scream (1996)']

[4, 'This Is Spinal Tap (1984)']

[4, 'Hangover, The (2009)']

[4, 'Young Frankenstein (1974)']

[4, 'Ed Wood (1994)']

[4, 'Raising Arizona (1987)']

[4, 'Bruce Almighty (2003)']

[4, 'Full Monty, The (1997)']

[4, '40-Year-Old Virgin, The (2005)']

[4, 'Rushmore (1998)']

[4, 'Galaxy Quest (1999)']

[4, 'Cable Guy, The (1996)']

[4, 'Hot Fuzz (2007)']

[4, 'Robin Hood: Men in Tights (1993)']

[4, 'School of Rock (2003)']

[4, 'From Dusk Till Dawn (1996)']

[4, "Wayne's World (1992)"]

[4, 'Naked Gun 33 1/3: The Final Insult (1994)']

[4, 'Grosse Pointe Blank (1997)']

[4, 'Deadpool (2016)']

[4, 'My Cousin Vinny (1992)']

[4, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[4, 'Zombieland (2009)']

[4, 'Chasing Amy (1997)']

[4, 'Rocky Horror Picture Show, The (1975)']

[4, 'Election (1999)']

[4, 'Coneheads (1993)']

[4, 'Superbad (2007)']

[4, 'Christmas Story, A (1983)']

[4, 'Hot Shots! Part Deux (1993)']

[4, 'Arachnophobia (1990)']

[4, 'Ring, The (2002)']

[4, 'Spaceballs (1987)']

[4, 'Army of Darkness (1993)']

[4, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[4, 'Gremlins (1984)']

[4, 'Some Like It Hot (1959)']

[4, 'Animal House (1978)']

[4, 'Scary Movie (2000)']

[4, 'So I Married an Axe Murderer (1993)']

[4, 'Crying Game, The (1992)']

[4, 'Blazing Saddles (1974)']

--------- NEW CLUSTER -----------

[5, 'Pulp Fiction (1994)']

[5, 'Silence of the Lambs, The (1991)']

[5, 'Fight Club (1999)']

[5, 'Usual Suspects, The (1995)']

[5, 'American Beauty (1999)']

[5, 'Seven (a.k.a. Se7en) (1995)']

[5, 'Fargo (1996)']

[5, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[5, 'Sixth Sense, The (1999)']

[5, 'Memento (2000)']

[5, 'Inception (2010)']

[5, 'Blade Runner (1982)']

[5, 'Reservoir Dogs (1992)']

[5, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[5, 'Kill Bill: Vol. 1 (2003)']

[5, 'Truman Show, The (1998)']

[5, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[5, 'Eternal Sunshine of the Spotless Mind (2004)']

[5, 'Being John Malkovich (1999)']

[5, 'Shining, The (1980)']

[5, 'Clockwork Orange, A (1971)']

[5, 'Taxi Driver (1976)']

[5, '2001: A Space Odyssey (1968)']

[5, 'Trainspotting (1996)']

[5, 'Kill Bill: Vol. 2 (2004)']

[5, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[5, 'Big Lebowski, The (1998)']

[5, 'L.A. Confidential (1997)']

[5, 'Donnie Darko (2001)']

[5, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[5, 'Apocalypse Now (1979)']

[5, 'Snatch (2000)']

[5, 'Heat (1995)']

[5, 'Edward Scissorhands (1990)']

[5, 'O Brother, Where Art Thou? (2000)']

[5, 'Natural Born Killers (1994)']

[5, 'Prestige, The (2006)']

[5, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[5, 'Sin City (2005)']

[5, 'Psycho (1960)']

[5, 'Requiem for a Dream (2000)']

[5, 'Nightmare Before Christmas, The (1993)']

[5, 'Lost in Translation (2003)']

[5, 'Rear Window (1954)']

[5, 'Leaving Las Vegas (1995)']

[5, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[5, 'Lock, Stock & Two Smoking Barrels (1998)']

[5, 'Citizen Kane (1941)']

[5, 'Little Miss Sunshine (2006)']

[5, 'Run Lola Run (Lola rennt) (1998)']

[5, 'Shutter Island (2010)']

[5, 'Graduate, The (1967)']

[5, 'Game, The (1997)']

[5, 'No Country for Old Men (2007)']

[5, 'Big Fish (2003)']

[5, 'Chinatown (1974)']

[5, 'North by Northwest (1959)']

[5, 'Unbreakable (2000)']

[5, '28 Days Later (2002)']

[5, 'Annie Hall (1977)']

[5, 'Crow, The (1994)']

[5, 'Eyes Wide Shut (1999)']

[5, 'Piano, The (1993)']

[5, 'Vertigo (1958)']

[5, 'Royal Tenenbaums, The (2001)']

[5, 'The Butterfly Effect (2004)']

[5, 'Brazil (1985)']

[5, 'True Romance (1993)']

[5, 'Children of Men (2006)']

[5, 'Exorcist, The (1973)']

[5, 'Sleepy Hollow (1999)']

[5, 'Boogie Nights (1997)']

[5, 'Talented Mr. Ripley, The (1999)']

[5, 'Pleasantville (1998)']

[5, 'Black Swan (2010)']

[5, 'Others, The (2001)']

[5, 'Princess Mononoke (Mononoke-hime) (1997)']

[5, 'Grand Budapest Hotel, The (2014)']

[5, 'Gone Girl (2014)']

[5, 'Magnolia (1999)']

[5, 'American Psycho (2000)']

[5, 'Ex Machina (2015)']

[5, 'Mulholland Drive (2001)']

[5, 'Jackie Brown (1997)']

[5, 'Maltese Falcon, The (1941)']

[5, 'Dark City (1998)']

[5, 'Old Boy (2003)']

[5, 'Watchmen (2009)']

[5, 'Birds, The (1963)']

[5, '(500) Days of Summer (2009)']

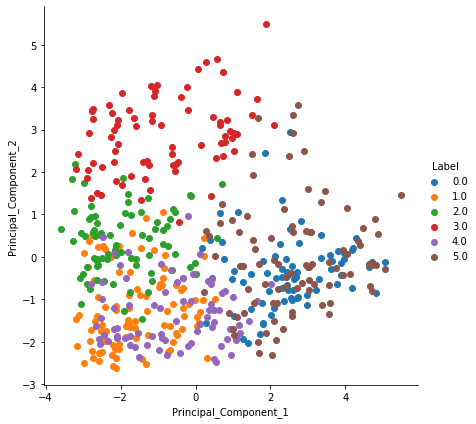
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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.08636744674418562

Davies-Bouldin Index: 2.582543055871026

Calinski-Harabasz Score: 41.09900460580386

Test 1

Test type: KMeans

Parameters: Num Clusters i = 7

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[0, 'Monty Python and the Holy Grail (1975)']

[0, 'Groundhog Day (1993)']

[0, 'Ace Ventura: Pet Detective (1994)']

[0, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[0, 'Big Lebowski, The (1998)']

[0, "Ferris Bueller's Day Off (1986)"]

[0, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[0, "There's Something About Mary (1998)"]

[0, 'Austin Powers: The Spy Who Shagged Me (1999)']

[0, 'American Pie (1999)']

[0, 'Breakfast Club, The (1985)']

[0, 'Clerks (1994)']

[0, 'O Brother, Where Art Thou? (2000)']

[0, 'Natural Born Killers (1994)']

[0, 'Austin Powers: International Man of Mystery (1997)']

[0, 'Office Space (1999)']

[0, "Monty Python's Life of Brian (1979)"]

[0, 'Get Shorty (1995)']

[0, 'Ace Ventura: When Nature Calls (1995)']

[0, 'Beetlejuice (1988)']

[0, 'Airplane! (1980)']

[0, 'Blues Brothers, The (1980)']

[0, 'Meet the Parents (2000)']

[0, 'Fish Called Wanda, A (1988)']

[0, 'Shaun of the Dead (2004)']

[0, 'Happy Gilmore (1996)']

[0, 'Little Miss Sunshine (2006)']

[0, 'Juno (2007)']

[0, 'Mars Attacks! (1996)']

[0, 'South Park: Bigger, Longer and Uncut (1999)']

[0, 'Dogma (1999)']

[0, 'High Fidelity (2000)']

[0, 'Scream (1996)']

[0, 'This Is Spinal Tap (1984)']

[0, 'Hangover, The (2009)']

[0, 'Annie Hall (1977)']

[0, 'Royal Tenenbaums, The (2001)']

[0, 'Young Frankenstein (1974)']

[0, 'Ed Wood (1994)']

[0, 'Raising Arizona (1987)']

[0, '40-Year-Old Virgin, The (2005)']

[0, 'Rushmore (1998)']

[0, 'Cable Guy, The (1996)']

[0, 'Hot Fuzz (2007)']

[0, 'Robin Hood: Men in Tights (1993)']

[0, 'From Dusk Till Dawn (1996)']

[0, "Wayne's World (1992)"]

[0, 'Naked Gun 33 1/3: The Final Insult (1994)']

[0, 'Grosse Pointe Blank (1997)']

[0, 'Boogie Nights (1997)']

[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[0, 'Zombieland (2009)']

[0, 'Bowling for Columbine (2002)']

[0, 'Chasing Amy (1997)']

[0, 'Rocky Horror Picture Show, The (1975)']

[0, 'Election (1999)']

[0, 'Superbad (2007)']

[0, 'Christmas Story, A (1983)']

[0, 'Hot Shots! Part Deux (1993)']

[0, 'Spaceballs (1987)']

[0, 'Army of Darkness (1993)']

[0, 'Three Kings (1999)']

[0, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[0, 'Some Like It Hot (1959)']

[0, 'Animal House (1978)']

[0, 'Scary Movie (2000)']

[0, 'So I Married an Axe Murderer (1993)']

[0, 'Blazing Saddles (1974)']

--------- NEW CLUSTER -----------

[1, 'Matrix, The (1999)']

[1, 'Star Wars: Episode IV - A New Hope (1977)']

[1, 'Jurassic Park (1993)']

[1, 'Terminator 2: Judgment Day (1991)']

[1, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[1, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[1, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[1, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[1, 'Lord of the Rings: The Two Towers, The (2002)']

[1, 'Lord of the Rings: The Return of the King, The (2003)']

[1, 'Back to the Future (1985)']

[1, 'Independence Day (a.k.a. ID4) (1996)']

[1, 'Men in Black (a.k.a. MIB) (1997)']

[1, 'Terminator, The (1984)']

[1, 'Indiana Jones and the Last Crusade (1989)']

[1, 'Alien (1979)']

[1, 'E.T. the Extra-Terrestrial (1982)']

[1, 'Fifth Element, The (1997)']

[1, 'X-Men (2000)']

[1, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[1, 'Star Wars: Episode I - The Phantom Menace (1999)']

[1, 'Aliens (1986)']

[1, 'Stargate (1994)']

[1, 'Minority Report (2002)']

[1, 'Waterworld (1995)']

[1, 'WALL·E (2008)']

[1, 'Iron Man (2008)']

[1, 'Star Trek: Generations (1994)']

[1, 'Avatar (2009)']

[1, 'Matrix Reloaded, The (2003)']

[1, 'Back to the Future Part II (1989)']

[1, 'Armageddon (1998)']

[1, 'Interstellar (2014)']

[1, 'Total Recall (1990)']

[1, 'Gattaca (1997)']

[1, 'Contact (1997)']

[1, 'Star Wars: Episode II - Attack of the Clones (2002)']

[1, 'Dark Knight Rises, The (2012)']

[1, 'Star Trek: First Contact (1996)']

[1, '300 (2007)']

[1, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[1, 'Matrix Revolutions, The (2003)']

[1, 'District 9 (2009)']

[1, 'Avengers, The (2012)']

[1, 'Abyss, The (1989)']

[1, 'I, Robot (2004)']

[1, 'Starship Troopers (1997)']

[1, 'Predator (1987)']

[1, 'The Martian (2015)']

[1, 'Guardians of the Galaxy (2014)']

[1, 'Star Trek (2009)']

[1, 'Star Trek II: The Wrath of Khan (1982)']

[1, 'RoboCop (1987)']

[1, 'Close Encounters of the Third Kind (1977)']

[1, 'Superman (1978)']

[1, 'Galaxy Quest (1999)']

[1, 'I Am Legend (2007)']

[1, 'A.I. Artificial Intelligence (2001)']

[1, 'Alien³ (a.k.a. Alien 3) (1992)']

[1, 'Signs (2002)']

[1, 'Mad Max: Fury Road (2015)']

[1, 'Planet of the Apes (1968)']

[1, 'Species (1995)']

[1, 'Star Wars: Episode VII - The Force Awakens (2015)']

[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Edge of Tomorrow (2014)']

[1, 'Gravity (2013)']

[1, 'Johnny Mnemonic (1995)']

[1, 'Serenity (2005)']

[1, 'Deep Impact (1998)']

[1, 'Terminator 3: Rise of the Machines (2003)']

[1, 'Alien: Resurrection (1997)']

[1, 'Highlander (1986)']

--------- NEW CLUSTER -----------

[2, 'Fugitive, The (1993)']

[2, 'Batman (1989)']

[2, 'True Lies (1994)']

[2, 'Speed (1994)']

[2, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[2, 'Mission: Impossible (1996)']

[2, 'Die Hard (1988)']

[2, 'Mask, The (1994)']

[2, 'Die Hard: With a Vengeance (1995)']

[2, 'Rock, The (1996)']

[2, "Ocean's Eleven (2001)"]

[2, 'Batman Forever (1995)']

[2, 'Twister (1996)']

[2, 'Batman Begins (2005)']

[2, 'Spider-Man (2002)']

[2, 'Bourne Identity, The (2002)']

[2, 'GoldenEye (1995)']

[2, 'Clear and Present Danger (1994)']

[2, 'Outbreak (1995)']

[2, 'Indiana Jones and the Temple of Doom (1984)']

[2, 'Firm, The (1993)']

[2, 'Cliffhanger (1993)']

[2, 'Net, The (1995)']

[2, 'Crimson Tide (1995)']

[2, 'Hunt for Red October, The (1990)']

[2, 'Spider-Man 2 (2004)']

[2, 'Broken Arrow (1996)']

[2, 'Bourne Ultimatum, The (2007)']

[2, 'Casino Royale (2006)']

[2, 'Top Gun (1986)']

[2, 'Face/Off (1997)']

[2, 'Bourne Supremacy, The (2004)']

[2, 'X2: X-Men United (2003)']

[2, 'Mummy, The (1999)']

[2, 'Lethal Weapon (1987)']

[2, 'Mission: Impossible II (2000)']

[2, 'Demolition Man (1993)']

[2, 'In the Line of Fire (1993)']

[2, "Charlie's Angels (2000)"]

[2, 'Die Hard 2 (1990)']

[2, 'Maverick (1994)']

[2, 'Crow, The (1994)']

[2, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[2, 'Lost World: Jurassic Park, The (1997)']

[2, 'Enemy of the State (1998)']

[2, 'Eraser (1996)']

[2, 'Patriot, The (2000)']

[2, 'Con Air (1997)']

[2, 'Judge Dredd (1995)']

[2, 'Air Force One (1997)']

[2, 'Sherlock Holmes (2009)']

[2, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[2, 'Tombstone (1993)']

[2, 'Desperado (1995)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Deadpool (2016)']

[2, 'Congo (1995)']

[2, 'Mask of Zorro, The (1998)']

[2, 'Ransom (1996)']

[2, 'The Hunger Games (2012)']

[2, 'Italian Job, The (2003)']

[2, 'Batman Returns (1992)']

[2, 'Lethal Weapon 2 (1989)']

[2, 'Romancing the Stone (1984)']

[2, 'Last Action Hero (1993)']

[2, 'Blade (1998)']

[2, 'Mr. & Mrs. Smith (2005)']

[2, 'Arachnophobia (1990)']

[2, 'Bad Boys (1995)']

[2, 'Tomorrow Never Dies (1997)']

[2, 'Goldfinger (1964)']

[2, 'Sneakers (1992)']

[2, 'Iron Man 2 (2010)']

[2, 'Wild Wild West (1999)']

[2, 'Rush Hour (1998)']

[2, 'Thomas Crown Affair, The (1999)']

[2, 'Disclosure (1994)']

[2, 'Beverly Hills Cop (1984)']

[2, 'Gone in 60 Seconds (2000)']

[2, 'X-Files: Fight the Future, The (1998)']

[2, 'Taken (2008)']

[2, "Pirates of the Caribbean: At World's End (2007)"]

[2, 'Executive Decision (1996)']

--------- NEW CLUSTER -----------

[3, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[3, 'Sixth Sense, The (1999)']

[3, 'Memento (2000)']

[3, 'Inception (2010)']

[3, 'Blade Runner (1982)']

[3, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[3, 'Truman Show, The (1998)']

[3, 'Eternal Sunshine of the Spotless Mind (2004)']

[3, 'Being John Malkovich (1999)']

[3, 'Shining, The (1980)']

[3, 'Clockwork Orange, A (1971)']

[3, '2001: A Space Odyssey (1968)']

[3, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[3, 'Donnie Darko (2001)']

[3, 'V for Vendetta (2006)']

[3, 'Edward Scissorhands (1990)']

[3, 'Prestige, The (2006)']

[3, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[3, 'Psycho (1960)']

[3, 'Nightmare Before Christmas, The (1993)']

[3, 'Lost in Translation (2003)']

[3, 'Rear Window (1954)']

[3, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[3, 'Citizen Kane (1941)']

[3, 'Run Lola Run (Lola rennt) (1998)']

[3, 'Shutter Island (2010)']

[3, 'Graduate, The (1967)']

[3, 'Game, The (1997)']

[3, 'Big Fish (2003)']

[3, 'Chinatown (1974)']

[3, 'North by Northwest (1959)']

[3, 'Unbreakable (2000)']

[3, '28 Days Later (2002)']

[3, 'Eyes Wide Shut (1999)']

[3, 'Piano, The (1993)']

[3, 'Vertigo (1958)']

[3, 'The Butterfly Effect (2004)']

[3, 'Brazil (1985)']

[3, 'Children of Men (2006)']

[3, 'Exorcist, The (1973)']

[3, 'Sleepy Hollow (1999)']

[3, 'Talented Mr. Ripley, The (1999)']

[3, 'Pleasantville (1998)']

[3, 'Black Swan (2010)']

[3, "The Devil's Advocate (1997)"]

[3, 'Others, The (2001)']

[3, 'Princess Mononoke (Mononoke-hime) (1997)']

[3, 'Grand Budapest Hotel, The (2014)']

[3, 'Gone Girl (2014)']

[3, 'Ring, The (2002)']

[3, 'American Psycho (2000)']

[3, 'Ex Machina (2015)']

[3, 'Mulholland Drive (2001)']

[3, 'Maltese Falcon, The (1941)']

[3, 'Dark City (1998)']

[3, 'Watchmen (2009)']

[3, 'Illusionist, The (2006)']

[3, 'Birds, The (1963)']

--------- NEW CLUSTER -----------

[4, 'Forrest Gump (1994)']

[4, 'Shawshank Redemption, The (1994)']

[4, "Schindler's List (1993)"]

[4, 'Braveheart (1995)']

[4, 'Apollo 13 (1995)']

[4, 'Saving Private Ryan (1998)']

[4, 'Gladiator (2000)']

[4, 'Dances with Wolves (1990)']

[4, 'Good Will Hunting (1997)']

[4, 'Titanic (1997)']

[4, 'Beautiful Mind, A (2001)']

[4, 'Green Mile, The (1999)']

[4, 'Catch Me If You Can (2002)']

[4, 'Rain Man (1988)']

[4, 'Casablanca (1942)']

[4, 'Cast Away (2000)']

[4, 'Dead Poets Society (1989)']

[4, 'Jaws (1975)']

[4, 'Life Is Beautiful (La Vita è bella) (1997)']

[4, 'As Good as It Gets (1997)']

[4, 'Jerry Maguire (1996)']

[4, 'Stand by Me (1986)']

[4, 'Amadeus (1984)']

[4, 'Philadelphia (1993)']

[4, 'Almost Famous (2000)']

[4, 'Dead Man Walking (1995)']

[4, 'Slumdog Millionaire (2008)']

[4, 'Quiz Show (1994)']

[4, 'Erin Brockovich (2000)']

[4, "What's Eating Gilbert Grape (1993)"]

[4, 'Pianist, The (2002)']

[4, 'Rocky (1976)']

[4, 'Platoon (1986)']

[4, 'Few Good Men, A (1992)']

[4, 'To Kill a Mockingbird (1962)']

[4, 'Legends of the Fall (1994)']

[4, 'Last Samurai, The (2003)']

[4, 'The Imitation Game (2014)']

[4, "It's a Wonderful Life (1946)"]

[4, 'Butch Cassidy and the Sundance Kid (1969)']

[4, 'English Patient, The (1996)']

[4, 'Gone with the Wind (1939)']

[4, "King's Speech, The (2010)"]

[4, 'Million Dollar Baby (2004)']

[4, 'Social Network, The (2010)']

[4, 'Boot, Das (Boat, The) (1981)']

[4, 'Black Hawk Down (2001)']

[4, 'Gran Torino (2008)']

[4, 'Lawrence of Arabia (1962)']

[4, 'Intouchables (2011)']

[4, 'Sling Blade (1996)']

[4, 'Bridge on the River Kwai, The (1957)']

[4, 'Field of Dreams (1989)']

[4, 'Blood Diamond (2006)']

[4, 'Good Morning, Vietnam (1987)']

[4, 'Last of the Mohicans, The (1992)']

[4, 'Glory (1989)']

[4, 'Rob Roy (1995)']

[4, '(500) Days of Summer (2009)']

[4, 'Hotel Rwanda (2004)']

[4, 'Garden State (2004)']

[4, 'Crash (2004)']

[4, 'Deer Hunter, The (1978)']

[4, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[5, 'Toy Story (1995)']

[5, 'Aladdin (1992)']

[5, 'Lion King, The (1994)']

[5, 'Shrek (2001)']

[5, 'Princess Bride, The (1987)']

[5, 'Beauty and the Beast (1991)']

[5, 'Finding Nemo (2003)']

[5, 'Monsters, Inc. (2001)']

[5, 'Pretty Woman (1990)']

[5, 'Mrs. Doubtfire (1993)']

[5, 'Babe (1995)']

[5, 'Incredibles, The (2004)']

[5, 'Home Alone (1990)']

[5, 'Ghost (1990)']

[5, 'Sleepless in Seattle (1993)']

[5, 'Willy Wonka & the Chocolate Factory (1971)']

[5, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[5, 'Four Weddings and a Funeral (1994)']

[5, 'Toy Story 2 (1999)']

[5, 'Clueless (1995)']

[5, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[5, 'Up (2009)']

[5, 'Wizard of Oz, The (1939)']

[5, 'Jumanji (1995)']

[5, 'Shakespeare in Love (1998)']

[5, 'When Harry Met Sally... (1989)']

[5, 'Harry Potter and the Prisoner of Azkaban (2004)']

[5, "Bug's Life, A (1998)"]

[5, 'While You Were Sleeping (1995)']

[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Who Framed Roger Rabbit? (1988)']

[5, 'Back to the Future Part III (1990)']

[5, 'Birdcage, The (1996)']

[5, 'Big (1988)']

[5, 'Shrek 2 (2004)']

[5, 'Sense and Sensibility (1995)']

[5, 'Blair Witch Project, The (1999)']

[5, 'Ratatouille (2007)']

[5, 'Nutty Professor, The (1996)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Liar Liar (1997)']

[5, 'Chicken Run (2000)']

[5, "Mr. Holland's Opus (1995)"]

[5, 'Ice Age (2002)']

[5, 'Snow White and the Seven Dwarfs (1937)']

[5, 'Dave (1993)']

[5, 'Addams Family Values (1993)']

[5, 'American President, The (1995)']

[5, 'Grease (1978)']

[5, 'Honey, I Shrunk the Kids (1989)']

[5, 'Santa Clause, The (1994)']

[5, 'Wallace & Gromit: The Wrong Trousers (1993)']

[5, 'Sound of Music, The (1965)']

[5, 'Bruce Almighty (2003)']

[5, 'Little Mermaid, The (1989)']

[5, 'Mary Poppins (1964)']

[5, "Bridget Jones's Diary (2001)"]

[5, 'Full Monty, The (1997)']

[5, 'Client, The (1994)']

[5, 'Toy Story 3 (2010)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Notting Hill (1999)']

[5, 'Moulin Rouge (2001)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

[5, 'School of Rock (2003)']

[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'Wedding Singer, The (1998)']

[5, 'Truth About Cats & Dogs, The (1996)']

[5, 'My Cousin Vinny (1992)']

[5, 'How to Train Your Dragon (2010)']

[5, '10 Things I Hate About You (1999)']

[5, 'Dragonheart (1996)']

[5, 'Love Actually (2003)']

[5, 'Inside Out (2015)']

[5, 'Pocahontas (1995)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Coneheads (1993)']

[5, 'Much Ado About Nothing (1993)']

[5, 'My Big Fat Greek Wedding (2002)']

[5, 'Pinocchio (1940)']

[5, 'Chocolat (2000)']

[5, "You've Got Mail (1998)"]

[5, 'Casper (1995)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, 'Charlie and the Chocolate Factory (2005)']

[5, 'Legally Blonde (2001)']

[5, 'Phenomenon (1996)']

[5, 'Miss Congeniality (2000)']

[5, 'Fantasia (1940)']

[5, 'Wallace & Gromit: A Close Shave (1995)']

[5, 'Sabrina (1995)']

[5, 'Three Musketeers, The (1993)']

[5, 'Crocodile Dundee (1986)']

[5, 'Dirty Dancing (1987)']

[5, 'Thelma & Louise (1991)']

[5, 'Goonies, The (1985)']

[5, 'Grumpier Old Men (1995)']

[5, 'Gremlins (1984)']

[5, "City Slickers II: The Legend of Curly's Gold (1994)"]

[5, 'Father of the Bride Part II (1995)']

[5, 'What Women Want (2000)']

[5, 'Crying Game, The (1992)']

[5, 'French Kiss (1995)']

[5, 'First Knight (1995)']

[5, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[6, 'Pulp Fiction (1994)']

[6, 'Silence of the Lambs, The (1991)']

[6, 'Fight Club (1999)']

[6, 'Usual Suspects, The (1995)']

[6, 'American Beauty (1999)']

[6, 'Godfather, The (1972)']

[6, 'Seven (a.k.a. Se7en) (1995)']

[6, 'Fargo (1996)']

[6, 'Dark Knight, The (2008)']

[6, "One Flew Over the Cuckoo's Nest (1975)"]

[6, 'Reservoir Dogs (1992)']

[6, 'Godfather: Part II, The (1974)']

[6, 'Kill Bill: Vol. 1 (2003)']

[6, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[6, 'Goodfellas (1990)']

[6, 'American History X (1998)']

[6, 'Taxi Driver (1976)']

[6, 'Trainspotting (1996)']

[6, 'Kill Bill: Vol. 2 (2004)']

[6, 'L.A. Confidential (1997)']

[6, 'Apocalypse Now (1979)']

[6, 'Full Metal Jacket (1987)']

[6, 'Departed, The (2006)']

[6, 'Snatch (2000)']

[6, 'Heat (1995)']

[6, 'Inglourious Basterds (2009)']

[6, 'Sin City (2005)']

[6, 'Requiem for a Dream (2000)']

[6, 'Django Unchained (2012)']

[6, 'Leaving Las Vegas (1995)']

[6, 'City of God (Cidade de Deus) (2002)']

[6, 'Lock, Stock & Two Smoking Barrels (1998)']

[6, 'No Country for Old Men (2007)']

[6, 'Casino (1995)']

[6, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[6, 'Traffic (2000)']

[6, '12 Angry Men (1957)']

[6, 'Untouchables, The (1987)']

[6, 'Wolf of Wall Street, The (2013)']

[6, 'Sting, The (1973)']

[6, 'True Romance (1993)']

[6, 'Scarface (1983)']

[6, 'Unforgiven (1992)']

[6, 'Seven Samurai (Shichinin no samurai) (1954)']

[6, 'Magnolia (1999)']

[6, 'Jackie Brown (1997)']

[6, 'Old Boy (2003)']

[6, 'Mystic River (2003)']

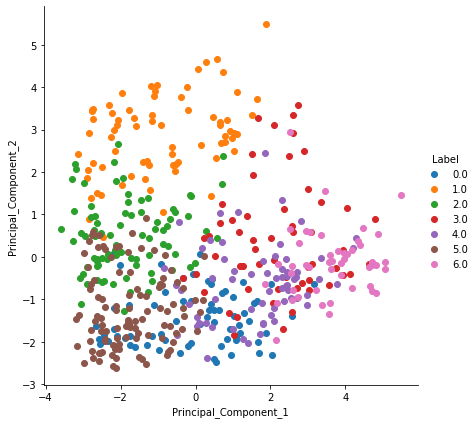
[6, 'Cool Hand Luke (1967)']

[68, 73, 83, 58, 64, 105, 49]

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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09061914662422549

Davies-Bouldin Index: 2.500585858230813

Calinski-Harabasz Score: 37.839962009401084

Test 2

Test type: KMeans

Parameters: Num Clusters i = 8

--------- NEW CLUSTER -----------

[0, 'Star Wars: Episode IV - A New Hope (1977)']

[0, 'Jurassic Park (1993)']

[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'Lord of the Rings: The Two Towers, The (2002)']

[0, 'Lord of the Rings: The Return of the King, The (2003)']

[0, 'Back to the Future (1985)']

[0, 'Independence Day (a.k.a. ID4) (1996)']

[0, 'Men in Black (a.k.a. MIB) (1997)']

[0, 'Terminator, The (1984)']

[0, 'Indiana Jones and the Last Crusade (1989)']

[0, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[0, 'Fifth Element, The (1997)']

[0, 'X-Men (2000)']

[0, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[0, 'Star Wars: Episode I - The Phantom Menace (1999)']

[0, 'Aliens (1986)']

[0, 'Twister (1996)']

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[0, 'Batman Begins (2005)']

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[0, 'Avatar (2009)']

[0, 'Indiana Jones and the Temple of Doom (1984)']

[0, 'Matrix Reloaded, The (2003)']

[0, 'Back to the Future Part II (1989)']

[0, 'Armageddon (1998)']

[0, 'Total Recall (1990)']

[0, 'Back to the Future Part III (1990)']

[0, 'Star Wars: Episode II - Attack of the Clones (2002)']

[0, 'Spider-Man 2 (2004)']

[0, 'X2: X-Men United (2003)']

[0, 'Dark Knight Rises, The (2012)']

[0, 'Star Trek: First Contact (1996)']

[0, 'Mummy, The (1999)']

[0, '300 (2007)']

[0, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[0, 'Matrix Revolutions, The (2003)']

[0, 'Avengers, The (2012)']

[0, 'Abyss, The (1989)']

[0, 'I, Robot (2004)']

[0, 'Starship Troopers (1997)']

[0, 'Predator (1987)']

[0, 'Guardians of the Galaxy (2014)']

[0, 'Star Trek (2009)']

[0, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[0, 'Star Trek II: The Wrath of Khan (1982)']

[0, 'RoboCop (1987)']

[0, 'Judge Dredd (1995)']

[0, 'Superman (1978)']

[0, 'Galaxy Quest (1999)']

[0, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[0, 'I Am Legend (2007)']

[0, 'Alien³ (a.k.a. Alien 3) (1992)']

[0, 'Signs (2002)']

[0, 'The Hunger Games (2012)']

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[0, 'Species (1995)']

[0, 'Star Wars: Episode VII - The Force Awakens (2015)']

[0, 'Star Trek IV: The Voyage Home (1986)']

[0, 'Edge of Tomorrow (2014)']

[0, 'Johnny Mnemonic (1995)']

[0, 'Serenity (2005)']

[0, 'Iron Man 2 (2010)']

[0, 'Deep Impact (1998)']

[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Alien: Resurrection (1997)']

[0, 'X-Files: Fight the Future, The (1998)']

[0, 'Highlander (1986)']

[0, "Pirates of the Caribbean: At World's End (2007)"]

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[1, 'Pulp Fiction (1994)']

[1, 'Silence of the Lambs, The (1991)']

[1, 'Fight Club (1999)']

[1, 'Usual Suspects, The (1995)']

[1, 'American Beauty (1999)']

[1, 'Godfather, The (1972)']

[1, 'Seven (a.k.a. Se7en) (1995)']

[1, 'Fargo (1996)']

[1, 'Sixth Sense, The (1999)']

[1, 'Dark Knight, The (2008)']

[1, 'Memento (2000)']

[1, "One Flew Over the Cuckoo's Nest (1975)"]

[1, 'Reservoir Dogs (1992)']

[1, 'Godfather: Part II, The (1974)']

[1, 'Kill Bill: Vol. 1 (2003)']

[1, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[1, 'Goodfellas (1990)']

[1, 'American History X (1998)']

[1, 'Being John Malkovich (1999)']

[1, 'Shining, The (1980)']

[1, 'Clockwork Orange, A (1971)']

[1, 'Taxi Driver (1976)']

[1, 'Trainspotting (1996)']

[1, 'Kill Bill: Vol. 2 (2004)']

[1, 'Big Lebowski, The (1998)']

[1, 'L.A. Confidential (1997)']

[1, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[1, 'Apocalypse Now (1979)']

[1, 'Full Metal Jacket (1987)']

[1, 'Departed, The (2006)']

[1, 'Snatch (2000)']

[1, 'Heat (1995)']

[1, 'Natural Born Killers (1994)']

[1, 'Inglourious Basterds (2009)']

[1, 'Sin City (2005)']

[1, 'Psycho (1960)']

[1, 'Requiem for a Dream (2000)']

[1, 'Django Unchained (2012)']

[1, 'Lost in Translation (2003)']

[1, 'Rear Window (1954)']

[1, 'Leaving Las Vegas (1995)']

[1, 'City of God (Cidade de Deus) (2002)']

[1, 'Lock, Stock & Two Smoking Barrels (1998)']

[1, 'Citizen Kane (1941)']

[1, 'Shutter Island (2010)']

[1, 'Graduate, The (1967)']

[1, 'No Country for Old Men (2007)']

[1, 'Casino (1995)']

[1, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[1, 'Traffic (2000)']

[1, 'Chinatown (1974)']

[1, 'North by Northwest (1959)']

[1, '12 Angry Men (1957)']

[1, 'Eyes Wide Shut (1999)']

[1, 'Vertigo (1958)']

[1, 'Wolf of Wall Street, The (2013)']

[1, 'Sting, The (1973)']

[1, 'True Romance (1993)']

[1, 'Exorcist, The (1973)']

[1, 'Scarface (1983)']

[1, 'Unforgiven (1992)']

[1, 'Boogie Nights (1997)']

[1, 'Talented Mr. Ripley, The (1999)']

[1, 'Black Swan (2010)']

[1, 'Gone Girl (2014)']

[1, 'Magnolia (1999)']

[1, 'American Psycho (2000)']

[1, 'Mulholland Drive (2001)']

[1, 'Jackie Brown (1997)']

[1, 'Maltese Falcon, The (1941)']

[1, 'Old Boy (2003)']

[1, 'Birds, The (1963)']

[1, 'Mystic River (2003)']

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[2, 'Matrix, The (1999)']

[2, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[2, 'Inception (2010)']

[2, 'Blade Runner (1982)']

[2, 'Alien (1979)']

[2, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[2, 'Truman Show, The (1998)']

[2, 'Eternal Sunshine of the Spotless Mind (2004)']

[2, 'Minority Report (2002)']

[2, '2001: A Space Odyssey (1968)']

[2, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[2, 'WALL·E (2008)']

[2, 'Donnie Darko (2001)']

[2, 'V for Vendetta (2006)']

[2, 'Edward Scissorhands (1990)']

[2, 'Prestige, The (2006)']

[2, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[2, 'Interstellar (2014)']

[2, 'Gattaca (1997)']

[2, 'Contact (1997)']

[2, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[2, 'Run Lola Run (Lola rennt) (1998)']

[2, 'Game, The (1997)']

[2, 'District 9 (2009)']

[2, 'Big Fish (2003)']

[2, 'Unbreakable (2000)']

[2, 'The Martian (2015)']

[2, '28 Days Later (2002)']

[2, 'The Butterfly Effect (2004)']

[2, 'Brazil (1985)']

[2, 'Children of Men (2006)']

[2, 'Close Encounters of the Third Kind (1977)']

[2, 'Sleepy Hollow (1999)']

[2, 'A.I. Artificial Intelligence (2001)']

[2, 'Pleasantville (1998)']

[2, 'Mad Max: Fury Road (2015)']

[2, 'Others, The (2001)']

[2, 'Princess Mononoke (Mononoke-hime) (1997)']

[2, 'Planet of the Apes (1968)']

[2, 'Grand Budapest Hotel, The (2014)']

[2, 'Ex Machina (2015)']

[2, 'Gravity (2013)']

[2, 'Dark City (1998)']

[2, 'Watchmen (2009)']

[2, 'Illusionist, The (2006)']

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[3, 'Forrest Gump (1994)']

[3, 'Shawshank Redemption, The (1994)']

[3, "Schindler's List (1993)"]

[3, 'Braveheart (1995)']

[3, 'Apollo 13 (1995)']

[3, 'Saving Private Ryan (1998)']

[3, 'Gladiator (2000)']

[3, 'Dances with Wolves (1990)']

[3, 'Good Will Hunting (1997)']

[3, 'Beautiful Mind, A (2001)']

[3, 'Green Mile, The (1999)']

[3, 'Catch Me If You Can (2002)']

[3, 'Rain Man (1988)']

[3, 'Casablanca (1942)']

[3, 'Cast Away (2000)']

[3, 'Dead Poets Society (1989)']

[3, 'Jaws (1975)']

[3, 'Life Is Beautiful (La Vita è bella) (1997)']

[3, 'As Good as It Gets (1997)']

[3, 'Stand by Me (1986)']

[3, 'Amadeus (1984)']

[3, 'Philadelphia (1993)']

[3, 'Almost Famous (2000)']

[3, 'Dead Man Walking (1995)']

[3, 'Slumdog Millionaire (2008)']

[3, 'Pianist, The (2002)']

[3, 'Rocky (1976)']

[3, 'Platoon (1986)']

[3, 'Few Good Men, A (1992)']

[3, 'To Kill a Mockingbird (1962)']

[3, 'Untouchables, The (1987)']

[3, 'Last Samurai, The (2003)']

[3, 'The Imitation Game (2014)']

[3, "It's a Wonderful Life (1946)"]

[3, 'Butch Cassidy and the Sundance Kid (1969)']

[3, 'Gone with the Wind (1939)']

[3, "King's Speech, The (2010)"]

[3, 'Million Dollar Baby (2004)']

[3, 'Social Network, The (2010)']

[3, 'Boot, Das (Boat, The) (1981)']

[3, 'Black Hawk Down (2001)']

[3, 'Gran Torino (2008)']

[3, 'Seven Samurai (Shichinin no samurai) (1954)']

[3, 'Lawrence of Arabia (1962)']

[3, 'Intouchables (2011)']

[3, 'Sling Blade (1996)']

[3, 'Bridge on the River Kwai, The (1957)']

[3, 'Blood Diamond (2006)']

[3, 'Good Morning, Vietnam (1987)']

[3, 'Last of the Mohicans, The (1992)']

[3, 'Glory (1989)']

[3, 'Cool Hand Luke (1967)']

[3, 'Hotel Rwanda (2004)']

[3, 'Garden State (2004)']

[3, 'Crash (2004)']

[3, 'Deer Hunter, The (1978)']

[3, 'Great Escape, The (1963)']

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[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, "Ferris Bueller's Day Off (1986)"]

[4, "There's Something About Mary (1998)"]

[4, 'Austin Powers: The Spy Who Shagged Me (1999)']

[4, 'American Pie (1999)']

[4, 'Breakfast Club, The (1985)']

[4, 'Clerks (1994)']

[4, 'O Brother, Where Art Thou? (2000)']

[4, 'Austin Powers: International Man of Mystery (1997)']

[4, 'Office Space (1999)']

[4, "Monty Python's Life of Brian (1979)"]

[4, 'Get Shorty (1995)']

[4, 'Ace Ventura: When Nature Calls (1995)']

[4, 'Beetlejuice (1988)']

[4, 'Airplane! (1980)']

[4, 'Blues Brothers, The (1980)']

[4, 'Meet the Parents (2000)']

[4, 'Fish Called Wanda, A (1988)']

[4, 'Shaun of the Dead (2004)']

[4, 'Happy Gilmore (1996)']

[4, 'Nutty Professor, The (1996)']

[4, 'Little Miss Sunshine (2006)']

[4, 'Juno (2007)']

[4, 'Addams Family Values (1993)']

[4, 'Mars Attacks! (1996)']

[4, 'South Park: Bigger, Longer and Uncut (1999)']

[4, 'Dogma (1999)']

[4, 'High Fidelity (2000)']

[4, 'Scream (1996)']

[4, 'This Is Spinal Tap (1984)']

[4, 'Hangover, The (2009)']

[4, 'Annie Hall (1977)']

[4, 'Royal Tenenbaums, The (2001)']

[4, 'Young Frankenstein (1974)']

[4, 'Ed Wood (1994)']

[4, 'Raising Arizona (1987)']

[4, '40-Year-Old Virgin, The (2005)']

[4, 'Rushmore (1998)']

[4, 'Cable Guy, The (1996)']

[4, 'Hot Fuzz (2007)']

[4, 'Robin Hood: Men in Tights (1993)']

[4, 'School of Rock (2003)']

[4, 'From Dusk Till Dawn (1996)']

[4, "Wayne's World (1992)"]

[4, 'Naked Gun 33 1/3: The Final Insult (1994)']

[4, 'Grosse Pointe Blank (1997)']

[4, 'Deadpool (2016)']

[4, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[4, 'Zombieland (2009)']

[4, 'Bowling for Columbine (2002)']

[4, 'Chasing Amy (1997)']

[4, 'Rocky Horror Picture Show, The (1975)']

[4, 'Election (1999)']

[4, 'Coneheads (1993)']

[4, 'Superbad (2007)']

[4, 'Christmas Story, A (1983)']

[4, 'Hot Shots! Part Deux (1993)']

[4, 'Spaceballs (1987)']

[4, 'Army of Darkness (1993)']

[4, 'Three Kings (1999)']

[4, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[4, 'Some Like It Hot (1959)']

[4, 'Animal House (1978)']

[4, 'Scary Movie (2000)']

[4, 'So I Married an Axe Murderer (1993)']

[4, 'Blazing Saddles (1974)']

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[5, 'Titanic (1997)']

[5, 'Pretty Woman (1990)']

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[5, 'Home Alone (1990)']

[5, 'Ghost (1990)']

[5, 'Sleepless in Seattle (1993)']

[5, 'Four Weddings and a Funeral (1994)']

[5, 'Clueless (1995)']

[5, 'Shakespeare in Love (1998)']

[5, 'When Harry Met Sally... (1989)']

[5, 'Jerry Maguire (1996)']

[5, 'While You Were Sleeping (1995)']

[5, 'Birdcage, The (1996)']

[5, 'Big (1988)']

[5, 'Sense and Sensibility (1995)']

[5, 'Quiz Show (1994)']

[5, 'Liar Liar (1997)']

[5, "Mr. Holland's Opus (1995)"]

[5, 'Erin Brockovich (2000)']

[5, 'Dave (1993)']

[5, "What's Eating Gilbert Grape (1993)"]

[5, 'American President, The (1995)']

[5, 'Grease (1978)']

[5, 'Piano, The (1993)']

[5, 'Legends of the Fall (1994)']

[5, 'Santa Clause, The (1994)']

[5, 'Sound of Music, The (1965)']

[5, 'Bruce Almighty (2003)']

[5, "Bridget Jones's Diary (2001)"]

[5, 'Full Monty, The (1997)']

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[5, 'Moulin Rouge (2001)']

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[5, 'Truth About Cats & Dogs, The (1996)']

[5, 'My Cousin Vinny (1992)']

[5, '10 Things I Hate About You (1999)']

[5, 'Love Actually (2003)']

[5, 'Much Ado About Nothing (1993)']

[5, 'My Big Fat Greek Wedding (2002)']

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[5, "You've Got Mail (1998)"]

[5, 'Casper (1995)']

[5, 'Legally Blonde (2001)']

[5, 'Phenomenon (1996)']

[5, 'Miss Congeniality (2000)']

[5, 'Field of Dreams (1989)']

[5, 'Sabrina (1995)']

[5, 'Crocodile Dundee (1986)']

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[5, 'Thelma & Louise (1991)']

[5, 'Grumpier Old Men (1995)']

[5, "City Slickers II: The Legend of Curly's Gold (1994)"]

[5, 'Father of the Bride Part II (1995)']

[5, 'Rob Roy (1995)']

[5, 'What Women Want (2000)']

[5, '(500) Days of Summer (2009)']

[5, 'Crying Game, The (1992)']

[5, 'French Kiss (1995)']

[5, 'First Knight (1995)']

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[6, 'Fugitive, The (1993)']

[6, 'Batman (1989)']

[6, 'True Lies (1994)']

[6, 'Speed (1994)']

[6, 'Mission: Impossible (1996)']

[6, 'Die Hard (1988)']

[6, 'Mask, The (1994)']

[6, 'Die Hard: With a Vengeance (1995)']

[6, 'Rock, The (1996)']

[6, "Ocean's Eleven (2001)"]

[6, 'Batman Forever (1995)']

[6, 'Bourne Identity, The (2002)']

[6, 'GoldenEye (1995)']

[6, 'Clear and Present Danger (1994)']

[6, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[6, 'Outbreak (1995)']

[6, 'Firm, The (1993)']

[6, 'Cliffhanger (1993)']

[6, 'Net, The (1995)']

[6, 'Crimson Tide (1995)']

[6, 'Hunt for Red October, The (1990)']

[6, 'Broken Arrow (1996)']

[6, 'Bourne Ultimatum, The (2007)']

[6, 'Casino Royale (2006)']

[6, 'Top Gun (1986)']

[6, 'Face/Off (1997)']

[6, 'Bourne Supremacy, The (2004)']

[6, 'Blair Witch Project, The (1999)']

[6, 'Lethal Weapon (1987)']

[6, 'Mission: Impossible II (2000)']

[6, 'Demolition Man (1993)']

[6, 'In the Line of Fire (1993)']

[6, "Charlie's Angels (2000)"]

[6, 'Die Hard 2 (1990)']

[6, 'Maverick (1994)']

[6, 'Crow, The (1994)']

[6, 'Lost World: Jurassic Park, The (1997)']

[6, 'Enemy of the State (1998)']

[6, 'Eraser (1996)']

[6, 'Patriot, The (2000)']

[6, 'Con Air (1997)']

[6, 'Air Force One (1997)']

[6, 'Client, The (1994)']

[6, 'Sherlock Holmes (2009)']

[6, 'Tombstone (1993)']

[6, 'Desperado (1995)']

[6, 'Beverly Hills Cop III (1994)']

[6, 'Congo (1995)']

[6, 'Mask of Zorro, The (1998)']

[6, 'Ransom (1996)']

[6, "The Devil's Advocate (1997)"]

[6, 'Italian Job, The (2003)']

[6, 'Batman Returns (1992)']

[6, 'Lethal Weapon 2 (1989)']

[6, 'Romancing the Stone (1984)']

[6, 'Last Action Hero (1993)']

[6, 'Mr. & Mrs. Smith (2005)']

[6, 'Arachnophobia (1990)']

[6, 'Bad Boys (1995)']

[6, 'Ring, The (2002)']

[6, 'Tomorrow Never Dies (1997)']

[6, 'Goldfinger (1964)']

[6, 'Three Musketeers, The (1993)']

[6, 'Sneakers (1992)']

[6, 'Wild Wild West (1999)']

[6, 'Rush Hour (1998)']

[6, 'Thomas Crown Affair, The (1999)']

[6, 'Disclosure (1994)']

[6, 'Beverly Hills Cop (1984)']

[6, 'Gone in 60 Seconds (2000)']

[6, 'Taken (2008)']

[6, 'Executive Decision (1996)']

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[7, 'Toy Story (1995)']

[7, 'Aladdin (1992)']

[7, 'Lion King, The (1994)']

[7, 'Shrek (2001)']

[7, 'Princess Bride, The (1987)']

[7, 'Beauty and the Beast (1991)']

[7, 'Finding Nemo (2003)']

[7, 'E.T. the Extra-Terrestrial (1982)']

[7, 'Monsters, Inc. (2001)']

[7, 'Babe (1995)']

[7, 'Incredibles, The (2004)']

[7, 'Willy Wonka & the Chocolate Factory (1971)']

[7, 'Toy Story 2 (1999)']

[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Up (2009)']

[7, 'Wizard of Oz, The (1939)']

[7, 'Jumanji (1995)']

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, "Bug's Life, A (1998)"]

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Nightmare Before Christmas, The (1993)']

[7, 'Who Framed Roger Rabbit? (1988)']

[7, 'Shrek 2 (2004)']

[7, 'Ratatouille (2007)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Chicken Run (2000)']

[7, 'Ice Age (2002)']

[7, 'Snow White and the Seven Dwarfs (1937)']

[7, 'Honey, I Shrunk the Kids (1989)']

[7, 'Wallace & Gromit: The Wrong Trousers (1993)']

[7, 'Little Mermaid, The (1989)']

[7, 'Mary Poppins (1964)']

[7, 'Toy Story 3 (2010)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'How to Train Your Dragon (2010)']

[7, 'Dragonheart (1996)']

[7, 'Inside Out (2015)']

[7, 'Pocahontas (1995)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Pinocchio (1940)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Charlie and the Chocolate Factory (2005)']

[7, 'Fantasia (1940)']

[7, 'Wallace & Gromit: A Close Shave (1995)']

[7, 'Goonies, The (1985)']

[7, 'Gremlins (1984)']

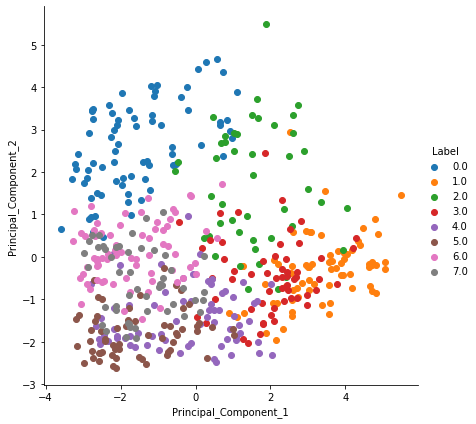
[7, 'Kung Fu Panda (2008)']

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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09054962928601319

Davies-Bouldin Index: 2.357011067439653

Calinski-Harabasz Score: 35.74647980683836

Test 3

Test type: KMeans

Parameters: Num Clusters i = 9

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[0, 'Ace Ventura: Pet Detective (1994)']

[0, 'Mask, The (1994)']

[0, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[0, 'Home Alone (1990)']

[0, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[0, "There's Something About Mary (1998)"]

[0, 'Austin Powers: The Spy Who Shagged Me (1999)']

[0, 'American Pie (1999)']

[0, 'Austin Powers: International Man of Mystery (1997)']

[0, 'Ace Ventura: When Nature Calls (1995)']

[0, 'Beetlejuice (1988)']

[0, 'Birdcage, The (1996)']

[0, 'Airplane! (1980)']

[0, 'Blues Brothers, The (1980)']

[0, 'Meet the Parents (2000)']

[0, 'Blair Witch Project, The (1999)']

[0, 'Happy Gilmore (1996)']

[0, 'Nutty Professor, The (1996)']

[0, 'Liar Liar (1997)']

[0, "Charlie's Angels (2000)"]

[0, 'Addams Family Values (1993)']

[0, 'Mars Attacks! (1996)']

[0, 'South Park: Bigger, Longer and Uncut (1999)']

[0, 'Scream (1996)']

[0, 'Hangover, The (2009)']

[0, 'Bruce Almighty (2003)']

[0, '40-Year-Old Virgin, The (2005)']

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[0, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

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[0, 'School of Rock (2003)']

[0, 'From Dusk Till Dawn (1996)']

[0, "Wayne's World (1992)"]

[0, 'Naked Gun 33 1/3: The Final Insult (1994)']

[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[0, 'Rocky Horror Picture Show, The (1975)']

[0, 'Coneheads (1993)']

[0, 'Last Action Hero (1993)']

[0, 'Superbad (2007)']

[0, 'Hot Shots! Part Deux (1993)']

[0, 'Arachnophobia (1990)']

[0, 'Ring, The (2002)']

[0, 'Spaceballs (1987)']

[0, 'Army of Darkness (1993)']

[0, 'Grumpier Old Men (1995)']

[0, 'Gremlins (1984)']

[0, "City Slickers II: The Legend of Curly's Gold (1994)"]

[0, 'Wild Wild West (1999)']

[0, 'Scary Movie (2000)']

[0, 'So I Married an Axe Murderer (1993)']

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[1, 'Titanic (1997)']

[1, 'Pretty Woman (1990)']

[1, 'Mrs. Doubtfire (1993)']

[1, 'Ghost (1990)']

[1, 'Sleepless in Seattle (1993)']

[1, 'Four Weddings and a Funeral (1994)']

[1, 'Clueless (1995)']

[1, 'Shakespeare in Love (1998)']

[1, 'When Harry Met Sally... (1989)']

[1, 'Jerry Maguire (1996)']

[1, 'While You Were Sleeping (1995)']

[1, 'Sense and Sensibility (1995)']

[1, 'Quiz Show (1994)']

[1, "Mr. Holland's Opus (1995)"]

[1, 'Erin Brockovich (2000)']

[1, 'Dave (1993)']

[1, "What's Eating Gilbert Grape (1993)"]

[1, 'American President, The (1995)']

[1, 'Grease (1978)']

[1, 'Legends of the Fall (1994)']

[1, 'Sound of Music, The (1965)']

[1, "Bridget Jones's Diary (2001)"]

[1, 'Full Monty, The (1997)']

[1, 'English Patient, The (1996)']

[1, 'Gone with the Wind (1939)']

[1, 'Notting Hill (1999)']

[1, 'Moulin Rouge (2001)']

[1, 'Wedding Singer, The (1998)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'My Cousin Vinny (1992)']

[1, '10 Things I Hate About You (1999)']

[1, 'Love Actually (2003)']

[1, 'Much Ado About Nothing (1993)']

[1, 'My Big Fat Greek Wedding (2002)']

[1, 'Chocolat (2000)']

[1, "You've Got Mail (1998)"]

[1, 'Legally Blonde (2001)']

[1, 'Phenomenon (1996)']

[1, 'Miss Congeniality (2000)']

[1, 'Field of Dreams (1989)']

[1, 'Sabrina (1995)']

[1, 'Dirty Dancing (1987)']

[1, 'Thelma & Louise (1991)']

[1, 'Illusionist, The (2006)']

[1, 'Father of the Bride Part II (1995)']

[1, 'Rob Roy (1995)']

[1, 'What Women Want (2000)']

[1, 'Crying Game, The (1992)']

[1, 'French Kiss (1995)']

[1, 'First Knight (1995)']

--------- NEW CLUSTER -----------

[2, 'Forrest Gump (1994)']

[2, 'Shawshank Redemption, The (1994)']

[2, "Schindler's List (1993)"]

[2, 'Braveheart (1995)']

[2, 'Apollo 13 (1995)']

[2, 'Saving Private Ryan (1998)']

[2, 'Gladiator (2000)']

[2, 'Dances with Wolves (1990)']

[2, 'Good Will Hunting (1997)']

[2, "One Flew Over the Cuckoo's Nest (1975)"]

[2, 'Beautiful Mind, A (2001)']

[2, 'American History X (1998)']

[2, 'Green Mile, The (1999)']

[2, 'Catch Me If You Can (2002)']

[2, 'Rain Man (1988)']

[2, 'Casablanca (1942)']

[2, 'Cast Away (2000)']

[2, 'Dead Poets Society (1989)']

[2, 'Jaws (1975)']

[2, 'Life Is Beautiful (La Vita è bella) (1997)']

[2, 'As Good as It Gets (1997)']

[2, 'Stand by Me (1986)']

[2, 'Amadeus (1984)']

[2, 'Philadelphia (1993)']

[2, 'Dead Man Walking (1995)']

[2, 'Slumdog Millionaire (2008)']

[2, 'Pianist, The (2002)']

[2, 'Traffic (2000)']

[2, 'Rocky (1976)']

[2, 'Platoon (1986)']

[2, '12 Angry Men (1957)']

[2, 'Few Good Men, A (1992)']

[2, 'To Kill a Mockingbird (1962)']

[2, 'Last Samurai, The (2003)']

[2, 'The Imitation Game (2014)']

[2, "It's a Wonderful Life (1946)"]

[2, 'Butch Cassidy and the Sundance Kid (1969)']

[2, "King's Speech, The (2010)"]

[2, 'Million Dollar Baby (2004)']

[2, 'Social Network, The (2010)']

[2, 'Boot, Das (Boat, The) (1981)']

[2, 'Black Hawk Down (2001)']

[2, 'Gran Torino (2008)']

[2, 'Seven Samurai (Shichinin no samurai) (1954)']

[2, 'Lawrence of Arabia (1962)']

[2, 'Intouchables (2011)']

[2, 'Sling Blade (1996)']

[2, 'Bridge on the River Kwai, The (1957)']

[2, 'Blood Diamond (2006)']

[2, 'Good Morning, Vietnam (1987)']

[2, 'Last of the Mohicans, The (1992)']

[2, 'Glory (1989)']

[2, 'Cool Hand Luke (1967)']

[2, 'Hotel Rwanda (2004)']

[2, 'Crash (2004)']

[2, 'Deer Hunter, The (1978)']

[2, 'Great Escape, The (1963)']

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[3, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[3, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[3, 'Lord of the Rings: The Two Towers, The (2002)']

[3, 'Lord of the Rings: The Return of the King, The (2003)']

[3, 'Batman (1989)']

[3, 'Dark Knight, The (2008)']

[3, 'Indiana Jones and the Last Crusade (1989)']

[3, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[3, 'Die Hard (1988)']

[3, 'X-Men (2000)']

[3, 'Batman Begins (2005)']

[3, 'Spider-Man (2002)']

[3, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[3, 'V for Vendetta (2006)']

[3, 'Iron Man (2008)']

[3, 'Spider-Man 2 (2004)']

[3, 'X2: X-Men United (2003)']

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[3, '300 (2007)']

[3, 'Avengers, The (2012)']

[3, 'Unbreakable (2000)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Crow, The (1994)']

[3, 'Superman (1978)']

[3, 'Sleepy Hollow (1999)']

[3, 'Sherlock Holmes (2009)']

[3, 'Deadpool (2016)']

[3, 'Mad Max: Fury Road (2015)']

[3, 'Batman Returns (1992)']

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[3, 'Watchmen (2009)']

[3, 'Iron Man 2 (2010)']

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[4, 'Matrix, The (1999)']

[4, 'Star Wars: Episode IV - A New Hope (1977)']

[4, 'Jurassic Park (1993)']

[4, 'Terminator 2: Judgment Day (1991)']

[4, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[4, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[4, 'Back to the Future (1985)']

[4, 'Independence Day (a.k.a. ID4) (1996)']

[4, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[4, 'Men in Black (a.k.a. MIB) (1997)']

[4, 'Inception (2010)']

[4, 'Terminator, The (1984)']

[4, 'Blade Runner (1982)']

[4, 'Alien (1979)']

[4, 'Fifth Element, The (1997)']

[4, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[4, 'Star Wars: Episode I - The Phantom Menace (1999)']

[4, 'Aliens (1986)']

[4, 'Stargate (1994)']

[4, 'Minority Report (2002)']

[4, '2001: A Space Odyssey (1968)']

[4, 'Waterworld (1995)']

[4, 'WALL·E (2008)']

[4, 'Star Trek: Generations (1994)']

[4, 'Avatar (2009)']

[4, 'Matrix Reloaded, The (2003)']

[4, 'Back to the Future Part II (1989)']

[4, 'Armageddon (1998)']

[4, 'Interstellar (2014)']

[4, 'Total Recall (1990)']

[4, 'Gattaca (1997)']

[4, 'Contact (1997)']

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[4, 'Star Trek: First Contact (1996)']

[4, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[4, 'Matrix Revolutions, The (2003)']

[4, 'District 9 (2009)']

[4, 'Abyss, The (1989)']

[4, 'I, Robot (2004)']

[4, 'Starship Troopers (1997)']

[4, 'Predator (1987)']

[4, 'The Martian (2015)']

[4, 'Star Trek (2009)']

[4, 'Star Trek II: The Wrath of Khan (1982)']

[4, 'The Butterfly Effect (2004)']

[4, 'RoboCop (1987)']

[4, 'Children of Men (2006)']

[4, 'Close Encounters of the Third Kind (1977)']

[4, 'Judge Dredd (1995)']

[4, 'I Am Legend (2007)']

[4, 'A.I. Artificial Intelligence (2001)']

[4, 'Alien³ (a.k.a. Alien 3) (1992)']

[4, 'Signs (2002)']

[4, 'Planet of the Apes (1968)']

[4, 'Species (1995)']

[4, 'Star Wars: Episode VII - The Force Awakens (2015)']

[4, 'Star Trek IV: The Voyage Home (1986)']

[4, 'Ex Machina (2015)']

[4, 'Edge of Tomorrow (2014)']

[4, 'Gravity (2013)']

[4, 'Dark City (1998)']

[4, 'Johnny Mnemonic (1995)']

[4, 'Serenity (2005)']

[4, 'Deep Impact (1998)']

[4, 'Terminator 3: Rise of the Machines (2003)']

[4, 'Alien: Resurrection (1997)']

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[5, 'Toy Story (1995)']

[5, 'Aladdin (1992)']

[5, 'Lion King, The (1994)']

[5, 'Shrek (2001)']

[5, 'Princess Bride, The (1987)']

[5, 'Beauty and the Beast (1991)']

[5, 'Finding Nemo (2003)']

[5, 'E.T. the Extra-Terrestrial (1982)']

[5, 'Monsters, Inc. (2001)']

[5, 'Babe (1995)']

[5, 'Incredibles, The (2004)']

[5, 'Willy Wonka & the Chocolate Factory (1971)']

[5, 'Toy Story 2 (1999)']

[5, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[5, 'Up (2009)']

[5, 'Wizard of Oz, The (1939)']

[5, 'Jumanji (1995)']

[5, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[5, 'Harry Potter and the Prisoner of Azkaban (2004)']

[5, "Bug's Life, A (1998)"]

[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Nightmare Before Christmas, The (1993)']

[5, 'Who Framed Roger Rabbit? (1988)']

[5, 'Big (1988)']

[5, 'Shrek 2 (2004)']

[5, 'Ratatouille (2007)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Chicken Run (2000)']

[5, 'Ice Age (2002)']

[5, 'Snow White and the Seven Dwarfs (1937)']

[5, 'Honey, I Shrunk the Kids (1989)']

[5, 'Santa Clause, The (1994)']

[5, 'Wallace & Gromit: The Wrong Trousers (1993)']

[5, 'Little Mermaid, The (1989)']

[5, 'Mary Poppins (1964)']

[5, 'Toy Story 3 (2010)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'How to Train Your Dragon (2010)']

[5, 'Dragonheart (1996)']

[5, 'Inside Out (2015)']

[5, 'Pocahontas (1995)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Pinocchio (1940)']

[5, 'Casper (1995)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, 'Charlie and the Chocolate Factory (2005)']

[5, 'Fantasia (1940)']

[5, 'Wallace & Gromit: A Close Shave (1995)']

[5, 'Goonies, The (1985)']

[5, 'Kung Fu Panda (2008)']

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[6, 'American Beauty (1999)']

[6, 'Monty Python and the Holy Grail (1975)']

[6, 'Groundhog Day (1993)']

[6, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[6, 'Truman Show, The (1998)']

[6, 'Eternal Sunshine of the Spotless Mind (2004)']

[6, 'Being John Malkovich (1999)']

[6, 'Trainspotting (1996)']

[6, 'Big Lebowski, The (1998)']

[6, "Ferris Bueller's Day Off (1986)"]

[6, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[6, 'Breakfast Club, The (1985)']

[6, 'Clerks (1994)']

[6, 'Edward Scissorhands (1990)']

[6, 'O Brother, Where Art Thou? (2000)']

[6, 'Natural Born Killers (1994)']

[6, 'Office Space (1999)']

[6, "Monty Python's Life of Brian (1979)"]

[6, 'Get Shorty (1995)']

[6, 'Lost in Translation (2003)']

[6, 'Leaving Las Vegas (1995)']

[6, 'Almost Famous (2000)']

[6, 'Fish Called Wanda, A (1988)']

[6, 'Shaun of the Dead (2004)']

[6, 'Citizen Kane (1941)']

[6, 'Little Miss Sunshine (2006)']

[6, 'Run Lola Run (Lola rennt) (1998)']

[6, 'Graduate, The (1967)']

[6, 'Juno (2007)']

[6, 'Big Fish (2003)']

[6, 'Dogma (1999)']

[6, 'High Fidelity (2000)']

[6, 'This Is Spinal Tap (1984)']

[6, '28 Days Later (2002)']

[6, 'Annie Hall (1977)']

[6, 'Eyes Wide Shut (1999)']

[6, 'Piano, The (1993)']

[6, 'Royal Tenenbaums, The (2001)']

[6, 'Young Frankenstein (1974)']

[6, 'Ed Wood (1994)']

[6, 'Raising Arizona (1987)']

[6, 'Brazil (1985)']

[6, 'Rushmore (1998)']

[6, 'Hot Fuzz (2007)']

[6, 'Grosse Pointe Blank (1997)']

[6, 'Boogie Nights (1997)']

[6, 'Zombieland (2009)']

[6, 'Bowling for Columbine (2002)']

[6, 'Pleasantville (1998)']

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[6, 'Princess Mononoke (Mononoke-hime) (1997)']

[6, 'Grand Budapest Hotel, The (2014)']

[6, 'Christmas Story, A (1983)']

[6, 'Magnolia (1999)']

[6, 'Three Kings (1999)']

[6, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[6, 'Some Like It Hot (1959)']

[6, 'Animal House (1978)']

[6, '(500) Days of Summer (2009)']

[6, 'Garden State (2004)']

[6, 'Blazing Saddles (1974)']

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[7, 'Pulp Fiction (1994)']

[7, 'Silence of the Lambs, The (1991)']

[7, 'Fight Club (1999)']

[7, 'Usual Suspects, The (1995)']

[7, 'Godfather, The (1972)']

[7, 'Seven (a.k.a. Se7en) (1995)']

[7, 'Fargo (1996)']

[7, 'Sixth Sense, The (1999)']

[7, 'Memento (2000)']

[7, 'Reservoir Dogs (1992)']

[7, 'Godfather: Part II, The (1974)']

[7, 'Kill Bill: Vol. 1 (2003)']

[7, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[7, 'Goodfellas (1990)']

[7, 'Shining, The (1980)']

[7, 'Clockwork Orange, A (1971)']

[7, 'Taxi Driver (1976)']

[7, 'Kill Bill: Vol. 2 (2004)']

[7, 'L.A. Confidential (1997)']

[7, 'Donnie Darko (2001)']

[7, 'Apocalypse Now (1979)']

[7, 'Full Metal Jacket (1987)']

[7, 'Departed, The (2006)']

[7, 'Snatch (2000)']

[7, 'Heat (1995)']

[7, 'Inglourious Basterds (2009)']

[7, 'Prestige, The (2006)']

[7, 'Sin City (2005)']

[7, 'Psycho (1960)']

[7, 'Requiem for a Dream (2000)']

[7, 'Django Unchained (2012)']

[7, 'Rear Window (1954)']

[7, 'City of God (Cidade de Deus) (2002)']

[7, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[7, 'Lock, Stock & Two Smoking Barrels (1998)']

[7, 'Shutter Island (2010)']

[7, 'Game, The (1997)']

[7, 'No Country for Old Men (2007)']

[7, 'Casino (1995)']

[7, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[7, 'Chinatown (1974)']

[7, 'North by Northwest (1959)']

[7, 'Untouchables, The (1987)']

[7, 'Vertigo (1958)']

[7, 'Wolf of Wall Street, The (2013)']

[7, 'Sting, The (1973)']

[7, 'True Romance (1993)']

[7, 'Exorcist, The (1973)']

[7, 'Scarface (1983)']

[7, 'Unforgiven (1992)']

[7, 'Talented Mr. Ripley, The (1999)']

[7, 'Black Swan (2010)']

[7, 'Others, The (2001)']

[7, 'Gone Girl (2014)']

[7, 'American Psycho (2000)']

[7, 'Mulholland Drive (2001)']

[7, 'Jackie Brown (1997)']

[7, 'Maltese Falcon, The (1941)']

[7, 'Old Boy (2003)']

[7, 'Birds, The (1963)']

[7, 'Mystic River (2003)']

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[8, 'Fugitive, The (1993)']

[8, 'True Lies (1994)']

[8, 'Speed (1994)']

[8, 'Mission: Impossible (1996)']

[8, 'Die Hard: With a Vengeance (1995)']

[8, 'Rock, The (1996)']

[8, "Ocean's Eleven (2001)"]

[8, 'Batman Forever (1995)']

[8, 'Twister (1996)']

[8, 'Bourne Identity, The (2002)']

[8, 'GoldenEye (1995)']

[8, 'Clear and Present Danger (1994)']

[8, 'Outbreak (1995)']

[8, 'Indiana Jones and the Temple of Doom (1984)']

[8, 'Firm, The (1993)']

[8, 'Cliffhanger (1993)']

[8, 'Net, The (1995)']

[8, 'Crimson Tide (1995)']

[8, 'Hunt for Red October, The (1990)']

[8, 'Back to the Future Part III (1990)']

[8, 'Broken Arrow (1996)']

[8, 'Bourne Ultimatum, The (2007)']

[8, 'Casino Royale (2006)']

[8, 'Top Gun (1986)']

[8, 'Face/Off (1997)']

[8, 'Bourne Supremacy, The (2004)']

[8, 'Mummy, The (1999)']

[8, 'Lethal Weapon (1987)']

[8, 'Mission: Impossible II (2000)']

[8, 'Demolition Man (1993)']

[8, 'In the Line of Fire (1993)']

[8, 'Die Hard 2 (1990)']

[8, 'Maverick (1994)']

[8, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[8, 'Lost World: Jurassic Park, The (1997)']

[8, 'Enemy of the State (1998)']

[8, 'Eraser (1996)']

[8, 'Patriot, The (2000)']

[8, 'Con Air (1997)']

[8, 'Air Force One (1997)']

[8, 'Client, The (1994)']

[8, 'Tombstone (1993)']

[8, 'Desperado (1995)']

[8, 'Beverly Hills Cop III (1994)']

[8, 'Congo (1995)']

[8, 'Mask of Zorro, The (1998)']

[8, 'Ransom (1996)']

[8, 'The Hunger Games (2012)']

[8, "The Devil's Advocate (1997)"]

[8, 'Italian Job, The (2003)']

[8, 'Lethal Weapon 2 (1989)']

[8, 'Romancing the Stone (1984)']

[8, 'Mr. & Mrs. Smith (2005)']

[8, 'Bad Boys (1995)']

[8, 'Tomorrow Never Dies (1997)']

[8, 'Goldfinger (1964)']

[8, 'Three Musketeers, The (1993)']

[8, 'Crocodile Dundee (1986)']

[8, 'Sneakers (1992)']

[8, 'Rush Hour (1998)']

[8, 'Thomas Crown Affair, The (1999)']

[8, 'Disclosure (1994)']

[8, 'Beverly Hills Cop (1984)']

[8, 'Gone in 60 Seconds (2000)']

[8, 'X-Files: Fight the Future, The (1998)']

[8, 'Taken (2008)']

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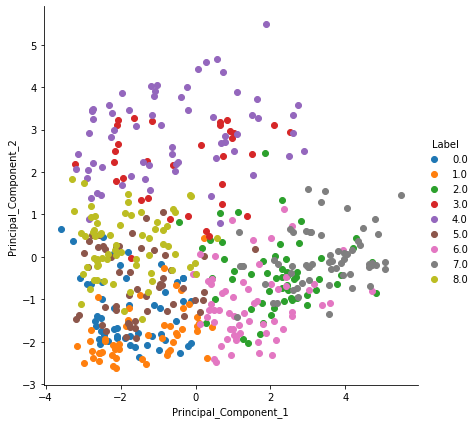
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09197636813614699

Davies-Bouldin Index: 2.383961550804822

Calinski-Harabasz Score: 33.57262150143247

Test 4

Test type: KMeans

Parameters: Num Clusters i = 10

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[0, "Ocean's Eleven (2001)"]

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[0, 'Crimson Tide (1995)']

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[0, 'Enemy of the State (1998)']

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[0, 'Last Action Hero (1993)']

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[0, 'Rush Hour (1998)']

[0, 'Thomas Crown Affair, The (1999)']

[0, 'Disclosure (1994)']

[0, 'Beverly Hills Cop (1984)']

[0, 'Gone in 60 Seconds (2000)']

[0, 'Taken (2008)']

[0, "Pirates of the Caribbean: At World's End (2007)"]

[0, 'Executive Decision (1996)']

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[1, 'American Beauty (1999)']

[1, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[1, 'Truman Show, The (1998)']

[1, 'Eternal Sunshine of the Spotless Mind (2004)']

[1, 'Being John Malkovich (1999)']

[1, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[1, 'Donnie Darko (2001)']

[1, 'Edward Scissorhands (1990)']

[1, 'O Brother, Where Art Thou? (2000)']

[1, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[1, 'Nightmare Before Christmas, The (1993)']

[1, 'Lost in Translation (2003)']

[1, 'Leaving Las Vegas (1995)']

[1, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[1, 'Citizen Kane (1941)']

[1, 'Little Miss Sunshine (2006)']

[1, 'Run Lola Run (Lola rennt) (1998)']

[1, 'Graduate, The (1967)']

[1, 'Big Fish (2003)']

[1, '28 Days Later (2002)']

[1, 'Annie Hall (1977)']

[1, 'Eyes Wide Shut (1999)']

[1, 'Piano, The (1993)']

[1, 'Royal Tenenbaums, The (2001)']

[1, 'The Butterfly Effect (2004)']

[1, 'Brazil (1985)']

[1, 'Sleepy Hollow (1999)']

[1, 'Boogie Nights (1997)']

[1, 'Talented Mr. Ripley, The (1999)']

[1, 'Pleasantville (1998)']

[1, 'Black Swan (2010)']

[1, 'Others, The (2001)']

[1, 'Princess Mononoke (Mononoke-hime) (1997)']

[1, 'Grand Budapest Hotel, The (2014)']

[1, 'Magnolia (1999)']

[1, 'Mulholland Drive (2001)']

[1, 'Illusionist, The (2006)']

[1, 'Birds, The (1963)']

[1, '(500) Days of Summer (2009)']

[1, 'Garden State (2004)']

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[2, 'Pulp Fiction (1994)']

[2, 'Silence of the Lambs, The (1991)']

[2, 'Fight Club (1999)']

[2, 'Usual Suspects, The (1995)']

[2, 'Godfather, The (1972)']

[2, 'Seven (a.k.a. Se7en) (1995)']

[2, 'Fargo (1996)']

[2, 'Sixth Sense, The (1999)']

[2, 'Memento (2000)']

[2, 'Reservoir Dogs (1992)']

[2, 'Godfather: Part II, The (1974)']

[2, 'Kill Bill: Vol. 1 (2003)']

[2, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[2, 'Goodfellas (1990)']

[2, 'American History X (1998)']

[2, 'Shining, The (1980)']

[2, 'Clockwork Orange, A (1971)']

[2, 'Taxi Driver (1976)']

[2, 'Trainspotting (1996)']

[2, 'Kill Bill: Vol. 2 (2004)']

[2, 'L.A. Confidential (1997)']

[2, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[2, 'Apocalypse Now (1979)']

[2, 'Full Metal Jacket (1987)']

[2, 'Departed, The (2006)']

[2, 'Snatch (2000)']

[2, 'Heat (1995)']

[2, 'Inglourious Basterds (2009)']

[2, 'Prestige, The (2006)']

[2, 'Sin City (2005)']

[2, 'Psycho (1960)']

[2, 'Requiem for a Dream (2000)']

[2, 'Django Unchained (2012)']

[2, 'Rear Window (1954)']

[2, 'City of God (Cidade de Deus) (2002)']

[2, 'Lock, Stock & Two Smoking Barrels (1998)']

[2, 'Shutter Island (2010)']

[2, 'Game, The (1997)']

[2, 'No Country for Old Men (2007)']

[2, 'Casino (1995)']

[2, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[2, 'Chinatown (1974)']

[2, 'North by Northwest (1959)']

[2, 'Untouchables, The (1987)']

[2, 'Vertigo (1958)']

[2, 'Wolf of Wall Street, The (2013)']

[2, 'Sting, The (1973)']

[2, 'True Romance (1993)']

[2, 'Scarface (1983)']

[2, 'Unforgiven (1992)']

[2, 'Gone Girl (2014)']

[2, 'American Psycho (2000)']

[2, 'Jackie Brown (1997)']

[2, 'Maltese Falcon, The (1941)']

[2, 'Old Boy (2003)']

[2, 'Mystic River (2003)']

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[3, 'Matrix, The (1999)']

[3, 'Star Wars: Episode IV - A New Hope (1977)']

[3, 'Jurassic Park (1993)']

[3, 'Terminator 2: Judgment Day (1991)']

[3, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[3, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[3, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[3, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[3, 'Lord of the Rings: The Two Towers, The (2002)']

[3, 'Lord of the Rings: The Return of the King, The (2003)']

[3, 'Back to the Future (1985)']

[3, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[3, 'Inception (2010)']

[3, 'Terminator, The (1984)']

[3, 'Indiana Jones and the Last Crusade (1989)']

[3, 'Blade Runner (1982)']

[3, 'Alien (1979)']

[3, 'Aliens (1986)']

[3, 'Minority Report (2002)']

[3, '2001: A Space Odyssey (1968)']

[3, 'WALL·E (2008)']

[3, 'Avatar (2009)']

[3, 'Jaws (1975)']

[3, 'Interstellar (2014)']

[3, 'Gattaca (1997)']

[3, 'District 9 (2009)']

[3, 'Abyss, The (1989)']

[3, 'The Martian (2015)']

[3, 'Children of Men (2006)']

[3, 'Close Encounters of the Third Kind (1977)']

[3, 'Mad Max: Fury Road (2015)']

[3, 'Planet of the Apes (1968)']

[3, 'Ex Machina (2015)']

[3, 'Edge of Tomorrow (2014)']

[3, 'Gravity (2013)']

[3, 'Dark City (1998)']

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[4, 'Forrest Gump (1994)']

[4, 'Shawshank Redemption, The (1994)']

[4, "Schindler's List (1993)"]

[4, 'Braveheart (1995)']

[4, 'Apollo 13 (1995)']

[4, 'Saving Private Ryan (1998)']

[4, 'Gladiator (2000)']

[4, 'Dances with Wolves (1990)']

[4, 'Good Will Hunting (1997)']

[4, "One Flew Over the Cuckoo's Nest (1975)"]

[4, 'Beautiful Mind, A (2001)']

[4, 'Green Mile, The (1999)']

[4, 'Catch Me If You Can (2002)']

[4, 'Rain Man (1988)']

[4, 'Casablanca (1942)']

[4, 'Cast Away (2000)']

[4, 'Dead Poets Society (1989)']

[4, 'Life Is Beautiful (La Vita è bella) (1997)']

[4, 'As Good as It Gets (1997)']

[4, 'Stand by Me (1986)']

[4, 'Amadeus (1984)']

[4, 'Philadelphia (1993)']

[4, 'Almost Famous (2000)']

[4, 'Dead Man Walking (1995)']

[4, 'Slumdog Millionaire (2008)']

[4, 'Pianist, The (2002)']

[4, 'Traffic (2000)']

[4, 'Rocky (1976)']

[4, 'Platoon (1986)']

[4, '12 Angry Men (1957)']

[4, 'Few Good Men, A (1992)']

[4, 'To Kill a Mockingbird (1962)']

[4, 'Last Samurai, The (2003)']

[4, 'The Imitation Game (2014)']

[4, "It's a Wonderful Life (1946)"]

[4, 'Butch Cassidy and the Sundance Kid (1969)']

[4, 'Gone with the Wind (1939)']

[4, "King's Speech, The (2010)"]

[4, 'Million Dollar Baby (2004)']

[4, 'Social Network, The (2010)']

[4, 'Boot, Das (Boat, The) (1981)']

[4, 'Black Hawk Down (2001)']

[4, 'Gran Torino (2008)']

[4, 'Seven Samurai (Shichinin no samurai) (1954)']

[4, 'Lawrence of Arabia (1962)']

[4, 'Intouchables (2011)']

[4, 'Sling Blade (1996)']

[4, 'Bridge on the River Kwai, The (1957)']

[4, 'Blood Diamond (2006)']

[4, 'Good Morning, Vietnam (1987)']

[4, 'Last of the Mohicans, The (1992)']

[4, 'Glory (1989)']

[4, 'Cool Hand Luke (1967)']

[4, 'Hotel Rwanda (2004)']

[4, 'Crash (2004)']

[4, 'Deer Hunter, The (1978)']

[4, 'Great Escape, The (1963)']

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[5, 'Batman (1989)']

[5, 'Dark Knight, The (2008)']

[5, 'X-Men (2000)']

[5, 'Batman Forever (1995)']

[5, 'Batman Begins (2005)']

[5, 'Spider-Man (2002)']

[5, 'V for Vendetta (2006)']

[5, 'Iron Man (2008)']

[5, 'Spider-Man 2 (2004)']

[5, 'X2: X-Men United (2003)']

[5, 'Dark Knight Rises, The (2012)']

[5, '300 (2007)']

[5, 'Avengers, The (2012)']

[5, 'Unbreakable (2000)']

[5, 'Guardians of the Galaxy (2014)']

[5, 'Crow, The (1994)']

[5, 'RoboCop (1987)']

[5, 'Superman (1978)']

[5, 'Sherlock Holmes (2009)']

[5, 'Deadpool (2016)']

[5, 'Batman Returns (1992)']

[5, 'Blade (1998)']

[5, 'Watchmen (2009)']

[5, 'Iron Man 2 (2010)']

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[6, 'Titanic (1997)']

[6, 'Pretty Woman (1990)']

[6, 'Mrs. Doubtfire (1993)']

[6, 'Home Alone (1990)']

[6, 'Ghost (1990)']

[6, 'Sleepless in Seattle (1993)']

[6, 'Four Weddings and a Funeral (1994)']

[6, 'Clueless (1995)']

[6, 'Shakespeare in Love (1998)']

[6, 'When Harry Met Sally... (1989)']

[6, 'Jerry Maguire (1996)']

[6, 'While You Were Sleeping (1995)']

[6, 'Birdcage, The (1996)']

[6, 'Big (1988)']

[6, 'Sense and Sensibility (1995)']

[6, 'Quiz Show (1994)']

[6, 'Liar Liar (1997)']

[6, "Mr. Holland's Opus (1995)"]

[6, 'Erin Brockovich (2000)']

[6, 'Dave (1993)']

[6, "What's Eating Gilbert Grape (1993)"]

[6, 'American President, The (1995)']

[6, 'Grease (1978)']

[6, 'Legends of the Fall (1994)']

[6, 'Sound of Music, The (1965)']

[6, 'Bruce Almighty (2003)']

[6, "Bridget Jones's Diary (2001)"]

[6, 'Full Monty, The (1997)']

[6, 'English Patient, The (1996)']

[6, 'Notting Hill (1999)']

[6, 'Moulin Rouge (2001)']

[6, 'Wedding Singer, The (1998)']

[6, 'Truth About Cats & Dogs, The (1996)']

[6, 'My Cousin Vinny (1992)']

[6, '10 Things I Hate About You (1999)']

[6, 'Love Actually (2003)']

[6, 'Much Ado About Nothing (1993)']

[6, 'My Big Fat Greek Wedding (2002)']

[6, 'Chocolat (2000)']

[6, "You've Got Mail (1998)"]

[6, 'Legally Blonde (2001)']

[6, 'Phenomenon (1996)']

[6, 'Miss Congeniality (2000)']

[6, 'Field of Dreams (1989)']

[6, 'Sabrina (1995)']

[6, 'Crocodile Dundee (1986)']

[6, 'Dirty Dancing (1987)']

[6, 'Thelma & Louise (1991)']

[6, 'Grumpier Old Men (1995)']

[6, "City Slickers II: The Legend of Curly's Gold (1994)"]

[6, 'Father of the Bride Part II (1995)']

[6, 'Rob Roy (1995)']

[6, 'What Women Want (2000)']

[6, 'Crying Game, The (1992)']

[6, 'French Kiss (1995)']

[6, 'First Knight (1995)']

--------- NEW CLUSTER -----------

[7, 'Monty Python and the Holy Grail (1975)']

[7, 'Groundhog Day (1993)']

[7, 'Ace Ventura: Pet Detective (1994)']

[7, 'Mask, The (1994)']

[7, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[7, 'Big Lebowski, The (1998)']

[7, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[7, "Ferris Bueller's Day Off (1986)"]

[7, "There's Something About Mary (1998)"]

[7, 'Austin Powers: The Spy Who Shagged Me (1999)']

[7, 'American Pie (1999)']

[7, 'Breakfast Club, The (1985)']

[7, 'Clerks (1994)']

[7, 'Natural Born Killers (1994)']

[7, 'Austin Powers: International Man of Mystery (1997)']

[7, 'Office Space (1999)']

[7, "Monty Python's Life of Brian (1979)"]

[7, 'Get Shorty (1995)']

[7, 'Ace Ventura: When Nature Calls (1995)']

[7, 'Beetlejuice (1988)']

[7, 'Airplane! (1980)']

[7, 'Blues Brothers, The (1980)']

[7, 'Meet the Parents (2000)']

[7, 'Fish Called Wanda, A (1988)']

[7, 'Shaun of the Dead (2004)']

[7, 'Blair Witch Project, The (1999)']

[7, 'Happy Gilmore (1996)']

[7, 'Nutty Professor, The (1996)']

[7, 'Juno (2007)']

[7, 'Addams Family Values (1993)']

[7, 'South Park: Bigger, Longer and Uncut (1999)']

[7, 'Dogma (1999)']

[7, 'High Fidelity (2000)']

[7, 'Scream (1996)']

[7, 'This Is Spinal Tap (1984)']

[7, 'Hangover, The (2009)']

[7, 'Young Frankenstein (1974)']

[7, 'Ed Wood (1994)']

[7, 'Raising Arizona (1987)']

[7, 'Exorcist, The (1973)']

[7, '40-Year-Old Virgin, The (2005)']

[7, 'Rushmore (1998)']

[7, 'Cable Guy, The (1996)']

[7, 'Hot Fuzz (2007)']

[7, 'Robin Hood: Men in Tights (1993)']

[7, 'School of Rock (2003)']

[7, 'From Dusk Till Dawn (1996)']

[7, "Wayne's World (1992)"]

[7, 'Naked Gun 33 1/3: The Final Insult (1994)']

[7, 'Grosse Pointe Blank (1997)']

[7, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[7, 'Zombieland (2009)']

[7, 'Bowling for Columbine (2002)']

[7, 'Chasing Amy (1997)']

[7, 'Rocky Horror Picture Show, The (1975)']

[7, 'Election (1999)']

[7, 'Superbad (2007)']

[7, 'Christmas Story, A (1983)']

[7, 'Hot Shots! Part Deux (1993)']

[7, 'Ring, The (2002)']

[7, 'Spaceballs (1987)']

[7, 'Army of Darkness (1993)']

[7, 'Three Kings (1999)']

[7, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[7, 'Some Like It Hot (1959)']

[7, 'Animal House (1978)']

[7, 'Scary Movie (2000)']

[7, 'So I Married an Axe Murderer (1993)']

[7, 'Blazing Saddles (1974)']

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[8, 'Independence Day (a.k.a. ID4) (1996)']

[8, 'Men in Black (a.k.a. MIB) (1997)']

[8, 'Fifth Element, The (1997)']

[8, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[8, 'Star Wars: Episode I - The Phantom Menace (1999)']

[8, 'Twister (1996)']

[8, 'Stargate (1994)']

[8, 'Waterworld (1995)']

[8, 'Star Trek: Generations (1994)']

[8, 'Matrix Reloaded, The (2003)']

[8, 'Back to the Future Part II (1989)']

[8, 'Armageddon (1998)']

[8, 'Total Recall (1990)']

[8, 'Back to the Future Part III (1990)']

[8, 'Contact (1997)']

[8, 'Star Wars: Episode II - Attack of the Clones (2002)']

[8, 'Star Trek: First Contact (1996)']

[8, 'Mummy, The (1999)']

[8, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[8, 'Demolition Man (1993)']

[8, 'Matrix Revolutions, The (2003)']

[8, 'Mars Attacks! (1996)']

[8, 'I, Robot (2004)']

[8, 'Starship Troopers (1997)']

[8, 'Predator (1987)']

[8, 'Star Trek (2009)']

[8, 'Lost World: Jurassic Park, The (1997)']

[8, 'Star Trek II: The Wrath of Khan (1982)']

[8, 'Judge Dredd (1995)']

[8, 'Galaxy Quest (1999)']

[8, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[8, 'I Am Legend (2007)']

[8, 'A.I. Artificial Intelligence (2001)']

[8, 'Alien³ (a.k.a. Alien 3) (1992)']

[8, 'Signs (2002)']

[8, 'The Hunger Games (2012)']

[8, 'Coneheads (1993)']

[8, 'Species (1995)']

[8, 'Star Wars: Episode VII - The Force Awakens (2015)']

[8, 'Star Trek IV: The Voyage Home (1986)']

[8, 'Johnny Mnemonic (1995)']

[8, 'Serenity (2005)']

[8, 'Wild Wild West (1999)']

[8, 'Deep Impact (1998)']

[8, 'Terminator 3: Rise of the Machines (2003)']

[8, 'Alien: Resurrection (1997)']

[8, 'X-Files: Fight the Future, The (1998)']

[8, 'Highlander (1986)']

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[9, 'Toy Story (1995)']

[9, 'Aladdin (1992)']

[9, 'Lion King, The (1994)']

[9, 'Shrek (2001)']

[9, 'Princess Bride, The (1987)']

[9, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[9, 'Beauty and the Beast (1991)']

[9, 'Finding Nemo (2003)']

[9, 'E.T. the Extra-Terrestrial (1982)']

[9, 'Monsters, Inc. (2001)']

[9, 'Babe (1995)']

[9, 'Incredibles, The (2004)']

[9, 'Willy Wonka & the Chocolate Factory (1971)']

[9, 'Toy Story 2 (1999)']

[9, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[9, 'Up (2009)']

[9, 'Wizard of Oz, The (1939)']

[9, 'Jumanji (1995)']

[9, 'Harry Potter and the Prisoner of Azkaban (2004)']

[9, "Bug's Life, A (1998)"]

[9, 'Harry Potter and the Chamber of Secrets (2002)']

[9, 'Who Framed Roger Rabbit? (1988)']

[9, 'Shrek 2 (2004)']

[9, 'Ratatouille (2007)']

[9, 'Harry Potter and the Goblet of Fire (2005)']

[9, 'Chicken Run (2000)']

[9, 'Ice Age (2002)']

[9, 'Snow White and the Seven Dwarfs (1937)']

[9, 'Honey, I Shrunk the Kids (1989)']

[9, 'Santa Clause, The (1994)']

[9, 'Wallace & Gromit: The Wrong Trousers (1993)']

[9, 'Little Mermaid, The (1989)']

[9, 'Mary Poppins (1964)']

[9, 'Toy Story 3 (2010)']

[9, 'Harry Potter and the Order of the Phoenix (2007)']

[9, 'Harry Potter and the Half-Blood Prince (2009)']

[9, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[9, 'How to Train Your Dragon (2010)']

[9, 'Dragonheart (1996)']

[9, 'Inside Out (2015)']

[9, 'Pocahontas (1995)']

[9, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[9, 'Pinocchio (1940)']

[9, 'Casper (1995)']

[9, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[9, 'Charlie and the Chocolate Factory (2005)']

[9, 'Fantasia (1940)']

[9, 'Wallace & Gromit: A Close Shave (1995)']

[9, 'Goonies, The (1985)']

[9, 'Gremlins (1984)']

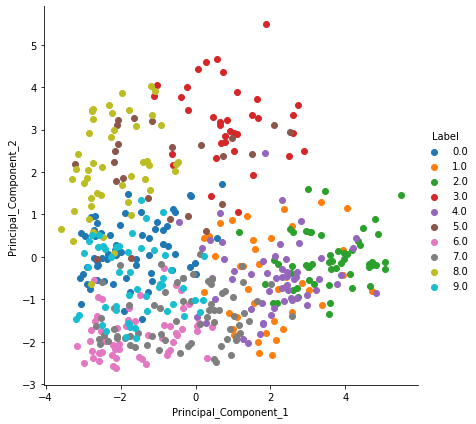
[9, 'Kung Fu Panda (2008)']

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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09950293255607767

Davies-Bouldin Index: 2.3063075954964725

Calinski-Harabasz Score: 32.26536533622842

Test 5

Test type: KMeans

Parameters: Num Clusters i = 11

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[0, 'Matrix, The (1999)']

[0, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[0, 'Inception (2010)']

[0, 'Blade Runner (1982)']

[0, 'Alien (1979)']

[0, 'Truman Show, The (1998)']

[0, 'Eternal Sunshine of the Spotless Mind (2004)']

[0, 'Minority Report (2002)']

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[0, 'WALL·E (2008)']

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[0, 'V for Vendetta (2006)']

[0, 'Interstellar (2014)']

[0, 'Gattaca (1997)']

[0, 'Contact (1997)']

[0, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[0, 'District 9 (2009)']

[0, 'Abyss, The (1989)']

[0, 'The Martian (2015)']

[0, 'Brazil (1985)']

[0, 'Children of Men (2006)']

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[0, 'Planet of the Apes (1968)']

[0, 'Ex Machina (2015)']

[0, 'Gravity (2013)']

[0, 'Dark City (1998)']

--------- NEW CLUSTER -----------

[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Mask, The (1994)']

[1, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[1, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[1, "There's Something About Mary (1998)"]

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

[1, 'Austin Powers: International Man of Mystery (1997)']

[1, 'Get Shorty (1995)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Beetlejuice (1988)']

[1, 'Airplane! (1980)']

[1, 'Blues Brothers, The (1980)']

[1, 'Meet the Parents (2000)']

[1, 'Shaun of the Dead (2004)']

[1, 'Blair Witch Project, The (1999)']

[1, 'Happy Gilmore (1996)']

[1, 'Nutty Professor, The (1996)']

[1, 'Liar Liar (1997)']

[1, 'Addams Family Values (1993)']

[1, 'Mars Attacks! (1996)']

[1, 'South Park: Bigger, Longer and Uncut (1999)']

[1, 'Dogma (1999)']

[1, 'Scream (1996)']

[1, 'This Is Spinal Tap (1984)']

[1, 'Hangover, The (2009)']

[1, 'Young Frankenstein (1974)']

[1, 'Bruce Almighty (2003)']

[1, '40-Year-Old Virgin, The (2005)']

[1, 'Cable Guy, The (1996)']

[1, 'Hot Fuzz (2007)']

[1, 'Robin Hood: Men in Tights (1993)']

[1, 'School of Rock (2003)']

[1, 'From Dusk Till Dawn (1996)']

[1, "Wayne's World (1992)"]

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[1, 'Zombieland (2009)']

[1, 'Batman Returns (1992)']

[1, 'Rocky Horror Picture Show, The (1975)']

[1, 'Coneheads (1993)']

[1, 'Last Action Hero (1993)']

[1, 'Superbad (2007)']

[1, 'Hot Shots! Part Deux (1993)']

[1, 'Arachnophobia (1990)']

[1, 'Spaceballs (1987)']

[1, 'Army of Darkness (1993)']

[1, 'Gremlins (1984)']

[1, 'Animal House (1978)']

[1, 'Scary Movie (2000)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'Blazing Saddles (1974)']

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[2, 'Titanic (1997)']

[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

[2, 'Home Alone (1990)']

[2, 'Ghost (1990)']

[2, 'Sleepless in Seattle (1993)']

[2, 'Four Weddings and a Funeral (1994)']

[2, 'Clueless (1995)']

[2, 'Shakespeare in Love (1998)']

[2, 'When Harry Met Sally... (1989)']

[2, 'Jerry Maguire (1996)']

[2, 'While You Were Sleeping (1995)']

[2, 'Birdcage, The (1996)']

[2, 'Top Gun (1986)']

[2, 'Big (1988)']

[2, 'Sense and Sensibility (1995)']

[2, "Mr. Holland's Opus (1995)"]

[2, 'Erin Brockovich (2000)']

[2, 'Dave (1993)']

[2, 'American President, The (1995)']

[2, 'Grease (1978)']

[2, 'Legends of the Fall (1994)']

[2, 'Sound of Music, The (1965)']

[2, "Bridget Jones's Diary (2001)"]

[2, 'Full Monty, The (1997)']

[2, 'English Patient, The (1996)']

[2, 'Gone with the Wind (1939)']

[2, 'Notting Hill (1999)']

[2, 'Moulin Rouge (2001)']

[2, 'Wedding Singer, The (1998)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, 'My Cousin Vinny (1992)']

[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, 'Romancing the Stone (1984)']

[2, 'Much Ado About Nothing (1993)']

[2, 'My Big Fat Greek Wedding (2002)']

[2, 'Chocolat (2000)']

[2, "You've Got Mail (1998)"]

[2, 'Legally Blonde (2001)']

[2, 'Phenomenon (1996)']

[2, 'Miss Congeniality (2000)']

[2, 'Field of Dreams (1989)']

[2, 'Sabrina (1995)']

[2, 'Crocodile Dundee (1986)']

[2, 'Dirty Dancing (1987)']

[2, 'Thelma & Louise (1991)']

[2, 'Grumpier Old Men (1995)']

[2, "City Slickers II: The Legend of Curly's Gold (1994)"]

[2, 'Father of the Bride Part II (1995)']

[2, 'Rob Roy (1995)']

[2, 'What Women Want (2000)']

[2, 'Crying Game, The (1992)']

[2, 'French Kiss (1995)']

[2, 'First Knight (1995)']

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[3, 'Pulp Fiction (1994)']

[3, 'Silence of the Lambs, The (1991)']

[3, 'Fight Club (1999)']

[3, 'Usual Suspects, The (1995)']

[3, 'Godfather, The (1972)']

[3, 'Fargo (1996)']

[3, 'Reservoir Dogs (1992)']

[3, 'Godfather: Part II, The (1974)']

[3, 'Kill Bill: Vol. 1 (2003)']

[3, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[3, 'Goodfellas (1990)']

[3, 'American History X (1998)']

[3, 'Clockwork Orange, A (1971)']

[3, 'Taxi Driver (1976)']

[3, 'Trainspotting (1996)']

[3, 'Kill Bill: Vol. 2 (2004)']

[3, 'L.A. Confidential (1997)']

[3, 'Apocalypse Now (1979)']

[3, 'Full Metal Jacket (1987)']

[3, 'Departed, The (2006)']

[3, 'Snatch (2000)']

[3, 'Heat (1995)']

[3, 'Inglourious Basterds (2009)']

[3, 'Sin City (2005)']

[3, 'Requiem for a Dream (2000)']

[3, 'Django Unchained (2012)']

[3, 'City of God (Cidade de Deus) (2002)']

[3, 'Lock, Stock & Two Smoking Barrels (1998)']

[3, 'No Country for Old Men (2007)']

[3, 'Casino (1995)']

[3, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[3, 'Traffic (2000)']

[3, 'Untouchables, The (1987)']

[3, 'Wolf of Wall Street, The (2013)']

[3, 'Sting, The (1973)']

[3, 'True Romance (1993)']

[3, 'Scarface (1983)']

[3, 'Unforgiven (1992)']

[3, 'Jackie Brown (1997)']

[3, 'Old Boy (2003)']

[3, 'Mystic River (2003)']

--------- NEW CLUSTER -----------

[4, 'Seven (a.k.a. Se7en) (1995)']

[4, 'Sixth Sense, The (1999)']

[4, 'Memento (2000)']

[4, 'Shining, The (1980)']

[4, 'Natural Born Killers (1994)']

[4, 'Prestige, The (2006)']

[4, 'Psycho (1960)']

[4, 'Rear Window (1954)']

[4, 'Shutter Island (2010)']

[4, 'Game, The (1997)']

[4, 'Chinatown (1974)']

[4, 'North by Northwest (1959)']

[4, 'Unbreakable (2000)']

[4, '28 Days Later (2002)']

[4, 'Eyes Wide Shut (1999)']

[4, 'Vertigo (1958)']

[4, 'The Butterfly Effect (2004)']

[4, 'Exorcist, The (1973)']

[4, 'Sleepy Hollow (1999)']

[4, 'Talented Mr. Ripley, The (1999)']

[4, 'Black Swan (2010)']

[4, "The Devil's Advocate (1997)"]

[4, 'Others, The (2001)']

[4, 'Gone Girl (2014)']

[4, 'Ring, The (2002)']

[4, 'American Psycho (2000)']

[4, 'Mulholland Drive (2001)']

[4, 'Maltese Falcon, The (1941)']

[4, 'Illusionist, The (2006)']

[4, 'Birds, The (1963)']

--------- NEW CLUSTER -----------

[5, 'Independence Day (a.k.a. ID4) (1996)']

[5, 'Men in Black (a.k.a. MIB) (1997)']

[5, 'Fifth Element, The (1997)']

[5, 'Star Wars: Episode I - The Phantom Menace (1999)']

[5, 'Twister (1996)']

[5, 'Stargate (1994)']

[5, 'Waterworld (1995)']

[5, 'Star Trek: Generations (1994)']

[5, 'Avatar (2009)']

[5, 'Matrix Reloaded, The (2003)']

[5, 'Back to the Future Part II (1989)']

[5, 'Armageddon (1998)']

[5, 'Total Recall (1990)']

[5, 'Back to the Future Part III (1990)']

[5, 'Star Wars: Episode II - Attack of the Clones (2002)']

[5, 'Star Trek: First Contact (1996)']

[5, 'Mummy, The (1999)']

[5, 'Demolition Man (1993)']

[5, 'Matrix Revolutions, The (2003)']

[5, 'I, Robot (2004)']

[5, 'Starship Troopers (1997)']

[5, 'Predator (1987)']

[5, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[5, 'Lost World: Jurassic Park, The (1997)']

[5, 'Star Trek II: The Wrath of Khan (1982)']

[5, 'RoboCop (1987)']

[5, 'Judge Dredd (1995)']

[5, 'Galaxy Quest (1999)']

[5, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[5, 'I Am Legend (2007)']

[5, 'Alien³ (a.k.a. Alien 3) (1992)']

[5, 'Signs (2002)']

[5, 'The Hunger Games (2012)']

[5, 'Species (1995)']

[5, 'Star Trek IV: The Voyage Home (1986)']

[5, 'Edge of Tomorrow (2014)']

[5, 'Johnny Mnemonic (1995)']

[5, 'Serenity (2005)']

[5, 'Iron Man 2 (2010)']

[5, 'Wild Wild West (1999)']

[5, 'Deep Impact (1998)']

[5, 'Terminator 3: Rise of the Machines (2003)']

[5, 'Alien: Resurrection (1997)']

[5, 'X-Files: Fight the Future, The (1998)']

[5, "Pirates of the Caribbean: At World's End (2007)"]

--------- NEW CLUSTER -----------

[6, 'Forrest Gump (1994)']

[6, 'Shawshank Redemption, The (1994)']

[6, "Schindler's List (1993)"]

[6, 'Braveheart (1995)']

[6, 'Apollo 13 (1995)']

[6, 'Saving Private Ryan (1998)']

[6, 'Gladiator (2000)']

[6, 'Dances with Wolves (1990)']

[6, 'Good Will Hunting (1997)']

[6, "One Flew Over the Cuckoo's Nest (1975)"]

[6, 'Beautiful Mind, A (2001)']

[6, 'Green Mile, The (1999)']

[6, 'Catch Me If You Can (2002)']

[6, 'Rain Man (1988)']

[6, 'Casablanca (1942)']

[6, 'Cast Away (2000)']

[6, 'Dead Poets Society (1989)']

[6, 'Jaws (1975)']

[6, 'Life Is Beautiful (La Vita è bella) (1997)']

[6, 'As Good as It Gets (1997)']

[6, 'Stand by Me (1986)']

[6, 'Amadeus (1984)']

[6, 'Philadelphia (1993)']

[6, 'Dead Man Walking (1995)']

[6, 'Slumdog Millionaire (2008)']

[6, 'Pianist, The (2002)']

[6, 'Rocky (1976)']

[6, 'Platoon (1986)']

[6, '12 Angry Men (1957)']

[6, 'Few Good Men, A (1992)']

[6, 'To Kill a Mockingbird (1962)']

[6, 'Last Samurai, The (2003)']

[6, 'The Imitation Game (2014)']

[6, "It's a Wonderful Life (1946)"]

[6, "King's Speech, The (2010)"]

[6, 'Million Dollar Baby (2004)']

[6, 'Social Network, The (2010)']

[6, 'Boot, Das (Boat, The) (1981)']

[6, 'Black Hawk Down (2001)']

[6, 'Gran Torino (2008)']

[6, 'Seven Samurai (Shichinin no samurai) (1954)']

[6, 'Lawrence of Arabia (1962)']

[6, 'Intouchables (2011)']

[6, 'Sling Blade (1996)']

[6, 'Bridge on the River Kwai, The (1957)']

[6, 'Blood Diamond (2006)']

[6, 'Good Morning, Vietnam (1987)']

[6, 'Last of the Mohicans, The (1992)']

[6, 'Glory (1989)']

[6, 'Cool Hand Luke (1967)']

[6, 'Hotel Rwanda (2004)']

[6, 'Crash (2004)']

[6, 'Deer Hunter, The (1978)']

[6, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[7, 'Star Wars: Episode IV - A New Hope (1977)']

[7, 'Jurassic Park (1993)']

[7, 'Terminator 2: Judgment Day (1991)']

[7, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[7, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[7, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[7, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[7, 'Lord of the Rings: The Two Towers, The (2002)']

[7, 'Lord of the Rings: The Return of the King, The (2003)']

[7, 'Back to the Future (1985)']

[7, 'Batman (1989)']

[7, 'Dark Knight, The (2008)']

[7, 'Terminator, The (1984)']

[7, 'Indiana Jones and the Last Crusade (1989)']

[7, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[7, 'Die Hard (1988)']

[7, 'X-Men (2000)']

[7, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[7, 'Aliens (1986)']

[7, 'Batman Begins (2005)']

[7, 'Spider-Man (2002)']

[7, 'Iron Man (2008)']

[7, 'Indiana Jones and the Temple of Doom (1984)']

[7, 'Spider-Man 2 (2004)']

[7, 'X2: X-Men United (2003)']

[7, 'Dark Knight Rises, The (2012)']

[7, '300 (2007)']

[7, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[7, 'Avengers, The (2012)']

[7, 'Guardians of the Galaxy (2014)']

[7, 'Crow, The (1994)']

[7, 'Star Trek (2009)']

[7, 'Superman (1978)']

[7, 'Deadpool (2016)']

[7, 'Mad Max: Fury Road (2015)']

[7, 'Blade (1998)']

[7, 'Star Wars: Episode VII - The Force Awakens (2015)']

[7, 'Watchmen (2009)']

[7, 'Highlander (1986)']

--------- NEW CLUSTER -----------

[8, 'American Beauty (1999)']

[8, 'Princess Bride, The (1987)']

[8, 'Monty Python and the Holy Grail (1975)']

[8, 'Groundhog Day (1993)']

[8, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[8, 'Being John Malkovich (1999)']

[8, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[8, 'Big Lebowski, The (1998)']

[8, "Ferris Bueller's Day Off (1986)"]

[8, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[8, 'Breakfast Club, The (1985)']

[8, 'Clerks (1994)']

[8, 'Edward Scissorhands (1990)']

[8, 'O Brother, Where Art Thou? (2000)']

[8, 'Office Space (1999)']

[8, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[8, "Monty Python's Life of Brian (1979)"]

[8, 'Lost in Translation (2003)']

[8, 'Leaving Las Vegas (1995)']

[8, 'Almost Famous (2000)']

[8, 'Fish Called Wanda, A (1988)']

[8, 'Citizen Kane (1941)']

[8, 'Little Miss Sunshine (2006)']

[8, 'Quiz Show (1994)']

[8, 'Run Lola Run (Lola rennt) (1998)']

[8, 'Graduate, The (1967)']

[8, 'Juno (2007)']

[8, 'Big Fish (2003)']

[8, "What's Eating Gilbert Grape (1993)"]

[8, 'High Fidelity (2000)']

[8, 'Annie Hall (1977)']

[8, 'Piano, The (1993)']

[8, 'Royal Tenenbaums, The (2001)']

[8, 'Ed Wood (1994)']

[8, 'Raising Arizona (1987)']

[8, 'Butch Cassidy and the Sundance Kid (1969)']

[8, 'Rushmore (1998)']

[8, 'Grosse Pointe Blank (1997)']

[8, 'Boogie Nights (1997)']

[8, 'Bowling for Columbine (2002)']

[8, 'Pleasantville (1998)']

[8, 'Chasing Amy (1997)']

[8, 'Election (1999)']

[8, 'Princess Mononoke (Mononoke-hime) (1997)']

[8, 'Grand Budapest Hotel, The (2014)']

[8, 'Christmas Story, A (1983)']

[8, 'Magnolia (1999)']

[8, 'Three Kings (1999)']

[8, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[8, 'Some Like It Hot (1959)']

[8, '(500) Days of Summer (2009)']

[8, 'Garden State (2004)']

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[9, 'Fugitive, The (1993)']

[9, 'True Lies (1994)']

[9, 'Speed (1994)']

[9, 'Mission: Impossible (1996)']

[9, 'Die Hard: With a Vengeance (1995)']

[9, 'Rock, The (1996)']

[9, "Ocean's Eleven (2001)"]

[9, 'Batman Forever (1995)']

[9, 'Bourne Identity, The (2002)']

[9, 'GoldenEye (1995)']

[9, 'Clear and Present Danger (1994)']

[9, 'Outbreak (1995)']

[9, 'Firm, The (1993)']

[9, 'Cliffhanger (1993)']

[9, 'Net, The (1995)']

[9, 'Crimson Tide (1995)']

[9, 'Hunt for Red October, The (1990)']

[9, 'Broken Arrow (1996)']

[9, 'Bourne Ultimatum, The (2007)']

[9, 'Casino Royale (2006)']

[9, 'Face/Off (1997)']

[9, 'Bourne Supremacy, The (2004)']

[9, 'Lethal Weapon (1987)']

[9, 'Mission: Impossible II (2000)']

[9, 'In the Line of Fire (1993)']

[9, "Charlie's Angels (2000)"]

[9, 'Die Hard 2 (1990)']

[9, 'Maverick (1994)']

[9, 'Enemy of the State (1998)']

[9, 'Eraser (1996)']

[9, 'Patriot, The (2000)']

[9, 'Con Air (1997)']

[9, 'Air Force One (1997)']

[9, 'Client, The (1994)']

[9, 'Sherlock Holmes (2009)']

[9, 'Tombstone (1993)']

[9, 'Desperado (1995)']

[9, 'Beverly Hills Cop III (1994)']

[9, 'Congo (1995)']

[9, 'Mask of Zorro, The (1998)']

[9, 'Ransom (1996)']

[9, 'Italian Job, The (2003)']

[9, 'Lethal Weapon 2 (1989)']

[9, 'Mr. & Mrs. Smith (2005)']

[9, 'Bad Boys (1995)']

[9, 'Tomorrow Never Dies (1997)']

[9, 'Goldfinger (1964)']

[9, 'Three Musketeers, The (1993)']

[9, 'Sneakers (1992)']

[9, 'Rush Hour (1998)']

[9, 'Thomas Crown Affair, The (1999)']

[9, 'Disclosure (1994)']

[9, 'Beverly Hills Cop (1984)']

[9, 'Gone in 60 Seconds (2000)']

[9, 'Taken (2008)']

[9, 'Executive Decision (1996)']

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[10, 'Toy Story (1995)']

[10, 'Aladdin (1992)']

[10, 'Lion King, The (1994)']

[10, 'Shrek (2001)']

[10, 'Beauty and the Beast (1991)']

[10, 'Finding Nemo (2003)']

[10, 'E.T. the Extra-Terrestrial (1982)']

[10, 'Monsters, Inc. (2001)']

[10, 'Babe (1995)']

[10, 'Incredibles, The (2004)']

[10, 'Willy Wonka & the Chocolate Factory (1971)']

[10, 'Toy Story 2 (1999)']

[10, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[10, 'Up (2009)']

[10, 'Wizard of Oz, The (1939)']

[10, 'Jumanji (1995)']

[10, 'Harry Potter and the Prisoner of Azkaban (2004)']

[10, "Bug's Life, A (1998)"]

[10, 'Harry Potter and the Chamber of Secrets (2002)']

[10, 'Nightmare Before Christmas, The (1993)']

[10, 'Who Framed Roger Rabbit? (1988)']

[10, 'Shrek 2 (2004)']

[10, 'Ratatouille (2007)']

[10, 'Harry Potter and the Goblet of Fire (2005)']

[10, 'Chicken Run (2000)']

[10, 'Ice Age (2002)']

[10, 'Snow White and the Seven Dwarfs (1937)']

[10, 'Honey, I Shrunk the Kids (1989)']

[10, 'Santa Clause, The (1994)']

[10, 'Wallace & Gromit: The Wrong Trousers (1993)']

[10, 'Little Mermaid, The (1989)']

[10, 'Mary Poppins (1964)']

[10, 'Toy Story 3 (2010)']

[10, 'Harry Potter and the Order of the Phoenix (2007)']

[10, 'Harry Potter and the Half-Blood Prince (2009)']

[10, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[10, 'How to Train Your Dragon (2010)']

[10, 'Dragonheart (1996)']

[10, 'Inside Out (2015)']

[10, 'Pocahontas (1995)']

[10, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[10, 'Pinocchio (1940)']

[10, 'Casper (1995)']

[10, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[10, 'Charlie and the Chocolate Factory (2005)']

[10, 'Fantasia (1940)']

[10, 'Wallace & Gromit: A Close Shave (1995)']

[10, 'Goonies, The (1985)']

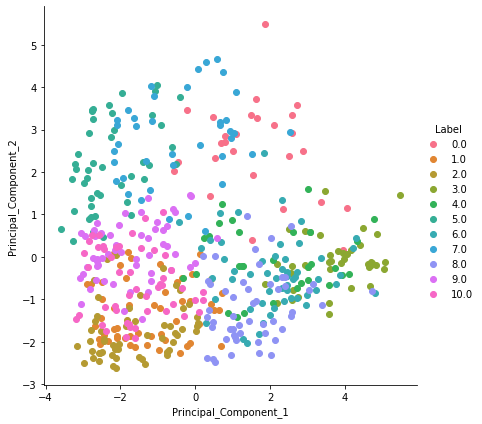
[10, 'Kung Fu Panda (2008)']

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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09800285914946824

Davies-Bouldin Index: 2.325622806947642

Calinski-Harabasz Score: 30.547209957164874

Test 6

Test type: KMeans

Parameters: Num Clusters i = 12

--------- NEW CLUSTER -----------

[0, 'Matrix, The (1999)']

[0, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[0, 'Inception (2010)']

[0, 'Blade Runner (1982)']

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[0, 'District 9 (2009)']

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[0, 'The Butterfly Effect (2004)']

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[0, 'Children of Men (2006)']

[0, 'A.I. Artificial Intelligence (2001)']

[0, 'Pleasantville (1998)']

[0, 'Planet of the Apes (1968)']

[0, 'Ex Machina (2015)']

[0, 'Gravity (2013)']

[0, 'Dark City (1998)']

--------- NEW CLUSTER -----------

[1, 'Forrest Gump (1994)']

[1, 'Shawshank Redemption, The (1994)']

[1, "Schindler's List (1993)"]

[1, 'Braveheart (1995)']

[1, 'Apollo 13 (1995)']

[1, 'Saving Private Ryan (1998)']

[1, 'Gladiator (2000)']

[1, 'Dances with Wolves (1990)']

[1, 'Good Will Hunting (1997)']

[1, "One Flew Over the Cuckoo's Nest (1975)"]

[1, 'Beautiful Mind, A (2001)']

[1, 'Green Mile, The (1999)']

[1, 'Catch Me If You Can (2002)']

[1, 'Rain Man (1988)']

[1, 'Casablanca (1942)']

[1, 'Cast Away (2000)']

[1, 'Dead Poets Society (1989)']

[1, 'Life Is Beautiful (La Vita è bella) (1997)']

[1, 'As Good as It Gets (1997)']

[1, 'Stand by Me (1986)']

[1, 'Amadeus (1984)']

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[1, 'Almost Famous (2000)']

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[1, 'Platoon (1986)']

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[1, 'Last Samurai, The (2003)']

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[1, 'Boot, Das (Boat, The) (1981)']

[1, 'Black Hawk Down (2001)']

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[1, 'Seven Samurai (Shichinin no samurai) (1954)']

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[1, 'Intouchables (2011)']

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[1, 'Blood Diamond (2006)']

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[1, 'Last of the Mohicans, The (1992)']

[1, 'Glory (1989)']

[1, 'Cool Hand Luke (1967)']

[1, 'Hotel Rwanda (2004)']

[1, 'Crash (2004)']

[1, 'Deer Hunter, The (1978)']

[1, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[2, 'Sixth Sense, The (1999)']

[2, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[2, 'Eternal Sunshine of the Spotless Mind (2004)']

[2, 'Being John Malkovich (1999)']

[2, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[2, 'Donnie Darko (2001)']

[2, 'Edward Scissorhands (1990)']

[2, 'Prestige, The (2006)']

[2, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[2, 'Nightmare Before Christmas, The (1993)']

[2, 'Lost in Translation (2003)']

[2, 'Rear Window (1954)']

[2, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[2, 'Citizen Kane (1941)']

[2, 'Run Lola Run (Lola rennt) (1998)']

[2, 'Shutter Island (2010)']

[2, 'Game, The (1997)']

[2, 'Big Fish (2003)']

[2, 'North by Northwest (1959)']

[2, 'Unbreakable (2000)']

[2, '28 Days Later (2002)']

[2, 'Eyes Wide Shut (1999)']

[2, 'Piano, The (1993)']

[2, 'Vertigo (1958)']

[2, 'Exorcist, The (1973)']

[2, 'Sleepy Hollow (1999)']

[2, 'Talented Mr. Ripley, The (1999)']

[2, 'Black Swan (2010)']

[2, "The Devil's Advocate (1997)"]

[2, 'Others, The (2001)']

[2, 'Princess Mononoke (Mononoke-hime) (1997)']

[2, 'Grand Budapest Hotel, The (2014)']

[2, 'Gone Girl (2014)']

[2, 'Ring, The (2002)']

[2, 'Mulholland Drive (2001)']

[2, 'Illusionist, The (2006)']

[2, 'Birds, The (1963)']

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[3, 'Independence Day (a.k.a. ID4) (1996)']

[3, 'Men in Black (a.k.a. MIB) (1997)']

[3, 'Star Wars: Episode I - The Phantom Menace (1999)']

[3, 'Twister (1996)']

[3, 'Stargate (1994)']

[3, 'Waterworld (1995)']

[3, 'Star Trek: Generations (1994)']

[3, 'Matrix Reloaded, The (2003)']

[3, 'Back to the Future Part II (1989)']

[3, 'Armageddon (1998)']

[3, 'Back to the Future Part III (1990)']

[3, 'Star Wars: Episode II - Attack of the Clones (2002)']

[3, 'Star Trek: First Contact (1996)']

[3, 'Mummy, The (1999)']

[3, 'Demolition Man (1993)']

[3, 'Matrix Revolutions, The (2003)']

[3, 'Mars Attacks! (1996)']

[3, 'I, Robot (2004)']

[3, 'Starship Troopers (1997)']

[3, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[3, 'Lost World: Jurassic Park, The (1997)']

[3, 'Judge Dredd (1995)']

[3, 'Galaxy Quest (1999)']

[3, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[3, 'I Am Legend (2007)']

[3, 'Congo (1995)']

[3, 'Alien³ (a.k.a. Alien 3) (1992)']

[3, 'Signs (2002)']

[3, 'The Hunger Games (2012)']

[3, 'Dragonheart (1996)']

[3, 'Species (1995)']

[3, 'Star Trek IV: The Voyage Home (1986)']

[3, 'Johnny Mnemonic (1995)']

[3, 'Wild Wild West (1999)']

[3, 'Deep Impact (1998)']

[3, 'Terminator 3: Rise of the Machines (2003)']

[3, 'Alien: Resurrection (1997)']

[3, 'X-Files: Fight the Future, The (1998)']

[3, "Pirates of the Caribbean: At World's End (2007)"]

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[4, "Ferris Bueller's Day Off (1986)"]

[4, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[4, 'Breakfast Club, The (1985)']

[4, 'Clerks (1994)']

[4, 'O Brother, Where Art Thou? (2000)']

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[4, 'Fish Called Wanda, A (1988)']

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[5, 'X2: X-Men United (2003)']

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[5, 'Guardians of the Galaxy (2014)']

[5, 'Crow, The (1994)']

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[5, 'Superman (1978)']

[5, 'Sherlock Holmes (2009)']

[5, 'Deadpool (2016)']

[5, 'Batman Returns (1992)']

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[6, 'Broken Arrow (1996)']

[6, 'Bourne Ultimatum, The (2007)']

[6, 'Casino Royale (2006)']

[6, 'Top Gun (1986)']

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[6, 'Mission: Impossible II (2000)']

[6, 'In the Line of Fire (1993)']

[6, "Charlie's Angels (2000)"]

[6, 'Die Hard 2 (1990)']

[6, 'Maverick (1994)']

[6, 'Enemy of the State (1998)']

[6, 'Eraser (1996)']

[6, 'Patriot, The (2000)']

[6, 'Con Air (1997)']

[6, 'Air Force One (1997)']

[6, 'Client, The (1994)']

[6, 'Tombstone (1993)']

[6, 'Desperado (1995)']

[6, 'Beverly Hills Cop III (1994)']

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[6, 'Ransom (1996)']

[6, 'Italian Job, The (2003)']

[6, 'Lethal Weapon 2 (1989)']

[6, 'Romancing the Stone (1984)']

[6, 'Mr. & Mrs. Smith (2005)']

[6, 'Bad Boys (1995)']

[6, 'Tomorrow Never Dies (1997)']

[6, 'Goldfinger (1964)']

[6, 'Three Musketeers, The (1993)']

[6, 'Sneakers (1992)']

[6, 'Rush Hour (1998)']

[6, 'Thomas Crown Affair, The (1999)']

[6, 'Disclosure (1994)']

[6, 'Beverly Hills Cop (1984)']

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[7, 'Beauty and the Beast (1991)']

[7, 'Finding Nemo (2003)']

[7, 'Monsters, Inc. (2001)']

[7, 'Babe (1995)']

[7, 'Incredibles, The (2004)']

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[7, 'Up (2009)']

[7, 'Wizard of Oz, The (1939)']

[7, 'Jumanji (1995)']

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, "Bug's Life, A (1998)"]

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Who Framed Roger Rabbit? (1988)']

[7, 'Big (1988)']

[7, 'Shrek 2 (2004)']

[7, 'Ratatouille (2007)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Chicken Run (2000)']

[7, 'Ice Age (2002)']

[7, 'Snow White and the Seven Dwarfs (1937)']

[7, 'Honey, I Shrunk the Kids (1989)']

[7, 'Santa Clause, The (1994)']

[7, 'Wallace & Gromit: The Wrong Trousers (1993)']

[7, 'Little Mermaid, The (1989)']

[7, 'Mary Poppins (1964)']

[7, 'Toy Story 3 (2010)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'How to Train Your Dragon (2010)']

[7, 'Inside Out (2015)']

[7, 'Pocahontas (1995)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Pinocchio (1940)']

[7, 'Casper (1995)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Charlie and the Chocolate Factory (2005)']

[7, 'Fantasia (1940)']

[7, 'Wallace & Gromit: A Close Shave (1995)']

[7, 'Goonies, The (1985)']

[7, 'Gremlins (1984)']

[7, 'Kung Fu Panda (2008)']

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[8, 'Pulp Fiction (1994)']

[8, 'Silence of the Lambs, The (1991)']

[8, 'Fight Club (1999)']

[8, 'Usual Suspects, The (1995)']

[8, 'American Beauty (1999)']

[8, 'Godfather, The (1972)']

[8, 'Seven (a.k.a. Se7en) (1995)']

[8, 'Fargo (1996)']

[8, 'Memento (2000)']

[8, 'Reservoir Dogs (1992)']

[8, 'Godfather: Part II, The (1974)']

[8, 'Kill Bill: Vol. 1 (2003)']

[8, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[8, 'Goodfellas (1990)']

[8, 'American History X (1998)']

[8, 'Shining, The (1980)']

[8, 'Clockwork Orange, A (1971)']

[8, 'Taxi Driver (1976)']

[8, 'Trainspotting (1996)']

[8, 'Kill Bill: Vol. 2 (2004)']

[8, 'L.A. Confidential (1997)']

[8, 'Apocalypse Now (1979)']

[8, 'Full Metal Jacket (1987)']

[8, 'Departed, The (2006)']

[8, 'Snatch (2000)']

[8, 'Heat (1995)']

[8, 'Natural Born Killers (1994)']

[8, 'Inglourious Basterds (2009)']

[8, 'Sin City (2005)']

[8, 'Psycho (1960)']

[8, 'Requiem for a Dream (2000)']

[8, 'Django Unchained (2012)']

[8, 'Leaving Las Vegas (1995)']

[8, 'City of God (Cidade de Deus) (2002)']

[8, 'Lock, Stock & Two Smoking Barrels (1998)']

[8, 'No Country for Old Men (2007)']

[8, 'Casino (1995)']

[8, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[8, 'Traffic (2000)']

[8, 'Chinatown (1974)']

[8, 'Untouchables, The (1987)']

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[8, 'Unforgiven (1992)']

[8, 'Magnolia (1999)']

[8, 'American Psycho (2000)']

[8, 'Jackie Brown (1997)']

[8, 'Maltese Falcon, The (1941)']

[8, 'Old Boy (2003)']

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[9, 'Titanic (1997)']

[9, 'Pretty Woman (1990)']

[9, 'Mrs. Doubtfire (1993)']

[9, 'Ghost (1990)']

[9, 'Sleepless in Seattle (1993)']

[9, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[9, 'Four Weddings and a Funeral (1994)']

[9, 'Clueless (1995)']

[9, 'Shakespeare in Love (1998)']

[9, 'When Harry Met Sally... (1989)']

[9, 'Jerry Maguire (1996)']

[9, 'While You Were Sleeping (1995)']

[9, 'Birdcage, The (1996)']

[9, 'Sense and Sensibility (1995)']

[9, 'Quiz Show (1994)']

[9, "Mr. Holland's Opus (1995)"]

[9, 'Erin Brockovich (2000)']

[9, 'Dave (1993)']

[9, "What's Eating Gilbert Grape (1993)"]

[9, 'American President, The (1995)']

[9, 'Grease (1978)']

[9, 'Legends of the Fall (1994)']

[9, 'Sound of Music, The (1965)']

[9, "Bridget Jones's Diary (2001)"]

[9, 'Full Monty, The (1997)']

[9, 'English Patient, The (1996)']

[9, 'Gone with the Wind (1939)']

[9, 'Notting Hill (1999)']

[9, 'Moulin Rouge (2001)']

[9, 'Wedding Singer, The (1998)']

[9, 'Truth About Cats & Dogs, The (1996)']

[9, '10 Things I Hate About You (1999)']

[9, 'Love Actually (2003)']

[9, 'Much Ado About Nothing (1993)']

[9, 'My Big Fat Greek Wedding (2002)']

[9, 'Chocolat (2000)']

[9, "You've Got Mail (1998)"]

[9, 'Legally Blonde (2001)']

[9, 'Phenomenon (1996)']

[9, 'Miss Congeniality (2000)']

[9, 'Field of Dreams (1989)']

[9, 'Sabrina (1995)']

[9, 'Crocodile Dundee (1986)']

[9, 'Dirty Dancing (1987)']

[9, 'Thelma & Louise (1991)']

[9, 'Grumpier Old Men (1995)']

[9, "City Slickers II: The Legend of Curly's Gold (1994)"]

[9, 'Father of the Bride Part II (1995)']

[9, 'Rob Roy (1995)']

[9, 'What Women Want (2000)']

[9, '(500) Days of Summer (2009)']

[9, 'Crying Game, The (1992)']

[9, 'French Kiss (1995)']

[9, 'First Knight (1995)']

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[10, 'Star Wars: Episode IV - A New Hope (1977)']

[10, 'Jurassic Park (1993)']

[10, 'Terminator 2: Judgment Day (1991)']

[10, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[10, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[10, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[10, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[10, 'Lord of the Rings: The Two Towers, The (2002)']

[10, 'Lord of the Rings: The Return of the King, The (2003)']

[10, 'Back to the Future (1985)']

[10, 'Terminator, The (1984)']

[10, 'Indiana Jones and the Last Crusade (1989)']

[10, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[10, 'Die Hard (1988)']

[10, 'Alien (1979)']

[10, 'E.T. the Extra-Terrestrial (1982)']

[10, 'Fifth Element, The (1997)']

[10, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[10, 'Aliens (1986)']

[10, 'Avatar (2009)']

[10, 'Indiana Jones and the Temple of Doom (1984)']

[10, 'Jaws (1975)']

[10, 'Total Recall (1990)']

[10, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[10, 'Abyss, The (1989)']

[10, 'Predator (1987)']

[10, 'Star Trek (2009)']

[10, 'Star Trek II: The Wrath of Khan (1982)']

[10, 'Close Encounters of the Third Kind (1977)']

[10, 'Mad Max: Fury Road (2015)']

[10, 'Star Wars: Episode VII - The Force Awakens (2015)']

[10, 'Edge of Tomorrow (2014)']

[10, 'Serenity (2005)']

[10, 'Highlander (1986)']

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[11, 'Ace Ventura: Pet Detective (1994)']

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[11, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[11, "There's Something About Mary (1998)"]

[11, 'Austin Powers: The Spy Who Shagged Me (1999)']

[11, 'American Pie (1999)']

[11, 'Austin Powers: International Man of Mystery (1997)']

[11, 'Ace Ventura: When Nature Calls (1995)']

[11, 'Airplane! (1980)']

[11, 'Meet the Parents (2000)']

[11, 'Blair Witch Project, The (1999)']

[11, 'Happy Gilmore (1996)']

[11, 'Nutty Professor, The (1996)']

[11, 'Liar Liar (1997)']

[11, 'Addams Family Values (1993)']

[11, 'South Park: Bigger, Longer and Uncut (1999)']

[11, 'Scream (1996)']

[11, 'Hangover, The (2009)']

[11, 'Bruce Almighty (2003)']

[11, '40-Year-Old Virgin, The (2005)']

[11, 'Cable Guy, The (1996)']

[11, 'Robin Hood: Men in Tights (1993)']

[11, 'School of Rock (2003)']

[11, 'From Dusk Till Dawn (1996)']

[11, "Wayne's World (1992)"]

[11, 'Naked Gun 33 1/3: The Final Insult (1994)']

[11, 'My Cousin Vinny (1992)']

[11, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[11, 'Rocky Horror Picture Show, The (1975)']

[11, 'Coneheads (1993)']

[11, 'Last Action Hero (1993)']

[11, 'Superbad (2007)']

[11, 'Hot Shots! Part Deux (1993)']

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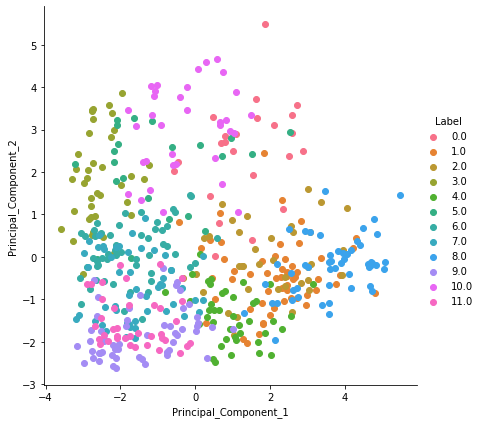
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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.10041287474076138

Davies-Bouldin Index: 2.2891088543977536

Calinski-Harabasz Score: 29.475253251123515

Running regular GMM on range

Test 7

Test type: GMM

Parameters: Num Components i = 6

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[0, 'Usual Suspects, The (1995)']

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[1, 'Matrix, The (1999)']

[1, 'Star Wars: Episode IV - A New Hope (1977)']

[1, 'Jurassic Park (1993)']

[1, 'Terminator 2: Judgment Day (1991)']

[1, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[1, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[1, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[1, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[1, 'Lord of the Rings: The Two Towers, The (2002)']

[1, 'Lord of the Rings: The Return of the King, The (2003)']

[1, 'Back to the Future (1985)']

[1, 'Independence Day (a.k.a. ID4) (1996)']

[1, 'Batman (1989)']

[1, 'Men in Black (a.k.a. MIB) (1997)']

[1, 'Terminator, The (1984)']

[1, 'Indiana Jones and the Last Crusade (1989)']

[1, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[1, 'Die Hard (1988)']

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[1, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[1, 'Star Wars: Episode I - The Phantom Menace (1999)']

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[1, 'Batman Begins (2005)']

[1, 'Minority Report (2002)']

[1, 'Spider-Man (2002)']

[1, 'Waterworld (1995)']

[1, 'V for Vendetta (2006)']

[1, 'Iron Man (2008)']

[1, 'Avatar (2009)']

[1, 'Indiana Jones and the Temple of Doom (1984)']

[1, 'Matrix Reloaded, The (2003)']

[1, 'Back to the Future Part II (1989)']

[1, 'Armageddon (1998)']

[1, 'Interstellar (2014)']

[1, 'Total Recall (1990)']

[1, 'Gattaca (1997)']

[1, 'Contact (1997)']

[1, 'Star Wars: Episode II - Attack of the Clones (2002)']

[1, 'Spider-Man 2 (2004)']

[1, 'X2: X-Men United (2003)']

[1, 'Dark Knight Rises, The (2012)']

[1, 'Star Trek: First Contact (1996)']

[1, 'Mummy, The (1999)']

[1, '300 (2007)']

[1, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[1, 'Matrix Revolutions, The (2003)']

[1, 'District 9 (2009)']

[1, 'Avengers, The (2012)']

[1, 'Abyss, The (1989)']

[1, 'I, Robot (2004)']

[1, 'Starship Troopers (1997)']

[1, 'Predator (1987)']

[1, 'The Martian (2015)']

[1, 'Guardians of the Galaxy (2014)']

[1, 'Star Trek (2009)']

[1, 'Star Trek II: The Wrath of Khan (1982)']

[1, 'RoboCop (1987)']

[1, 'Close Encounters of the Third Kind (1977)']

[1, 'Judge Dredd (1995)']

[1, 'Superman (1978)']

[1, 'I Am Legend (2007)']

[1, 'A.I. Artificial Intelligence (2001)']

[1, 'Alien³ (a.k.a. Alien 3) (1992)']

[1, 'Signs (2002)']

[1, 'Mad Max: Fury Road (2015)']

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[1, 'Blade (1998)']

[1, 'Species (1995)']

[1, 'Star Wars: Episode VII - The Force Awakens (2015)']

[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Edge of Tomorrow (2014)']

[1, 'Gravity (2013)']

[1, 'Johnny Mnemonic (1995)']

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[2, 'True Lies (1994)']

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[2, 'Robin Hood: Men in Tights (1993)']

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[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

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[2, 'Truth About Cats & Dogs, The (1996)']

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[2, 'Last Action Hero (1993)']

[2, 'Much Ado About Nothing (1993)']

[2, 'Hot Shots! Part Deux (1993)']

[2, 'Mr. & Mrs. Smith (2005)']

[2, 'Arachnophobia (1990)']

[2, 'Bad Boys (1995)']

[2, 'My Big Fat Greek Wedding (2002)']

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[2, 'Illusionist, The (2006)']

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[2, 'Father of the Bride Part II (1995)']

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[3, 'Big Lebowski, The (1998)']

[3, "Ferris Bueller's Day Off (1986)"]

[3, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[3, "There's Something About Mary (1998)"]

[3, 'Snatch (2000)']

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[3, 'Leaving Las Vegas (1995)']

[3, 'Fish Called Wanda, A (1988)']

[3, 'Shaun of the Dead (2004)']

[3, 'Lock, Stock & Two Smoking Barrels (1998)']

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[3, 'South Park: Bigger, Longer and Uncut (1999)']

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[3, 'Boogie Nights (1997)']

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[3, 'Zombieland (2009)']

[3, 'Bowling for Columbine (2002)']

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[3, 'Rocky Horror Picture Show, The (1975)']

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[4, 'Saving Private Ryan (1998)']

[4, 'Gladiator (2000)']

[4, 'Dances with Wolves (1990)']

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[4, 'Titanic (1997)']

[4, "One Flew Over the Cuckoo's Nest (1975)"]

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[4, 'American History X (1998)']

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[4, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

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[4, 'Traffic (2000)']

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[4, 'Platoon (1986)']

[4, '12 Angry Men (1957)']

[4, 'Few Good Men, A (1992)']

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[4, 'Untouchables, The (1987)']

[4, 'Legends of the Fall (1994)']

[4, 'Last Samurai, The (2003)']

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[4, 'Sting, The (1973)']

[4, 'The Imitation Game (2014)']

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[4, 'Butch Cassidy and the Sundance Kid (1969)']

[4, 'Scarface (1983)']

[4, 'Unforgiven (1992)']

[4, 'Gone with the Wind (1939)']

[4, "King's Speech, The (2010)"]

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[4, 'Million Dollar Baby (2004)']

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[4, 'Boot, Das (Boat, The) (1981)']

[4, 'Black Hawk Down (2001)']

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[4, 'Lawrence of Arabia (1962)']

[4, 'Intouchables (2011)']

[4, 'Sling Blade (1996)']

[4, 'Bridge on the River Kwai, The (1957)']

[4, 'Blood Diamond (2006)']

[4, 'Good Morning, Vietnam (1987)']

[4, 'Last of the Mohicans, The (1992)']

[4, 'Glory (1989)']

[4, 'Cool Hand Luke (1967)']

[4, 'Hotel Rwanda (2004)']

[4, 'Crash (2004)']

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[5, 'Toy Story (1995)']

[5, 'Aladdin (1992)']

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[5, 'Shrek (2001)']

[5, 'Princess Bride, The (1987)']

[5, 'Beauty and the Beast (1991)']

[5, 'Finding Nemo (2003)']

[5, 'E.T. the Extra-Terrestrial (1982)']

[5, 'Monsters, Inc. (2001)']

[5, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[5, 'Babe (1995)']

[5, 'Incredibles, The (2004)']

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[5, 'Toy Story 2 (1999)']

[5, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[5, 'Up (2009)']

[5, 'Wizard of Oz, The (1939)']

[5, 'Edward Scissorhands (1990)']

[5, 'When Harry Met Sally... (1989)']

[5, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[5, "Bug's Life, A (1998)"]

[5, 'Nightmare Before Christmas, The (1993)']

[5, 'Who Framed Roger Rabbit? (1988)']

[5, 'Big (1988)']

[5, 'Shrek 2 (2004)']

[5, 'Ratatouille (2007)']

[5, 'Chicken Run (2000)']

[5, 'Ice Age (2002)']

[5, 'Snow White and the Seven Dwarfs (1937)']

[5, 'Big Fish (2003)']

[5, 'Wallace & Gromit: The Wrong Trousers (1993)']

[5, 'Sound of Music, The (1965)']

[5, 'Little Mermaid, The (1989)']

[5, 'Mary Poppins (1964)']

[5, 'Toy Story 3 (2010)']

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[5, 'Pocahontas (1995)']

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[5, 'Pinocchio (1940)']

[5, 'Chocolat (2000)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, 'Charlie and the Chocolate Factory (2005)']

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[5, 'Wallace & Gromit: A Close Shave (1995)']

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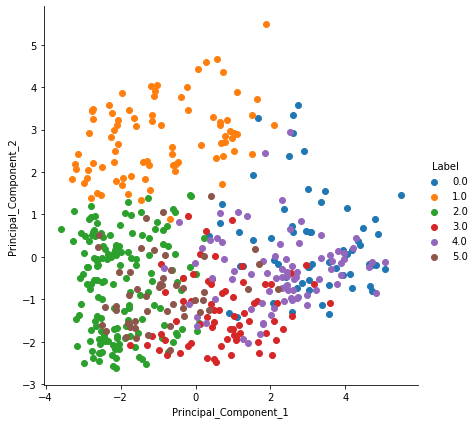
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09327553598393346

Davies-Bouldin Index: 2.426787838144297

Calinski-Harabasz Score: 39.87109223405318

Test 8

Test type: GMM

Parameters: Num Components i = 7

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[0, 'Gremlins (1984)']

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[1, 'Monty Python and the Holy Grail (1975)']

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[1, 'Truman Show, The (1998)']

[1, 'Being John Malkovich (1999)']

[1, 'Big Lebowski, The (1998)']

[1, "Ferris Bueller's Day Off (1986)"]

[1, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

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[1, 'Edward Scissorhands (1990)']

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[1, 'Airplane! (1980)']

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[1, 'Graduate, The (1967)']

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[1, "What's Eating Gilbert Grape (1993)"]

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[1, 'Grosse Pointe Blank (1997)']

[1, 'Boogie Nights (1997)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[1, 'Zombieland (2009)']

[1, 'Bowling for Columbine (2002)']

[1, 'Pleasantville (1998)']

[1, 'Chasing Amy (1997)']

[1, 'Election (1999)']

[1, 'Princess Mononoke (Mononoke-hime) (1997)']

[1, 'Grand Budapest Hotel, The (2014)']

[1, 'Superbad (2007)']

[1, 'Christmas Story, A (1983)']

[1, 'Army of Darkness (1993)']

[1, 'Three Kings (1999)']

[1, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[1, 'Some Like It Hot (1959)']

[1, 'Animal House (1978)']

[1, '(500) Days of Summer (2009)']

[1, 'Garden State (2004)']

[1, 'Blazing Saddles (1974)']

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[2, 'Pulp Fiction (1994)']

[2, 'Silence of the Lambs, The (1991)']

[2, 'Fight Club (1999)']

[2, 'Usual Suspects, The (1995)']

[2, 'American Beauty (1999)']

[2, 'Godfather, The (1972)']

[2, 'Seven (a.k.a. Se7en) (1995)']

[2, 'Fargo (1996)']

[2, 'Sixth Sense, The (1999)']

[2, 'Memento (2000)']

[2, "One Flew Over the Cuckoo's Nest (1975)"]

[2, 'Reservoir Dogs (1992)']

[2, 'Godfather: Part II, The (1974)']

[2, 'Kill Bill: Vol. 1 (2003)']

[2, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[2, 'Eternal Sunshine of the Spotless Mind (2004)']

[2, 'Goodfellas (1990)']

[2, 'American History X (1998)']

[2, 'Shining, The (1980)']

[2, 'Clockwork Orange, A (1971)']

[2, 'Taxi Driver (1976)']

[2, 'Trainspotting (1996)']

[2, 'Kill Bill: Vol. 2 (2004)']

[2, 'L.A. Confidential (1997)']

[2, 'Donnie Darko (2001)']

[2, 'Apocalypse Now (1979)']

[2, 'Full Metal Jacket (1987)']

[2, 'Departed, The (2006)']

[2, 'Snatch (2000)']

[2, 'Heat (1995)']

[2, 'Inglourious Basterds (2009)']

[2, 'Prestige, The (2006)']

[2, 'Sin City (2005)']

[2, 'Psycho (1960)']

[2, 'Requiem for a Dream (2000)']

[2, 'Django Unchained (2012)']

[2, 'Rear Window (1954)']

[2, 'City of God (Cidade de Deus) (2002)']

[2, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[2, 'Lock, Stock & Two Smoking Barrels (1998)']

[2, 'Citizen Kane (1941)']

[2, 'Run Lola Run (Lola rennt) (1998)']

[2, 'Shutter Island (2010)']

[2, 'Game, The (1997)']

[2, 'No Country for Old Men (2007)']

[2, 'Casino (1995)']

[2, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[2, 'Traffic (2000)']

[2, 'Chinatown (1974)']

[2, 'North by Northwest (1959)']

[2, '12 Angry Men (1957)']

[2, 'Untouchables, The (1987)']

[2, 'Vertigo (1958)']

[2, 'Wolf of Wall Street, The (2013)']

[2, 'Sting, The (1973)']

[2, 'True Romance (1993)']

[2, 'Scarface (1983)']

[2, 'Unforgiven (1992)']

[2, 'Talented Mr. Ripley, The (1999)']

[2, 'Black Swan (2010)']

[2, 'Seven Samurai (Shichinin no samurai) (1954)']

[2, 'Others, The (2001)']

[2, 'Gone Girl (2014)']

[2, 'Magnolia (1999)']

[2, 'American Psycho (2000)']

[2, 'Mulholland Drive (2001)']

[2, 'Jackie Brown (1997)']

[2, 'Maltese Falcon, The (1941)']

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[2, 'Mystic River (2003)']

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[3, 'Matrix, The (1999)']

[3, 'Star Wars: Episode IV - A New Hope (1977)']

[3, 'Jurassic Park (1993)']

[3, 'Terminator 2: Judgment Day (1991)']

[3, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[3, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[3, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[3, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[3, 'Lord of the Rings: The Two Towers, The (2002)']

[3, 'Lord of the Rings: The Return of the King, The (2003)']

[3, 'Back to the Future (1985)']

[3, 'Independence Day (a.k.a. ID4) (1996)']

[3, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[3, 'Dark Knight, The (2008)']

[3, 'Men in Black (a.k.a. MIB) (1997)']

[3, 'Inception (2010)']

[3, 'Terminator, The (1984)']

[3, 'Indiana Jones and the Last Crusade (1989)']

[3, 'Die Hard (1988)']

[3, 'Blade Runner (1982)']

[3, 'Alien (1979)']

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[3, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[3, 'Star Wars: Episode I - The Phantom Menace (1999)']

[3, 'Aliens (1986)']

[3, 'Stargate (1994)']

[3, 'Batman Begins (2005)']

[3, 'Minority Report (2002)']

[3, '2001: A Space Odyssey (1968)']

[3, 'V for Vendetta (2006)']

[3, 'Iron Man (2008)']

[3, 'Avatar (2009)']

[3, 'Jaws (1975)']

[3, 'Matrix Reloaded, The (2003)']

[3, 'Interstellar (2014)']

[3, 'Total Recall (1990)']

[3, 'Gattaca (1997)']

[3, 'Contact (1997)']

[3, 'Star Wars: Episode II - Attack of the Clones (2002)']

[3, 'Dark Knight Rises, The (2012)']

[3, 'Star Trek: First Contact (1996)']

[3, '300 (2007)']

[3, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[3, 'Matrix Revolutions, The (2003)']

[3, 'District 9 (2009)']

[3, 'Avengers, The (2012)']

[3, 'Abyss, The (1989)']

[3, 'I, Robot (2004)']

[3, 'Predator (1987)']

[3, 'Unbreakable (2000)']

[3, 'The Martian (2015)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Star Trek (2009)']

[3, 'Star Trek II: The Wrath of Khan (1982)']

[3, 'The Butterfly Effect (2004)']

[3, 'RoboCop (1987)']

[3, 'Children of Men (2006)']

[3, 'Close Encounters of the Third Kind (1977)']

[3, 'Superman (1978)']

[3, 'A.I. Artificial Intelligence (2001)']

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[3, 'Mad Max: Fury Road (2015)']

[3, 'Planet of the Apes (1968)']

[3, 'Star Wars: Episode VII - The Force Awakens (2015)']

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[3, 'Edge of Tomorrow (2014)']

[3, 'Gravity (2013)']

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[3, 'Watchmen (2009)']

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[4, 'Clear and Present Danger (1994)']

[4, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[4, 'Waterworld (1995)']

[4, 'Outbreak (1995)']

[4, 'Star Trek: Generations (1994)']

[4, 'Indiana Jones and the Temple of Doom (1984)']

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[4, 'Cliffhanger (1993)']

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[4, 'Bourne Supremacy, The (2004)']

[4, 'X2: X-Men United (2003)']

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[4, 'Lethal Weapon (1987)']

[4, 'Mission: Impossible II (2000)']

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[4, 'In the Line of Fire (1993)']

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[4, 'Starship Troopers (1997)']

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[4, 'Maverick (1994)']

[4, 'Crow, The (1994)']

[4, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[4, 'Lost World: Jurassic Park, The (1997)']

[4, 'Enemy of the State (1998)']

[4, 'Eraser (1996)']

[4, 'Con Air (1997)']

[4, 'Judge Dredd (1995)']

[4, 'Air Force One (1997)']

[4, 'Client, The (1994)']

[4, 'Sherlock Holmes (2009)']

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[4, 'I Am Legend (2007)']

[4, 'From Dusk Till Dawn (1996)']

[4, 'Beverly Hills Cop III (1994)']

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[4, 'Ransom (1996)']

[4, 'Alien³ (a.k.a. Alien 3) (1992)']

[4, 'The Hunger Games (2012)']

[4, 'Dragonheart (1996)']

[4, "The Devil's Advocate (1997)"]

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[4, 'Mr. & Mrs. Smith (2005)']

[4, 'Arachnophobia (1990)']

[4, 'Bad Boys (1995)']

[4, 'Ring, The (2002)']

[4, 'Star Trek IV: The Voyage Home (1986)']

[4, 'Tomorrow Never Dies (1997)']

[4, 'Johnny Mnemonic (1995)']

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[4, 'Three Musketeers, The (1993)']

[4, 'Sneakers (1992)']

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[4, 'Rush Hour (1998)']

[4, 'Deep Impact (1998)']

[4, 'Thomas Crown Affair, The (1999)']

[4, 'Disclosure (1994)']

[4, 'Terminator 3: Rise of the Machines (2003)']

[4, 'Alien: Resurrection (1997)']

[4, 'Beverly Hills Cop (1984)']

[4, 'Gone in 60 Seconds (2000)']

[4, 'X-Files: Fight the Future, The (1998)']

[4, 'Taken (2008)']

[4, "Pirates of the Caribbean: At World's End (2007)"]

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[5, 'Forrest Gump (1994)']

[5, 'Shawshank Redemption, The (1994)']

[5, "Schindler's List (1993)"]

[5, 'Braveheart (1995)']

[5, 'Apollo 13 (1995)']

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[5, 'Gladiator (2000)']

[5, 'Dances with Wolves (1990)']

[5, 'Good Will Hunting (1997)']

[5, 'Titanic (1997)']

[5, 'Beautiful Mind, A (2001)']

[5, 'Green Mile, The (1999)']

[5, 'Catch Me If You Can (2002)']

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[5, 'Casablanca (1942)']

[5, 'Cast Away (2000)']

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[5, 'Philadelphia (1993)']

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[5, 'Quiz Show (1994)']

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[5, 'Big Fish (2003)']

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[5, 'Rocky (1976)']

[5, 'Platoon (1986)']

[5, 'Few Good Men, A (1992)']

[5, 'To Kill a Mockingbird (1962)']

[5, 'Legends of the Fall (1994)']

[5, 'Last Samurai, The (2003)']

[5, 'The Imitation Game (2014)']

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[5, 'Gone with the Wind (1939)']

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[5, 'Intouchables (2011)']

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[5, 'Bridge on the River Kwai, The (1957)']

[5, 'Field of Dreams (1989)']

[5, 'Blood Diamond (2006)']

[5, 'Good Morning, Vietnam (1987)']

[5, 'Last of the Mohicans, The (1992)']

[5, 'Illusionist, The (2006)']

[5, 'Glory (1989)']

[5, 'Rob Roy (1995)']

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[5, 'Crash (2004)']

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[6, 'Ace Ventura: Pet Detective (1994)']

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[6, "There's Something About Mary (1998)"]

[6, 'Austin Powers: The Spy Who Shagged Me (1999)']

[6, 'American Pie (1999)']

[6, 'Austin Powers: International Man of Mystery (1997)']

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[6, 'While You Were Sleeping (1995)']

[6, 'Ace Ventura: When Nature Calls (1995)']

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[6, 'Grease (1978)']

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[6, 'Notting Hill (1999)']

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[6, 'School of Rock (2003)']

[6, "Wayne's World (1992)"]

[6, 'Wedding Singer, The (1998)']

[6, 'Naked Gun 33 1/3: The Final Insult (1994)']

[6, 'Truth About Cats & Dogs, The (1996)']

[6, 'My Cousin Vinny (1992)']

[6, '10 Things I Hate About You (1999)']

[6, 'Love Actually (2003)']

[6, 'Rocky Horror Picture Show, The (1975)']

[6, 'Coneheads (1993)']

[6, 'Much Ado About Nothing (1993)']

[6, 'Hot Shots! Part Deux (1993)']

[6, 'My Big Fat Greek Wedding (2002)']

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[6, 'Grumpier Old Men (1995)']

[6, "City Slickers II: The Legend of Curly's Gold (1994)"]

[6, 'Father of the Bride Part II (1995)']

[6, 'What Women Want (2000)']

[6, 'Scary Movie (2000)']

[6, 'So I Married an Axe Murderer (1993)']

[6, 'Crying Game, The (1992)']

[6, 'French Kiss (1995)']

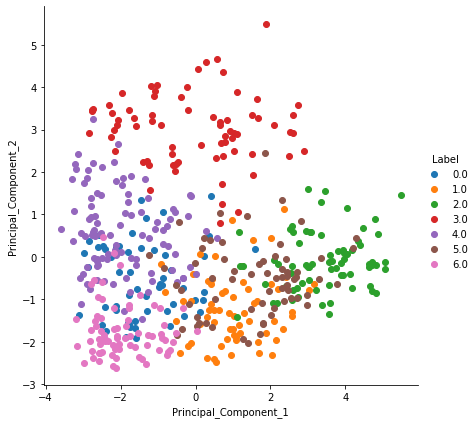
[6, 'First Knight (1995)']

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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.0843777869638214

Davies-Bouldin Index: 2.462055076578808

Calinski-Harabasz Score: 38.00638481706648

Test 9

Test type: GMM

Parameters: Num Components i = 8

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[0, 'Alien (1979)']

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[0, 'Sleepy Hollow (1999)']

[0, 'A.I. Artificial Intelligence (2001)']

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[0, 'Princess Mononoke (Mononoke-hime) (1997)']

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[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Mask, The (1994)']

[1, 'Pretty Woman (1990)']

[1, 'Mrs. Doubtfire (1993)']

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[1, 'Home Alone (1990)']

[1, 'Ghost (1990)']

[1, 'Sleepless in Seattle (1993)']

[1, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[1, 'Four Weddings and a Funeral (1994)']

[1, 'Clueless (1995)']

[1, "There's Something About Mary (1998)"]

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

[1, 'Austin Powers: International Man of Mystery (1997)']

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[1, 'Addams Family Values (1993)']

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[1, 'Scream (1996)']

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[1, 'Arachnophobia (1990)']

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[1, "You've Got Mail (1998)"]

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[1, 'Thelma & Louise (1991)']

[1, 'Grumpier Old Men (1995)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Father of the Bride Part II (1995)']

[1, 'Thomas Crown Affair, The (1999)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, 'Scary Movie (2000)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'Crying Game, The (1992)']

[1, 'French Kiss (1995)']

[1, 'First Knight (1995)']

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[2, 'Monty Python and the Holy Grail (1975)']

[2, 'Groundhog Day (1993)']

[2, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[2, 'Being John Malkovich (1999)']

[2, 'Big Lebowski, The (1998)']

[2, "Ferris Bueller's Day Off (1986)"]

[2, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[2, 'Breakfast Club, The (1985)']

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[3, 'Lock, Stock & Two Smoking Barrels (1998)']

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[3, 'No Country for Old Men (2007)']

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[4, 'Firm, The (1993)']

[4, 'Cliffhanger (1993)']

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[4, 'Alien: Resurrection (1997)']

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[5, 'English Patient, The (1996)']

[5, 'Gone with the Wind (1939)']

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[5, 'Blood Diamond (2006)']

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[5, 'Last of the Mohicans, The (1992)']

[5, 'Glory (1989)']

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[6, 'Beauty and the Beast (1991)']

[6, 'Finding Nemo (2003)']

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[6, 'Harry Potter and the Goblet of Fire (2005)']

[6, 'Chicken Run (2000)']

[6, 'Ice Age (2002)']

[6, 'Snow White and the Seven Dwarfs (1937)']

[6, 'Honey, I Shrunk the Kids (1989)']

[6, 'Wallace & Gromit: The Wrong Trousers (1993)']

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[6, 'Toy Story 3 (2010)']

[6, 'Harry Potter and the Order of the Phoenix (2007)']

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[7, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

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[7, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

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[7, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[7, 'Star Wars: Episode I - The Phantom Menace (1999)']

[7, 'Aliens (1986)']

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[7, 'Total Recall (1990)']

[7, 'Star Wars: Episode II - Attack of the Clones (2002)']

[7, 'Spider-Man 2 (2004)']

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[7, 'Dark Knight Rises, The (2012)']

[7, 'Star Trek: First Contact (1996)']

[7, '300 (2007)']

[7, 'Star Wars: Episode III - Revenge of the Sith (2005)']

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[7, 'Avengers, The (2012)']

[7, 'Predator (1987)']

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[7, 'RoboCop (1987)']

[7, 'Superman (1978)']

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[7, 'Blade (1998)']

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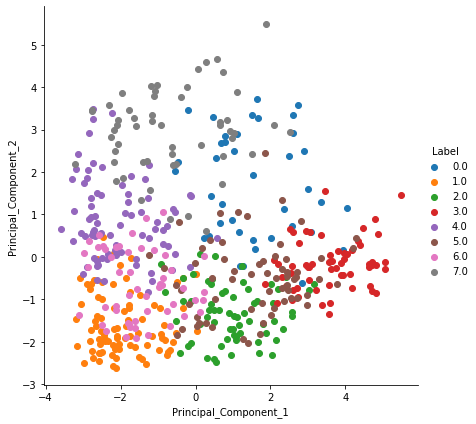
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.0879960235868565

Davies-Bouldin Index: 2.4017994562991003

Calinski-Harabasz Score: 35.38471264836154

Test 10

Test type: GMM

Parameters: Num Components i = 9

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[1, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[1, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[1, 'Lord of the Rings: The Two Towers, The (2002)']

[1, 'Lord of the Rings: The Return of the King, The (2003)']

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[1, 'Indiana Jones and the Last Crusade (1989)']

[1, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[1, 'X-Men (2000)']

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[1, 'Incredibles, The (2004)']

[1, 'Spider-Man (2002)']

[1, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[1, 'Iron Man (2008)']

[1, 'Indiana Jones and the Temple of Doom (1984)']

[1, 'Harry Potter and the Prisoner of Azkaban (2004)']

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[1, 'Spider-Man 2 (2004)']

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[1, 'Dark Knight Rises, The (2012)']

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[1, 'Guardians of the Galaxy (2014)']

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[1, 'Harry Potter and the Half-Blood Prince (2009)']

[1, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

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[1, 'The Hunger Games (2012)']

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[1, 'Batman Returns (1992)']

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[1, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[2, 'Piano, The (1993)']

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[2, 'Legends of the Fall (1994)']

[2, 'The Imitation Game (2014)']

[2, "It's a Wonderful Life (1946)"]

[2, 'English Patient, The (1996)']

[2, 'Gone with the Wind (1939)']

[2, "King's Speech, The (2010)"]

[2, 'Million Dollar Baby (2004)']

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[2, 'Inside Out (2015)']

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[2, 'Good Morning, Vietnam (1987)']

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[3, 'Aladdin (1992)']

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[3, 'Home Alone (1990)']

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[3, 'Willy Wonka & the Chocolate Factory (1971)']

[3, 'Four Weddings and a Funeral (1994)']

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[3, 'Big (1988)']

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[3, 'Sense and Sensibility (1995)']

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[3, 'Ice Age (2002)']

[3, 'Snow White and the Seven Dwarfs (1937)']

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[3, 'Charlie and the Chocolate Factory (2005)']

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[3, 'Phenomenon (1996)']

[3, 'Miss Congeniality (2000)']

[3, 'Fantasia (1940)']

[3, 'Wallace & Gromit: A Close Shave (1995)']

[3, 'Sabrina (1995)']

[3, 'Crocodile Dundee (1986)']

[3, 'Dirty Dancing (1987)']

[3, 'Thelma & Louise (1991)']

[3, 'Goonies, The (1985)']

[3, 'Grumpier Old Men (1995)']

[3, "City Slickers II: The Legend of Curly's Gold (1994)"]

[3, 'Father of the Bride Part II (1995)']

[3, 'What Women Want (2000)']

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[4, 'Matrix, The (1999)']

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[4, 'Jurassic Park (1993)']

[4, 'Terminator 2: Judgment Day (1991)']

[4, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[4, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[4, 'Back to the Future (1985)']

[4, 'Independence Day (a.k.a. ID4) (1996)']

[4, 'Men in Black (a.k.a. MIB) (1997)']

[4, 'Terminator, The (1984)']

[4, 'Blade Runner (1982)']

[4, 'Alien (1979)']

[4, 'E.T. the Extra-Terrestrial (1982)']

[4, 'Fifth Element, The (1997)']

[4, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[4, 'Star Wars: Episode I - The Phantom Menace (1999)']

[4, 'Aliens (1986)']

[4, 'Stargate (1994)']

[4, 'Minority Report (2002)']

[4, '2001: A Space Odyssey (1968)']

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[4, 'Contact (1997)']

[4, 'Star Wars: Episode II - Attack of the Clones (2002)']

[4, 'Star Trek: First Contact (1996)']

[4, 'Star Wars: Episode III - Revenge of the Sith (2005)']

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[4, 'District 9 (2009)']

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[4, 'The Martian (2015)']

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[4, 'RoboCop (1987)']

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[4, 'Species (1995)']

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[4, 'Star Trek IV: The Voyage Home (1986)']

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[4, 'Gravity (2013)']

[4, 'Dark City (1998)']

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[4, 'Serenity (2005)']

[4, 'Deep Impact (1998)']

[4, 'Terminator 3: Rise of the Machines (2003)']

[4, 'Alien: Resurrection (1997)']

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[5, 'Fugitive, The (1993)']

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[5, 'In the Line of Fire (1993)']

[5, "Charlie's Angels (2000)"]

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[5, 'Maverick (1994)']

[5, 'Lost World: Jurassic Park, The (1997)']

[5, 'Enemy of the State (1998)']

[5, 'Eraser (1996)']

[5, 'Patriot, The (2000)']

[5, 'Con Air (1997)']

[5, 'Judge Dredd (1995)']

[5, 'Air Force One (1997)']

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[5, 'Goldfinger (1964)']

[5, 'Three Musketeers, The (1993)']

[5, 'Sneakers (1992)']

[5, 'Wild Wild West (1999)']

[5, 'Rush Hour (1998)']

[5, 'Thomas Crown Affair, The (1999)']

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[6, 'Ace Ventura: Pet Detective (1994)']

[6, 'Mask, The (1994)']

[6, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[6, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[6, "There's Something About Mary (1998)"]

[6, 'Austin Powers: The Spy Who Shagged Me (1999)']

[6, 'American Pie (1999)']

[6, 'Austin Powers: International Man of Mystery (1997)']

[6, 'Who Framed Roger Rabbit? (1988)']

[6, 'Ace Ventura: When Nature Calls (1995)']

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[6, 'Airplane! (1980)']

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[6, 'Addams Family Values (1993)']

[6, 'Mars Attacks! (1996)']

[6, 'South Park: Bigger, Longer and Uncut (1999)']

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[6, 'Galaxy Quest (1999)']

[6, 'Cable Guy, The (1996)']

[6, 'Robin Hood: Men in Tights (1993)']

[6, 'School of Rock (2003)']

[6, 'From Dusk Till Dawn (1996)']

[6, "Wayne's World (1992)"]

[6, 'Naked Gun 33 1/3: The Final Insult (1994)']

[6, 'My Cousin Vinny (1992)']

[6, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[6, "The Devil's Advocate (1997)"]

[6, 'Rocky Horror Picture Show, The (1975)']

[6, 'Coneheads (1993)']

[6, 'Last Action Hero (1993)']

[6, 'Superbad (2007)']

[6, 'Hot Shots! Part Deux (1993)']

[6, 'Arachnophobia (1990)']

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[6, 'Gremlins (1984)']

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[7, 'Dark Knight, The (2008)']

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[7, 'Godfather: Part II, The (1974)']

[7, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

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[7, 'Traffic (2000)']

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[7, 'Unforgiven (1992)']

[7, 'Bowling for Columbine (2002)']

[7, 'Boot, Das (Boat, The) (1981)']

[7, 'Black Hawk Down (2001)']

[7, 'Gran Torino (2008)']

[7, 'Seven Samurai (Shichinin no samurai) (1954)']

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[8, 'L.A. Confidential (1997)']

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[8, 'Rear Window (1954)']

[8, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[8, 'Run Lola Run (Lola rennt) (1998)']

[8, 'Shutter Island (2010)']

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[8, 'Talented Mr. Ripley, The (1999)']

[8, 'Black Swan (2010)']

[8, 'Others, The (2001)']

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[8, 'Ex Machina (2015)']

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[8, 'Jackie Brown (1997)']

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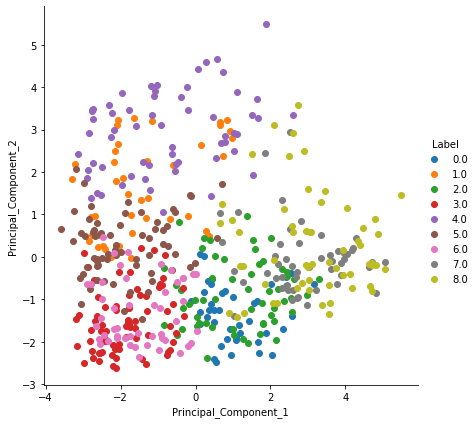
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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.08087997234446953

Davies-Bouldin Index: 2.5016520324973954

Calinski-Harabasz Score: 31.906088091240413

Test 11

Test type: GMM

Parameters: Num Components i = 10

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[0, 'Men in Black (a.k.a. MIB) (1997)']

[0, 'Alien (1979)']

[0, 'Fifth Element, The (1997)']

[0, 'Star Wars: Episode I - The Phantom Menace (1999)']

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[0, 'Johnny Mnemonic (1995)']

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[0, 'Alien: Resurrection (1997)']

[0, 'X-Files: Fight the Future, The (1998)']

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[1, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[1, 'Sixth Sense, The (1999)']

[1, 'Memento (2000)']

[1, 'Inception (2010)']

[1, 'Blade Runner (1982)']

[1, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[1, 'Truman Show, The (1998)']

[1, 'Eternal Sunshine of the Spotless Mind (2004)']

[1, 'Being John Malkovich (1999)']

[1, 'Shining, The (1980)']

[1, 'Clockwork Orange, A (1971)']

[1, '2001: A Space Odyssey (1968)']

[1, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[1, 'Donnie Darko (2001)']

[1, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[1, 'Edward Scissorhands (1990)']

[1, 'Prestige, The (2006)']

[1, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[1, 'Psycho (1960)']

[1, 'Lost in Translation (2003)']

[1, 'Rear Window (1954)']

[1, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[1, 'Citizen Kane (1941)']

[1, 'Run Lola Run (Lola rennt) (1998)']

[1, 'Shutter Island (2010)']

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[1, 'Others, The (2001)']

[1, 'Princess Mononoke (Mononoke-hime) (1997)']

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[2, 'Shrek (2001)']

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[2, 'Beauty and the Beast (1991)']

[2, 'Finding Nemo (2003)']

[2, 'E.T. the Extra-Terrestrial (1982)']

[2, 'Monsters, Inc. (2001)']

[2, 'Babe (1995)']

[2, 'Incredibles, The (2004)']

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[2, 'WALL·E (2008)']

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[2, 'Up (2009)']

[2, 'Wizard of Oz, The (1939)']

[2, "Bug's Life, A (1998)"]

[2, 'Nightmare Before Christmas, The (1993)']

[2, 'Who Framed Roger Rabbit? (1988)']

[2, 'Shrek 2 (2004)']

[2, 'Ratatouille (2007)']

[2, 'Chicken Run (2000)']

[2, 'Ice Age (2002)']

[2, 'Snow White and the Seven Dwarfs (1937)']

[2, 'Honey, I Shrunk the Kids (1989)']

[2, 'Wallace & Gromit: The Wrong Trousers (1993)']

[2, 'Little Mermaid, The (1989)']

[2, 'Mary Poppins (1964)']

[2, 'Toy Story 3 (2010)']

[2, 'How to Train Your Dragon (2010)']

[2, 'Inside Out (2015)']

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[3, 'Fugitive, The (1993)']

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[3, 'Bourne Ultimatum, The (2007)']

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[3, 'Mission: Impossible II (2000)']

[3, 'Demolition Man (1993)']

[3, 'In the Line of Fire (1993)']

[3, "Charlie's Angels (2000)"]

[3, 'Die Hard 2 (1990)']

[3, 'Maverick (1994)']

[3, 'Lost World: Jurassic Park, The (1997)']

[3, 'Enemy of the State (1998)']

[3, 'Eraser (1996)']

[3, 'Patriot, The (2000)']

[3, 'Con Air (1997)']

[3, 'Air Force One (1997)']

[3, 'Client, The (1994)']

[3, 'Sherlock Holmes (2009)']

[3, 'Desperado (1995)']

[3, 'Beverly Hills Cop III (1994)']

[3, 'Congo (1995)']

[3, 'Mask of Zorro, The (1998)']

[3, 'Ransom (1996)']

[3, "The Devil's Advocate (1997)"]

[3, 'Italian Job, The (2003)']

[3, 'Batman Returns (1992)']

[3, 'Lethal Weapon 2 (1989)']

[3, 'Romancing the Stone (1984)']

[3, 'Last Action Hero (1993)']

[3, 'Mr. & Mrs. Smith (2005)']

[3, 'Arachnophobia (1990)']

[3, 'Bad Boys (1995)']

[3, 'Tomorrow Never Dies (1997)']

[3, 'Goldfinger (1964)']

[3, 'Three Musketeers, The (1993)']

[3, 'Sneakers (1992)']

[3, 'Wild Wild West (1999)']

[3, 'Rush Hour (1998)']

[3, 'Thomas Crown Affair, The (1999)']

[3, 'Disclosure (1994)']

[3, 'Beverly Hills Cop (1984)']

[3, 'Gone in 60 Seconds (2000)']

[3, 'Taken (2008)']

[3, 'Executive Decision (1996)']

--------- NEW CLUSTER -----------

[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, 'Big Lebowski, The (1998)']

[4, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[4, "Ferris Bueller's Day Off (1986)"]

[4, "There's Something About Mary (1998)"]

[4, 'Austin Powers: The Spy Who Shagged Me (1999)']

[4, 'American Pie (1999)']

[4, 'Breakfast Club, The (1985)']

[4, 'Clerks (1994)']

[4, 'O Brother, Where Art Thou? (2000)']

[4, 'Natural Born Killers (1994)']

[4, 'Austin Powers: International Man of Mystery (1997)']

[4, 'Office Space (1999)']

[4, "Monty Python's Life of Brian (1979)"]

[4, 'Get Shorty (1995)']

[4, 'Ace Ventura: When Nature Calls (1995)']

[4, 'Beetlejuice (1988)']

[4, 'Airplane! (1980)']

[4, 'Blues Brothers, The (1980)']

[4, 'Meet the Parents (2000)']

[4, 'Fish Called Wanda, A (1988)']

[4, 'Shaun of the Dead (2004)']

[4, 'Blair Witch Project, The (1999)']

[4, 'Happy Gilmore (1996)']

[4, 'Little Miss Sunshine (2006)']

[4, 'Juno (2007)']

[4, 'South Park: Bigger, Longer and Uncut (1999)']

[4, 'Dogma (1999)']

[4, 'High Fidelity (2000)']

[4, 'Scream (1996)']

[4, 'This Is Spinal Tap (1984)']

[4, 'Hangover, The (2009)']

[4, 'Annie Hall (1977)']

[4, 'Royal Tenenbaums, The (2001)']

[4, 'Young Frankenstein (1974)']

[4, 'Ed Wood (1994)']

[4, 'Raising Arizona (1987)']

[4, 'Exorcist, The (1973)']

[4, '40-Year-Old Virgin, The (2005)']

[4, 'Rushmore (1998)']

[4, 'Cable Guy, The (1996)']

[4, 'Hot Fuzz (2007)']

[4, 'Robin Hood: Men in Tights (1993)']

[4, 'School of Rock (2003)']

[4, 'From Dusk Till Dawn (1996)']

[4, "Wayne's World (1992)"]

[4, 'Naked Gun 33 1/3: The Final Insult (1994)']

[4, 'Grosse Pointe Blank (1997)']

[4, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[4, 'Zombieland (2009)']

[4, 'Bowling for Columbine (2002)']

[4, 'Chasing Amy (1997)']

[4, 'Rocky Horror Picture Show, The (1975)']

[4, 'Election (1999)']

[4, 'Superbad (2007)']

[4, 'Christmas Story, A (1983)']

[4, 'Hot Shots! Part Deux (1993)']

[4, 'Ring, The (2002)']

[4, 'Spaceballs (1987)']

[4, 'Army of Darkness (1993)']

[4, 'Three Kings (1999)']

[4, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[4, 'Some Like It Hot (1959)']

[4, 'Animal House (1978)']

[4, 'Scary Movie (2000)']

[4, 'So I Married an Axe Murderer (1993)']

[4, 'Blazing Saddles (1974)']

--------- NEW CLUSTER -----------

[5, 'Pulp Fiction (1994)']

[5, 'Silence of the Lambs, The (1991)']

[5, 'Fight Club (1999)']

[5, 'Usual Suspects, The (1995)']

[5, 'American Beauty (1999)']

[5, 'Godfather, The (1972)']

[5, 'Seven (a.k.a. Se7en) (1995)']

[5, 'Fargo (1996)']

[5, "One Flew Over the Cuckoo's Nest (1975)"]

[5, 'Reservoir Dogs (1992)']

[5, 'Godfather: Part II, The (1974)']

[5, 'Kill Bill: Vol. 1 (2003)']

[5, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[5, 'Goodfellas (1990)']

[5, 'American History X (1998)']

[5, 'Taxi Driver (1976)']

[5, 'Trainspotting (1996)']

[5, 'Kill Bill: Vol. 2 (2004)']

[5, 'L.A. Confidential (1997)']

[5, 'Apocalypse Now (1979)']

[5, 'Full Metal Jacket (1987)']

[5, 'Departed, The (2006)']

[5, 'Snatch (2000)']

[5, 'Heat (1995)']

[5, 'Inglourious Basterds (2009)']

[5, 'Sin City (2005)']

[5, 'Requiem for a Dream (2000)']

[5, 'Django Unchained (2012)']

[5, 'Leaving Las Vegas (1995)']

[5, 'City of God (Cidade de Deus) (2002)']

[5, 'Lock, Stock & Two Smoking Barrels (1998)']

[5, 'No Country for Old Men (2007)']

[5, 'Casino (1995)']

[5, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[5, 'Traffic (2000)']

[5, '12 Angry Men (1957)']

[5, 'Untouchables, The (1987)']

[5, 'Wolf of Wall Street, The (2013)']

[5, 'Sting, The (1973)']

[5, 'True Romance (1993)']

[5, 'Scarface (1983)']

[5, 'Unforgiven (1992)']

[5, 'Boogie Nights (1997)']

[5, 'Seven Samurai (Shichinin no samurai) (1954)']

[5, 'Magnolia (1999)']

[5, 'Jackie Brown (1997)']

[5, 'Old Boy (2003)']

[5, 'Mystic River (2003)']

[5, 'Cool Hand Luke (1967)']

--------- NEW CLUSTER -----------

[6, 'Matrix, The (1999)']

[6, 'Star Wars: Episode IV - A New Hope (1977)']

[6, 'Jurassic Park (1993)']

[6, 'Terminator 2: Judgment Day (1991)']

[6, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[6, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[6, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[6, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[6, 'Lord of the Rings: The Two Towers, The (2002)']

[6, 'Lord of the Rings: The Return of the King, The (2003)']

[6, 'Back to the Future (1985)']

[6, 'Batman (1989)']

[6, 'Dark Knight, The (2008)']

[6, 'Terminator, The (1984)']

[6, 'Indiana Jones and the Last Crusade (1989)']

[6, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[6, 'Die Hard (1988)']

[6, 'X-Men (2000)']

[6, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[6, 'Aliens (1986)']

[6, 'Batman Begins (2005)']

[6, 'Spider-Man (2002)']

[6, 'V for Vendetta (2006)']

[6, 'Iron Man (2008)']

[6, 'Indiana Jones and the Temple of Doom (1984)']

[6, 'Spider-Man 2 (2004)']

[6, 'X2: X-Men United (2003)']

[6, 'Dark Knight Rises, The (2012)']

[6, '300 (2007)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[6, 'Avengers, The (2012)']

[6, 'Guardians of the Galaxy (2014)']

[6, 'Crow, The (1994)']

[6, 'Star Trek (2009)']

[6, 'RoboCop (1987)']

[6, 'Superman (1978)']

[6, 'Deadpool (2016)']

[6, 'Mad Max: Fury Road (2015)']

[6, 'Blade (1998)']

[6, 'Star Wars: Episode VII - The Force Awakens (2015)']

[6, 'Watchmen (2009)']

[6, 'Iron Man 2 (2010)']

[6, 'Highlander (1986)']

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[7, 'Forrest Gump (1994)']

[7, 'Shawshank Redemption, The (1994)']

[7, "Schindler's List (1993)"]

[7, 'Braveheart (1995)']

[7, 'Apollo 13 (1995)']

[7, 'Saving Private Ryan (1998)']

[7, 'Gladiator (2000)']

[7, 'Dances with Wolves (1990)']

[7, 'Good Will Hunting (1997)']

[7, 'Titanic (1997)']

[7, 'Beautiful Mind, A (2001)']

[7, 'Green Mile, The (1999)']

[7, 'Catch Me If You Can (2002)']

[7, 'Rain Man (1988)']

[7, 'Casablanca (1942)']

[7, 'Cast Away (2000)']

[7, 'Dead Poets Society (1989)']

[7, 'Jaws (1975)']

[7, 'Life Is Beautiful (La Vita è bella) (1997)']

[7, 'As Good as It Gets (1997)']

[7, 'Jerry Maguire (1996)']

[7, 'Stand by Me (1986)']

[7, 'Amadeus (1984)']

[7, 'Philadelphia (1993)']

[7, 'Almost Famous (2000)']

[7, 'Dead Man Walking (1995)']

[7, 'Slumdog Millionaire (2008)']

[7, 'Quiz Show (1994)']

[7, 'Erin Brockovich (2000)']

[7, 'Pianist, The (2002)']

[7, 'Rocky (1976)']

[7, 'Platoon (1986)']

[7, 'Few Good Men, A (1992)']

[7, 'To Kill a Mockingbird (1962)']

[7, 'Legends of the Fall (1994)']

[7, 'Last Samurai, The (2003)']

[7, 'The Imitation Game (2014)']

[7, "It's a Wonderful Life (1946)"]

[7, 'Butch Cassidy and the Sundance Kid (1969)']

[7, 'Gone with the Wind (1939)']

[7, "King's Speech, The (2010)"]

[7, 'Tombstone (1993)']

[7, 'Million Dollar Baby (2004)']

[7, 'Social Network, The (2010)']

[7, 'Boot, Das (Boat, The) (1981)']

[7, 'Black Hawk Down (2001)']

[7, 'Gran Torino (2008)']

[7, 'Lawrence of Arabia (1962)']

[7, 'Intouchables (2011)']

[7, 'Sling Blade (1996)']

[7, 'Bridge on the River Kwai, The (1957)']

[7, 'Field of Dreams (1989)']

[7, 'Blood Diamond (2006)']

[7, 'Good Morning, Vietnam (1987)']

[7, 'Last of the Mohicans, The (1992)']

[7, 'Glory (1989)']

[7, 'Rob Roy (1995)']

[7, 'Hotel Rwanda (2004)']

[7, 'Garden State (2004)']

[7, 'Crash (2004)']

[7, 'Deer Hunter, The (1978)']

[7, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[8, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[8, 'Jumanji (1995)']

[8, 'Harry Potter and the Prisoner of Azkaban (2004)']

[8, 'Harry Potter and the Chamber of Secrets (2002)']

[8, 'Harry Potter and the Goblet of Fire (2005)']

[8, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[8, 'Harry Potter and the Order of the Phoenix (2007)']

[8, 'Harry Potter and the Half-Blood Prince (2009)']

[8, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[8, 'The Hunger Games (2012)']

[8, 'Dragonheart (1996)']

[8, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[8, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[8, 'Charlie and the Chocolate Factory (2005)']

[8, "Pirates of the Caribbean: At World's End (2007)"]

--------- NEW CLUSTER -----------

[9, 'Pretty Woman (1990)']

[9, 'Mrs. Doubtfire (1993)']

[9, 'Home Alone (1990)']

[9, 'Ghost (1990)']

[9, 'Sleepless in Seattle (1993)']

[9, 'Four Weddings and a Funeral (1994)']

[9, 'Clueless (1995)']

[9, 'Shakespeare in Love (1998)']

[9, 'When Harry Met Sally... (1989)']

[9, 'While You Were Sleeping (1995)']

[9, 'Birdcage, The (1996)']

[9, 'Big (1988)']

[9, 'Sense and Sensibility (1995)']

[9, 'Nutty Professor, The (1996)']

[9, 'Liar Liar (1997)']

[9, "Mr. Holland's Opus (1995)"]

[9, 'Dave (1993)']

[9, 'Addams Family Values (1993)']

[9, "What's Eating Gilbert Grape (1993)"]

[9, 'American President, The (1995)']

[9, 'Grease (1978)']

[9, 'Santa Clause, The (1994)']

[9, 'Sound of Music, The (1965)']

[9, 'Bruce Almighty (2003)']

[9, "Bridget Jones's Diary (2001)"]

[9, 'Full Monty, The (1997)']

[9, 'English Patient, The (1996)']

[9, 'Notting Hill (1999)']

[9, 'Moulin Rouge (2001)']

[9, 'Wedding Singer, The (1998)']

[9, 'Truth About Cats & Dogs, The (1996)']

[9, 'My Cousin Vinny (1992)']

[9, '10 Things I Hate About You (1999)']

[9, 'Love Actually (2003)']

[9, 'Coneheads (1993)']

[9, 'Much Ado About Nothing (1993)']

[9, 'My Big Fat Greek Wedding (2002)']

[9, 'Chocolat (2000)']

[9, "You've Got Mail (1998)"]

[9, 'Casper (1995)']

[9, 'Legally Blonde (2001)']

[9, 'Phenomenon (1996)']

[9, 'Miss Congeniality (2000)']

[9, 'Sabrina (1995)']

[9, 'Crocodile Dundee (1986)']

[9, 'Dirty Dancing (1987)']

[9, 'Thelma & Louise (1991)']

[9, 'Grumpier Old Men (1995)']

[9, "City Slickers II: The Legend of Curly's Gold (1994)"]

[9, 'Father of the Bride Part II (1995)']

[9, 'What Women Want (2000)']

[9, '(500) Days of Summer (2009)']

[9, 'Crying Game, The (1992)']

[9, 'French Kiss (1995)']

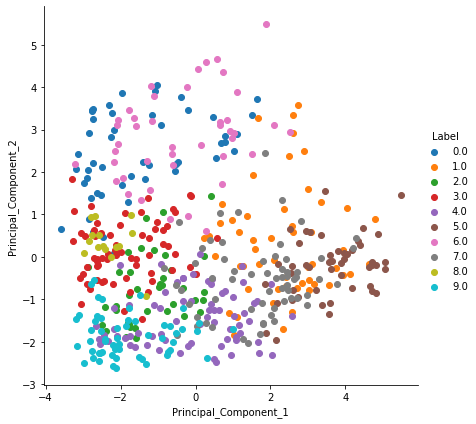
[9, 'First Knight (1995)']

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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09596772380360445

Davies-Bouldin Index: 2.288490434376362

Calinski-Harabasz Score: 31.756035644986234

Test 12

Test type: GMM

Parameters: Num Components i = 11

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[0, 'Aladdin (1992)']

[0, 'Lion King, The (1994)']

[0, 'Shrek (2001)']

[0, 'Princess Bride, The (1987)']

[0, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[0, 'Beauty and the Beast (1991)']

[0, 'Finding Nemo (2003)']

[0, 'E.T. the Extra-Terrestrial (1982)']

[0, 'Monsters, Inc. (2001)']

[0, 'Pretty Woman (1990)']

[0, 'Mrs. Doubtfire (1993)']

[0, 'Babe (1995)']

[0, 'Home Alone (1990)']

[0, 'Ghost (1990)']

[0, 'Sleepless in Seattle (1993)']

[0, 'Willy Wonka & the Chocolate Factory (1971)']

[0, 'Four Weddings and a Funeral (1994)']

[0, 'Toy Story 2 (1999)']

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[0, 'Up (2009)']

[0, 'Wizard of Oz, The (1939)']

[0, 'Jumanji (1995)']

[0, 'When Harry Met Sally... (1989)']

[0, 'Harry Potter and the Prisoner of Azkaban (2004)']

[0, "Bug's Life, A (1998)"]

[0, 'While You Were Sleeping (1995)']

[0, 'Harry Potter and the Chamber of Secrets (2002)']

[0, 'Nightmare Before Christmas, The (1993)']

[0, 'Who Framed Roger Rabbit? (1988)']

[0, 'Big (1988)']

[0, 'Shrek 2 (2004)']

[0, 'Sense and Sensibility (1995)']

[0, 'Ratatouille (2007)']

[0, 'Harry Potter and the Goblet of Fire (2005)']

[0, 'Chicken Run (2000)']

[0, 'Ice Age (2002)']

[0, 'Snow White and the Seven Dwarfs (1937)']

[0, 'Dave (1993)']

[0, 'American President, The (1995)']

[0, 'Grease (1978)']

[0, 'Honey, I Shrunk the Kids (1989)']

[0, 'Santa Clause, The (1994)']

[0, 'Wallace & Gromit: The Wrong Trousers (1993)']

[0, 'Sound of Music, The (1965)']

[0, 'Little Mermaid, The (1989)']

[0, 'Mary Poppins (1964)']

[0, "Bridget Jones's Diary (2001)"]

[0, 'Toy Story 3 (2010)']

[0, 'Harry Potter and the Order of the Phoenix (2007)']

[0, 'Notting Hill (1999)']

[0, 'Moulin Rouge (2001)']

[0, 'Harry Potter and the Half-Blood Prince (2009)']

[0, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[0, 'Wedding Singer, The (1998)']

[0, 'Truth About Cats & Dogs, The (1996)']

[0, 'How to Train Your Dragon (2010)']

[0, '10 Things I Hate About You (1999)']

[0, 'Dragonheart (1996)']

[0, 'Love Actually (2003)']

[0, 'Inside Out (2015)']

[0, 'Pocahontas (1995)']

[0, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[0, 'Much Ado About Nothing (1993)']

[0, 'My Big Fat Greek Wedding (2002)']

[0, 'Pinocchio (1940)']

[0, 'Chocolat (2000)']

[0, "You've Got Mail (1998)"]

[0, 'Casper (1995)']

[0, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[0, 'Charlie and the Chocolate Factory (2005)']

[0, 'Phenomenon (1996)']

[0, 'Fantasia (1940)']

[0, 'Wallace & Gromit: A Close Shave (1995)']

[0, 'Sabrina (1995)']

[0, 'Crocodile Dundee (1986)']

[0, 'Dirty Dancing (1987)']

[0, 'Goonies, The (1985)']

[0, 'Father of the Bride Part II (1995)']

[0, 'What Women Want (2000)']

[0, 'French Kiss (1995)']

[0, 'First Knight (1995)']

[0, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Mask, The (1994)']

[1, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[1, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[1, 'Clueless (1995)']

[1, "There's Something About Mary (1998)"]

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

[1, 'Austin Powers: International Man of Mystery (1997)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Beetlejuice (1988)']

[1, 'Birdcage, The (1996)']

[1, 'Airplane! (1980)']

[1, 'Blues Brothers, The (1980)']

[1, 'Meet the Parents (2000)']

[1, 'Blair Witch Project, The (1999)']

[1, 'Happy Gilmore (1996)']

[1, 'Nutty Professor, The (1996)']

[1, 'Liar Liar (1997)']

[1, 'Addams Family Values (1993)']

[1, 'Mars Attacks! (1996)']

[1, 'South Park: Bigger, Longer and Uncut (1999)']

[1, 'Dogma (1999)']

[1, 'Scream (1996)']

[1, 'Hangover, The (2009)']

[1, 'Young Frankenstein (1974)']

[1, 'Bruce Almighty (2003)']

[1, 'Full Monty, The (1997)']

[1, '40-Year-Old Virgin, The (2005)']

[1, 'Cable Guy, The (1996)']

[1, 'Robin Hood: Men in Tights (1993)']

[1, 'School of Rock (2003)']

[1, "Wayne's World (1992)"]

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'My Cousin Vinny (1992)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[1, 'Rocky Horror Picture Show, The (1975)']

[1, 'Coneheads (1993)']

[1, 'Last Action Hero (1993)']

[1, 'Superbad (2007)']

[1, 'Hot Shots! Part Deux (1993)']

[1, 'Arachnophobia (1990)']

[1, 'Ring, The (2002)']

[1, 'Spaceballs (1987)']

[1, 'Legally Blonde (2001)']

[1, 'Army of Darkness (1993)']

[1, 'Miss Congeniality (2000)']

[1, 'Thelma & Louise (1991)']

[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Animal House (1978)']

[1, 'Scary Movie (2000)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'Blazing Saddles (1974)']

--------- NEW CLUSTER -----------

[2, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[2, 'Lord of the Rings: The Two Towers, The (2002)']

[2, 'Lord of the Rings: The Return of the King, The (2003)']

[2, 'Gladiator (2000)']

[2, 'Dark Knight, The (2008)']

[2, 'Batman Begins (2005)']

[2, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[2, 'V for Vendetta (2006)']

[2, 'Sin City (2005)']

[2, 'Dark Knight Rises, The (2012)']

[2, '300 (2007)']

[2, 'Unbreakable (2000)']

[2, 'Crow, The (1994)']

[2, 'Sleepy Hollow (1999)']

[2, 'Watchmen (2009)']

--------- NEW CLUSTER -----------

[3, 'Silence of the Lambs, The (1991)']

[3, 'Fight Club (1999)']

[3, 'Usual Suspects, The (1995)']

[3, 'Seven (a.k.a. Se7en) (1995)']

[3, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[3, 'Sixth Sense, The (1999)']

[3, 'Memento (2000)']

[3, 'Eternal Sunshine of the Spotless Mind (2004)']

[3, 'Being John Malkovich (1999)']

[3, 'Shining, The (1980)']

[3, 'Clockwork Orange, A (1971)']

[3, 'Taxi Driver (1976)']

[3, 'Donnie Darko (2001)']

[3, 'Prestige, The (2006)']

[3, 'Psycho (1960)']

[3, 'Requiem for a Dream (2000)']

[3, 'Rear Window (1954)']

[3, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[3, 'Run Lola Run (Lola rennt) (1998)']

[3, 'Shutter Island (2010)']

[3, 'Game, The (1997)']

[3, 'Chinatown (1974)']

[3, 'North by Northwest (1959)']

[3, 'Eyes Wide Shut (1999)']

[3, 'Vertigo (1958)']

[3, 'The Butterfly Effect (2004)']

[3, 'Brazil (1985)']

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[3, 'Talented Mr. Ripley, The (1999)']

[3, 'Black Swan (2010)']

[3, 'Others, The (2001)']

[3, 'Gone Girl (2014)']

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[3, 'Maltese Falcon, The (1941)']

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[4, 'Shawshank Redemption, The (1994)']

[4, "Schindler's List (1993)"]

[4, 'Braveheart (1995)']

[4, 'American Beauty (1999)']

[4, 'Godfather, The (1972)']

[4, 'Saving Private Ryan (1998)']

[4, "One Flew Over the Cuckoo's Nest (1975)"]

[4, 'Godfather: Part II, The (1974)']

[4, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[4, 'Goodfellas (1990)']

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[4, 'L.A. Confidential (1997)']

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[4, 'Full Metal Jacket (1987)']

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[4, 'No Country for Old Men (2007)']

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[4, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[4, 'Pianist, The (2002)']

[4, 'Traffic (2000)']

[4, 'Platoon (1986)']

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[4, 'Untouchables, The (1987)']

[4, 'Wolf of Wall Street, The (2013)']

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[4, 'Butch Cassidy and the Sundance Kid (1969)']

[4, 'Scarface (1983)']

[4, 'Unforgiven (1992)']

[4, 'Boot, Das (Boat, The) (1981)']

[4, 'Black Hawk Down (2001)']

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[4, 'Bridge on the River Kwai, The (1957)']

[4, 'Blood Diamond (2006)']

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[4, 'Mystic River (2003)']

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[4, 'Hotel Rwanda (2004)']

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[5, 'Enemy of the State (1998)']

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[5, 'Romancing the Stone (1984)']

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[5, 'Rush Hour (1998)']

[5, 'Thomas Crown Affair, The (1999)']

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[5, 'Beverly Hills Cop (1984)']

[5, 'Gone in 60 Seconds (2000)']

[5, 'Taken (2008)']

[5, "Pirates of the Caribbean: At World's End (2007)"]

[5, 'Executive Decision (1996)']

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[6, 'Independence Day (a.k.a. ID4) (1996)']

[6, 'Men in Black (a.k.a. MIB) (1997)']

[6, 'Star Wars: Episode I - The Phantom Menace (1999)']

[6, 'Twister (1996)']

[6, 'Stargate (1994)']

[6, 'Waterworld (1995)']

[6, 'Star Trek: Generations (1994)']

[6, 'Matrix Reloaded, The (2003)']

[6, 'Back to the Future Part II (1989)']

[6, 'Armageddon (1998)']

[6, 'Back to the Future Part III (1990)']

[6, 'Star Wars: Episode II - Attack of the Clones (2002)']

[6, 'Star Trek: First Contact (1996)']

[6, 'Mummy, The (1999)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[6, 'Demolition Man (1993)']

[6, 'Matrix Revolutions, The (2003)']

[6, 'I, Robot (2004)']

[6, 'Starship Troopers (1997)']

[6, 'Lost World: Jurassic Park, The (1997)']

[6, 'Star Trek II: The Wrath of Khan (1982)']

[6, 'RoboCop (1987)']

[6, 'Judge Dredd (1995)']

[6, 'Galaxy Quest (1999)']

[6, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[6, 'I Am Legend (2007)']

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[6, 'Signs (2002)']

[6, 'The Hunger Games (2012)']

[6, 'Species (1995)']

[6, 'Star Wars: Episode VII - The Force Awakens (2015)']

[6, 'Star Trek IV: The Voyage Home (1986)']

[6, 'Johnny Mnemonic (1995)']

[6, 'Wild Wild West (1999)']

[6, 'Deep Impact (1998)']

[6, 'Terminator 3: Rise of the Machines (2003)']

[6, 'Alien: Resurrection (1997)']

[6, 'X-Files: Fight the Future, The (1998)']

[6, 'Highlander (1986)']

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[7, 'Spider-Man (2002)']

[7, 'Iron Man (2008)']

[7, 'Spider-Man 2 (2004)']

[7, 'X2: X-Men United (2003)']

[7, 'Avengers, The (2012)']

[7, 'Guardians of the Galaxy (2014)']

[7, 'Superman (1978)']

[7, 'Deadpool (2016)']

[7, 'Batman Returns (1992)']

[7, 'Blade (1998)']

[7, 'Iron Man 2 (2010)']

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[8, 'Matrix, The (1999)']

[8, 'Star Wars: Episode IV - A New Hope (1977)']

[8, 'Jurassic Park (1993)']

[8, 'Terminator 2: Judgment Day (1991)']

[8, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[8, 'Back to the Future (1985)']

[8, 'Inception (2010)']

[8, 'Terminator, The (1984)']

[8, 'Indiana Jones and the Last Crusade (1989)']

[8, 'Blade Runner (1982)']

[8, 'Alien (1979)']

[8, 'Fifth Element, The (1997)']

[8, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[8, 'Aliens (1986)']

[8, 'Minority Report (2002)']

[8, '2001: A Space Odyssey (1968)']

[8, 'WALL·E (2008)']

[8, 'Avatar (2009)']

[8, 'Jaws (1975)']

[8, 'Interstellar (2014)']

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[8, 'Gattaca (1997)']

[8, 'Contact (1997)']

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[8, 'Predator (1987)']

[8, 'The Martian (2015)']

[8, 'Star Trek (2009)']

[8, 'Children of Men (2006)']

[8, 'Close Encounters of the Third Kind (1977)']

[8, 'A.I. Artificial Intelligence (2001)']

[8, 'Mad Max: Fury Road (2015)']

[8, 'Planet of the Apes (1968)']

[8, 'Ex Machina (2015)']

[8, 'Edge of Tomorrow (2014)']

[8, 'Gravity (2013)']

[8, 'Dark City (1998)']

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[9, 'Monty Python and the Holy Grail (1975)']

[9, 'Reservoir Dogs (1992)']

[9, 'Kill Bill: Vol. 1 (2003)']

[9, 'Trainspotting (1996)']

[9, 'Kill Bill: Vol. 2 (2004)']

[9, 'Big Lebowski, The (1998)']

[9, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[9, 'Snatch (2000)']

[9, 'Clerks (1994)']

[9, 'O Brother, Where Art Thou? (2000)']

[9, 'Natural Born Killers (1994)']

[9, 'Office Space (1999)']

[9, "Monty Python's Life of Brian (1979)"]

[9, 'Get Shorty (1995)']

[9, 'Fish Called Wanda, A (1988)']

[9, 'Shaun of the Dead (2004)']

[9, 'Lock, Stock & Two Smoking Barrels (1998)']

[9, 'High Fidelity (2000)']

[9, 'This Is Spinal Tap (1984)']

[9, '28 Days Later (2002)']

[9, 'Royal Tenenbaums, The (2001)']

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[9, 'Hot Fuzz (2007)']

[9, 'From Dusk Till Dawn (1996)']

[9, 'Grosse Pointe Blank (1997)']

[9, 'Boogie Nights (1997)']

[9, 'Zombieland (2009)']

[9, 'Chasing Amy (1997)']

[9, 'Election (1999)']

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[9, 'Three Kings (1999)']

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[10, 'Forrest Gump (1994)']

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[10, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[10, 'Truman Show, The (1998)']

[10, 'Beautiful Mind, A (2001)']

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[10, "Ferris Bueller's Day Off (1986)"]

[10, 'Casablanca (1942)']

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[10, 'Edward Scissorhands (1990)']

[10, 'As Good as It Gets (1997)']

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[10, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

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[10, 'Philadelphia (1993)']

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[10, 'Citizen Kane (1941)']

[10, 'Slumdog Millionaire (2008)']

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[10, 'Juno (2007)']

[10, "Mr. Holland's Opus (1995)"]

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[10, 'Big Fish (2003)']

[10, "What's Eating Gilbert Grape (1993)"]

[10, 'Rocky (1976)']

[10, 'Few Good Men, A (1992)']

[10, 'Annie Hall (1977)']

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[10, 'To Kill a Mockingbird (1962)']

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[10, 'Ed Wood (1994)']

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[10, 'Gone with the Wind (1939)']

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[10, 'Million Dollar Baby (2004)']

[10, 'Social Network, The (2010)']

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[10, 'Princess Mononoke (Mononoke-hime) (1997)']

[10, 'Christmas Story, A (1983)']

[10, 'Intouchables (2011)']

[10, 'Sling Blade (1996)']

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[10, 'Good Morning, Vietnam (1987)']

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[10, 'Illusionist, The (2006)']

[10, 'Rob Roy (1995)']

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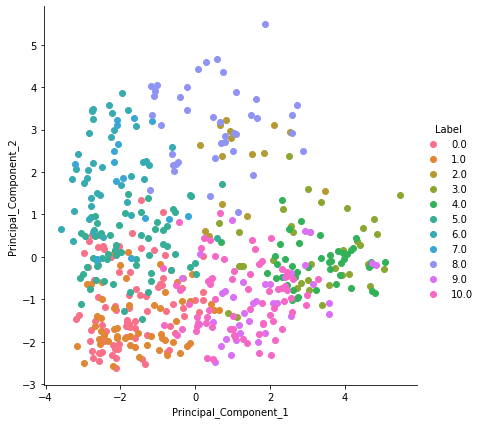
[10, 'Crash (2004)']

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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.08631311013075058

Davies-Bouldin Index: 2.3358304977366404

Calinski-Harabasz Score: 28.239787930911536

Test 13

Test type: GMM

Parameters: Num Components i = 12

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[0, 'Ace Ventura: Pet Detective (1994)']

[0, 'Mask, The (1994)']

[0, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[0, "There's Something About Mary (1998)"]

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[0, 'School of Rock (2003)']

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[0, "Wayne's World (1992)"]

[0, 'Naked Gun 33 1/3: The Final Insult (1994)']

[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

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[0, 'So I Married an Axe Murderer (1993)']

[0, 'Blazing Saddles (1974)']

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[1, 'Forrest Gump (1994)']

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[1, 'American Beauty (1999)']

[1, 'Good Will Hunting (1997)']

[1, "One Flew Over the Cuckoo's Nest (1975)"]

[1, 'Beautiful Mind, A (2001)']

[1, 'Green Mile, The (1999)']

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[1, 'Almost Famous (2000)']

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[2, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

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[2, '2001: A Space Odyssey (1968)']

[2, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

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[2, 'V for Vendetta (2006)']

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[2, 'Gravity (2013)']

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[3, 'Die Hard: With a Vengeance (1995)']

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[3, 'Mr. & Mrs. Smith (2005)']

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[3, 'Beverly Hills Cop (1984)']

[3, 'Gone in 60 Seconds (2000)']

[3, 'X-Files: Fight the Future, The (1998)']

[3, 'Taken (2008)']

[3, 'Executive Decision (1996)']

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[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[4, 'Being John Malkovich (1999)']

[4, 'Big Lebowski, The (1998)']

[4, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[4, 'Clerks (1994)']

[4, 'Edward Scissorhands (1990)']

[4, 'O Brother, Where Art Thou? (2000)']

[4, 'Natural Born Killers (1994)']

[4, 'Office Space (1999)']

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[4, 'Little Miss Sunshine (2006)']

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[4, 'North by Northwest (1959)']

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[4, 'Raising Arizona (1987)']

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[4, 'Bowling for Columbine (2002)']

[4, 'Pleasantville (1998)']

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[4, 'Black Swan (2010)']

[4, 'Election (1999)']

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[4, 'Grand Budapest Hotel, The (2014)']

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[4, 'Maltese Falcon, The (1941)']

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[4, 'Some Like It Hot (1959)']

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[5, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[5, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[5, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[5, 'Indiana Jones and the Temple of Doom (1984)']

[5, 'Jumanji (1995)']

[5, 'Harry Potter and the Prisoner of Azkaban (2004)']

[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Mummy, The (1999)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Honey, I Shrunk the Kids (1989)']

[5, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'The Hunger Games (2012)']

[5, 'Dragonheart (1996)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Romancing the Stone (1984)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, 'Charlie and the Chocolate Factory (2005)']

[5, 'Three Musketeers, The (1993)']

[5, 'Goonies, The (1985)']

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[6, 'Batman (1989)']

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[6, 'Guardians of the Galaxy (2014)']

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[6, 'Judge Dredd (1995)']

[6, 'Superman (1978)']

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[7, '10 Things I Hate About You (1999)']

[7, 'Love Actually (2003)']

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[7, 'My Big Fat Greek Wedding (2002)']

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[7, 'Dirty Dancing (1987)']

[7, 'Thelma & Louise (1991)']

[7, 'Grumpier Old Men (1995)']

[7, "City Slickers II: The Legend of Curly's Gold (1994)"]

[7, 'Father of the Bride Part II (1995)']

[7, 'Rob Roy (1995)']

[7, 'What Women Want (2000)']

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[8, 'Matrix, The (1999)']

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[8, 'Jurassic Park (1993)']

[8, 'Terminator 2: Judgment Day (1991)']

[8, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[8, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[8, 'Lord of the Rings: The Two Towers, The (2002)']

[8, 'Lord of the Rings: The Return of the King, The (2003)']

[8, 'Back to the Future (1985)']

[8, 'Independence Day (a.k.a. ID4) (1996)']

[8, 'Men in Black (a.k.a. MIB) (1997)']

[8, 'Terminator, The (1984)']

[8, 'Indiana Jones and the Last Crusade (1989)']

[8, 'Die Hard (1988)']

[8, 'Alien (1979)']

[8, 'E.T. the Extra-Terrestrial (1982)']

[8, 'Fifth Element, The (1997)']

[8, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[8, 'Star Wars: Episode I - The Phantom Menace (1999)']

[8, 'Aliens (1986)']

[8, 'Stargate (1994)']

[8, 'Avatar (2009)']

[8, 'Jaws (1975)']

[8, 'Matrix Reloaded, The (2003)']

[8, 'Back to the Future Part II (1989)']

[8, 'Total Recall (1990)']

[8, 'Star Wars: Episode II - Attack of the Clones (2002)']

[8, 'Star Trek: First Contact (1996)']

[8, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[8, 'Matrix Revolutions, The (2003)']

[8, 'Abyss, The (1989)']

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[8, 'Predator (1987)']

[8, 'Star Trek (2009)']

[8, 'Star Trek II: The Wrath of Khan (1982)']

[8, 'Close Encounters of the Third Kind (1977)']

[8, 'Signs (2002)']

[8, 'Mad Max: Fury Road (2015)']

[8, 'Star Wars: Episode VII - The Force Awakens (2015)']

[8, 'Star Trek IV: The Voyage Home (1986)']

[8, 'Edge of Tomorrow (2014)']

[8, 'Serenity (2005)']

[8, 'Terminator 3: Rise of the Machines (2003)']

[8, 'Highlander (1986)']

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[9, 'Toy Story (1995)']

[9, 'Aladdin (1992)']

[9, 'Lion King, The (1994)']

[9, 'Shrek (2001)']

[9, 'Princess Bride, The (1987)']

[9, 'Beauty and the Beast (1991)']

[9, 'Finding Nemo (2003)']

[9, 'Monsters, Inc. (2001)']

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[9, 'Incredibles, The (2004)']

[9, 'Willy Wonka & the Chocolate Factory (1971)']

[9, 'WALL·E (2008)']

[9, 'Toy Story 2 (1999)']

[9, 'Up (2009)']

[9, 'Wizard of Oz, The (1939)']

[9, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[9, "Bug's Life, A (1998)"]

[9, 'Nightmare Before Christmas, The (1993)']

[9, 'Who Framed Roger Rabbit? (1988)']

[9, 'Shrek 2 (2004)']

[9, 'Ratatouille (2007)']

[9, 'Chicken Run (2000)']

[9, 'Ice Age (2002)']

[9, 'Snow White and the Seven Dwarfs (1937)']

[9, 'Wallace & Gromit: The Wrong Trousers (1993)']

[9, 'Little Mermaid, The (1989)']

[9, 'Mary Poppins (1964)']

[9, 'Toy Story 3 (2010)']

[9, 'How to Train Your Dragon (2010)']

[9, 'Inside Out (2015)']

[9, 'Pocahontas (1995)']

[9, 'Pinocchio (1940)']

[9, 'Fantasia (1940)']

[9, 'Wallace & Gromit: A Close Shave (1995)']

[9, 'Kung Fu Panda (2008)']

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[10, "Schindler's List (1993)"]

[10, 'Braveheart (1995)']

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[10, 'Gladiator (2000)']

[10, 'Dances with Wolves (1990)']

[10, 'Casablanca (1942)']

[10, 'Apocalypse Now (1979)']

[10, 'Full Metal Jacket (1987)']

[10, 'Pianist, The (2002)']

[10, 'Traffic (2000)']

[10, 'Platoon (1986)']

[10, 'Few Good Men, A (1992)']

[10, 'Legends of the Fall (1994)']

[10, 'Last Samurai, The (2003)']

[10, 'The Imitation Game (2014)']

[10, 'Patriot, The (2000)']

[10, 'Gone with the Wind (1939)']

[10, "King's Speech, The (2010)"]

[10, 'Boot, Das (Boat, The) (1981)']

[10, 'Black Hawk Down (2001)']

[10, 'Seven Samurai (Shichinin no samurai) (1954)']

[10, 'Lawrence of Arabia (1962)']

[10, 'Bridge on the River Kwai, The (1957)']

[10, 'Blood Diamond (2006)']

[10, 'Good Morning, Vietnam (1987)']

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[10, 'Three Kings (1999)']

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[10, 'Hotel Rwanda (2004)']

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[11, 'Silence of the Lambs, The (1991)']

[11, 'Fight Club (1999)']

[11, 'Usual Suspects, The (1995)']

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[11, 'Seven (a.k.a. Se7en) (1995)']

[11, 'Fargo (1996)']

[11, 'Memento (2000)']

[11, 'Reservoir Dogs (1992)']

[11, 'Godfather: Part II, The (1974)']

[11, 'Kill Bill: Vol. 1 (2003)']

[11, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[11, 'Goodfellas (1990)']

[11, 'American History X (1998)']

[11, 'Shining, The (1980)']

[11, 'Clockwork Orange, A (1971)']

[11, 'Taxi Driver (1976)']

[11, 'Trainspotting (1996)']

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[11, 'Sin City (2005)']

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[11, 'Requiem for a Dream (2000)']

[11, 'Django Unchained (2012)']

[11, 'City of God (Cidade de Deus) (2002)']

[11, 'Lock, Stock & Two Smoking Barrels (1998)']

[11, 'No Country for Old Men (2007)']

[11, 'Casino (1995)']

[11, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[11, 'Chinatown (1974)']

[11, 'Untouchables, The (1987)']

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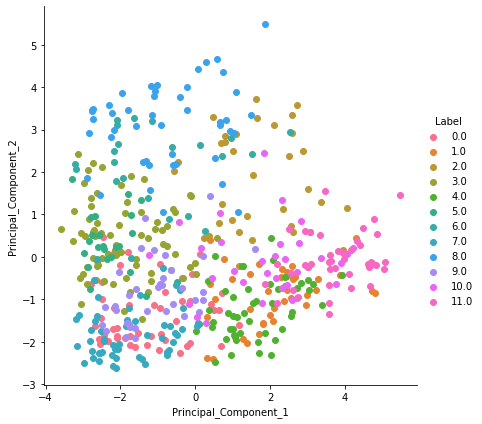
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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09983124132872687

Davies-Bouldin Index: 2.291132800332907

Calinski-Harabasz Score: 28.6077179421741

Test 14

Test type: DBScan

Parameters: Radius epsilon = 3.5 Min samples n = 5

Estimated number of clusters: 8

Estimated number of noise points: 408

(500,) (500,)

-1 356.0

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[0, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[0, 'Godfather: Part II, The (1974)']

[0, 'Kill Bill: Vol. 1 (2003)']

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[0, 'Dave (1993)']

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[0, 'To Kill a Mockingbird (1962)']

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[0, 'Lost World: Jurassic Park, The (1997)']

[0, 'Royal Tenenbaums, The (2001)']

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[0, 'Legends of the Fall (1994)']

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[0, 'Young Frankenstein (1974)']

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[0, 'Enemy of the State (1998)']

[0, "It's a Wonderful Life (1946)"]

[0, 'RoboCop (1987)']

[0, 'True Romance (1993)']

[0, 'Wallace & Gromit: The Wrong Trousers (1993)']

[0, 'Butch Cassidy and the Sundance Kid (1969)']

[0, 'Sound of Music, The (1965)']

[0, 'Patriot, The (2000)']

[0, 'Full Monty, The (1997)']

[0, 'Children of Men (2006)']

[0, 'Exorcist, The (1973)']

[0, 'Close Encounters of the Third Kind (1977)']

[0, 'Scarface (1983)']

[0, 'Unforgiven (1992)']

[0, 'Judge Dredd (1995)']

[0, 'English Patient, The (1996)']

[0, 'Superman (1978)']

[0, 'Client, The (1994)']

[0, 'Sleepy Hollow (1999)']

[0, 'Gone with the Wind (1939)']

[0, 'Rushmore (1998)']

[0, 'Galaxy Quest (1999)']

[0, "King's Speech, The (2010)"]

[0, 'Sherlock Holmes (2009)']

[0, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

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[0, 'I Am Legend (2007)']

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[0, 'Wedding Singer, The (1998)']

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[0, 'My Cousin Vinny (1992)']

[0, 'How to Train Your Dragon (2010)']

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[0, 'Boogie Nights (1997)']

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[0, 'The Hunger Games (2012)']

[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[0, '10 Things I Hate About You (1999)']

[0, 'Dragonheart (1996)']

[0, 'Zombieland (2009)']

[0, 'Bowling for Columbine (2002)']

[0, 'Pleasantville (1998)']

[0, 'Inside Out (2015)']

[0, 'Chasing Amy (1997)']

[0, 'Boot, Das (Boat, The) (1981)']

[0, 'Black Swan (2010)']

[0, "The Devil's Advocate (1997)"]

[0, 'Mad Max: Fury Road (2015)']

[0, 'Black Hawk Down (2001)']

[0, 'Gran Torino (2008)']

[0, 'Batman Returns (1992)']

[0, 'Rocky Horror Picture Show, The (1975)']

[0, 'Seven Samurai (Shichinin no samurai) (1954)']

[0, 'Election (1999)']

[0, 'Others, The (2001)']

[0, 'Coneheads (1993)']

[0, 'Romancing the Stone (1984)']

[0, 'Lawrence of Arabia (1962)']

[0, 'Last Action Hero (1993)']

[0, 'Princess Mononoke (Mononoke-hime) (1997)']

[0, 'Planet of the Apes (1968)']

[0, 'Much Ado About Nothing (1993)']

[0, 'Grand Budapest Hotel, The (2014)']

[0, 'Superbad (2007)']

[0, 'Blade (1998)']

[0, 'Species (1995)']

[0, 'Christmas Story, A (1983)']

[0, 'Mr. & Mrs. Smith (2005)']

[0, 'Arachnophobia (1990)']

[0, 'Gone Girl (2014)']

[0, 'Magnolia (1999)']

[0, 'Intouchables (2011)']

[0, 'Ring, The (2002)']

[0, 'Chocolat (2000)']

[0, 'Sling Blade (1996)']

[0, 'Star Wars: Episode VII - The Force Awakens (2015)']

[0, 'Bridge on the River Kwai, The (1957)']

[0, 'Star Trek IV: The Voyage Home (1986)']

[0, 'American Psycho (2000)']

[0, 'Ex Machina (2015)']

[0, 'Spaceballs (1987)']

[0, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[0, 'Charlie and the Chocolate Factory (2005)']

[0, 'Army of Darkness (1993)']

[0, 'Mulholland Drive (2001)']

[0, 'Jackie Brown (1997)']

[0, 'Phenomenon (1996)']

[0, 'Edge of Tomorrow (2014)']

[0, 'Field of Dreams (1989)']

[0, 'Tomorrow Never Dies (1997)']

[0, 'Fantasia (1940)']

[0, 'Gravity (2013)']

[0, 'Maltese Falcon, The (1941)']

[0, 'Blood Diamond (2006)']

[0, 'Wallace & Gromit: A Close Shave (1995)']

[0, 'Dark City (1998)']

[0, 'Good Morning, Vietnam (1987)']

[0, 'Johnny Mnemonic (1995)']

[0, 'Goldfinger (1964)']

[0, 'Three Musketeers, The (1993)']

[0, 'Old Boy (2003)']

[0, 'Watchmen (2009)']

[0, 'Crocodile Dundee (1986)']

[0, 'Last of the Mohicans, The (1992)']

[0, 'Three Kings (1999)']

[0, 'Dirty Dancing (1987)']

[0, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[0, 'Serenity (2005)']

[0, 'Thelma & Louise (1991)']

[0, 'Goonies, The (1985)']

[0, 'Gremlins (1984)']

[0, 'Illusionist, The (2006)']

[0, 'Sneakers (1992)']

[0, 'Wild Wild West (1999)']

[0, 'Birds, The (1963)']

[0, 'Deep Impact (1998)']

[0, 'Thomas Crown Affair, The (1999)']

[0, 'Glory (1989)']

[0, 'Rob Roy (1995)']

[0, 'Disclosure (1994)']

[0, 'Mystic River (2003)']

[0, 'Some Like It Hot (1959)']

[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Cool Hand Luke (1967)']

[0, 'Alien: Resurrection (1997)']

[0, 'Animal House (1978)']

[0, 'Beverly Hills Cop (1984)']

[0, '(500) Days of Summer (2009)']

[0, 'Scary Movie (2000)']

[0, 'Hotel Rwanda (2004)']

[0, 'X-Files: Fight the Future, The (1998)']

[0, 'Garden State (2004)']

[0, 'Highlander (1986)']

[0, 'Crying Game, The (1992)']

[0, 'Crash (2004)']

[0, 'Taken (2008)']

[0, "Pirates of the Caribbean: At World's End (2007)"]

[0, 'Deer Hunter, The (1978)']

[0, 'Blazing Saddles (1974)']

[0, 'First Knight (1995)']

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[1, 'Toy Story (1995)']

[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Toy Story 2 (1999)']

[1, "Bug's Life, A (1998)"]

[1, 'Ratatouille (2007)']

[1, 'Ice Age (2002)']

[1, 'Toy Story 3 (2010)']

[1, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[2, 'Aladdin (1992)']

[2, 'Lion King, The (1994)']

[2, 'Beauty and the Beast (1991)']

[2, 'Babe (1995)']

[2, 'Snow White and the Seven Dwarfs (1937)']

[2, 'Little Mermaid, The (1989)']

[2, 'Mary Poppins (1964)']

[2, 'Pocahontas (1995)']

[2, 'Pinocchio (1940)']

--------- NEW CLUSTER -----------

[3, 'Speed (1994)']

[3, 'Die Hard: With a Vengeance (1995)']

[3, 'Rock, The (1996)']

[3, 'Cliffhanger (1993)']

[3, 'Broken Arrow (1996)']

[3, 'Face/Off (1997)']

[3, 'Lethal Weapon (1987)']

[3, 'Die Hard 2 (1990)']

[3, 'Eraser (1996)']

[3, 'Con Air (1997)']

[3, 'Air Force One (1997)']

[3, 'Beverly Hills Cop III (1994)']

[3, 'Italian Job, The (2003)']

[3, 'Lethal Weapon 2 (1989)']

[3, 'Bad Boys (1995)']

[3, 'Rush Hour (1998)']

[3, 'Gone in 60 Seconds (2000)']

[3, 'Executive Decision (1996)']

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[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Mask, The (1994)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, "There's Something About Mary (1998)"]

[4, 'Ace Ventura: When Nature Calls (1995)']

[4, 'Meet the Parents (2000)']

[4, 'Happy Gilmore (1996)']

[4, 'Nutty Professor, The (1996)']

[4, 'Liar Liar (1997)']

[4, 'Bruce Almighty (2003)']

[4, '40-Year-Old Virgin, The (2005)']

[4, 'Cable Guy, The (1996)']

[4, 'Robin Hood: Men in Tights (1993)']

[4, 'Naked Gun 33 1/3: The Final Insult (1994)']

[4, 'Hot Shots! Part Deux (1993)']

[4, 'So I Married an Axe Murderer (1993)']

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[5, 'Pretty Woman (1990)']

[5, 'Ghost (1990)']

[5, 'Sleepless in Seattle (1993)']

[5, 'Four Weddings and a Funeral (1994)']

[5, 'While You Were Sleeping (1995)']

[5, 'Addams Family Values (1993)']

[5, "Bridget Jones's Diary (2001)"]

[5, 'Notting Hill (1999)']

[5, 'Truth About Cats & Dogs, The (1996)']

[5, 'Love Actually (2003)']

[5, 'My Big Fat Greek Wedding (2002)']

[5, "You've Got Mail (1998)"]

[5, 'Legally Blonde (2001)']

[5, 'Miss Congeniality (2000)']

[5, 'Sabrina (1995)']

[5, 'Grumpier Old Men (1995)']

[5, "City Slickers II: The Legend of Curly's Gold (1994)"]

[5, 'Father of the Bride Part II (1995)']

[5, 'What Women Want (2000)']

[5, 'French Kiss (1995)']

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[6, 'X-Men (2000)']

[6, 'Spider-Man (2002)']

[6, 'Iron Man (2008)']

[6, 'Spider-Man 2 (2004)']

[6, 'X2: X-Men United (2003)']

[6, 'Avengers, The (2012)']

[6, 'Iron Man 2 (2010)']

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[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

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[8, 'Mrs. Doubtfire (1993)']

[8, 'Home Alone (1990)']

[8, 'Honey, I Shrunk the Kids (1989)']

[8, 'Santa Clause, The (1994)']

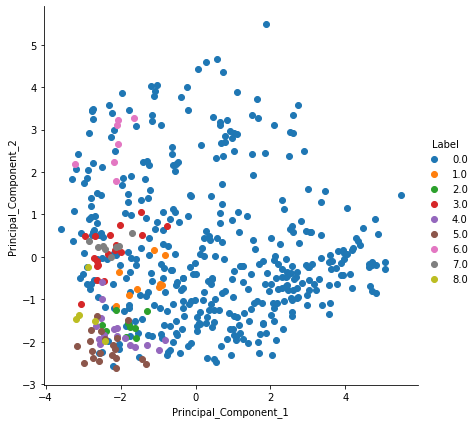
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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.056949424819505726

Davies-Bouldin Index: 1.7226900509133296

Calinski-Harabasz Score: 8.697604665153467

Test 15

Test type: DBScan

Parameters: Radius epsilon = 3.6 Min samples n = 5

Estimated number of clusters: 7

Estimated number of noise points: 395

(500,) (500,)

-1 356.0

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[0, 'Forrest Gump (1994)']

[0, 'Shawshank Redemption, The (1994)']

[0, 'Pulp Fiction (1994)']

[0, 'Silence of the Lambs, The (1991)']

[0, 'Matrix, The (1999)']

[0, 'Star Wars: Episode IV - A New Hope (1977)']

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[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

[0, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'American Beauty (1999)']

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[0, 'Lord of the Rings: The Two Towers, The (2002)']

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[0, 'E.T. the Extra-Terrestrial (1982)']

[0, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[0, 'Godfather: Part II, The (1974)']

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[0, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

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[0, 'Clear and Present Danger (1994)']

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[0, 'Apocalypse Now (1979)']

[0, 'Clueless (1995)']

[0, 'V for Vendetta (2006)']

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[0, 'Wizard of Oz, The (1939)']

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[0, 'Avatar (2009)']

[0, 'Indiana Jones and the Temple of Doom (1984)']

[0, 'Jumanji (1995)']

[0, 'Jaws (1975)']

[0, 'Firm, The (1993)']

[0, 'Breakfast Club, The (1985)']

[0, 'Shakespeare in Love (1998)']

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[0, 'Life Is Beautiful (La Vita è bella) (1997)']

[0, 'Edward Scissorhands (1990)']

[0, 'O Brother, Where Art Thou? (2000)']

[0, 'Natural Born Killers (1994)']

[0, 'Austin Powers: International Man of Mystery (1997)']

[0, 'As Good as It Gets (1997)']

[0, 'Inglourious Basterds (2009)']

[0, 'Matrix Reloaded, The (2003)']

[0, 'Net, The (1995)']

[0, 'Back to the Future Part II (1989)']

[0, 'Jerry Maguire (1996)']

[0, 'Office Space (1999)']

[0, 'Prestige, The (2006)']

[0, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[0, 'Stand by Me (1986)']

[0, 'Armageddon (1998)']

[0, 'Interstellar (2014)']

[0, "Monty Python's Life of Brian (1979)"]

[0, 'Total Recall (1990)']

[0, 'Crimson Tide (1995)']

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[0, 'Sin City (2005)']

[0, 'Hunt for Red October, The (1990)']

[0, 'Psycho (1960)']

[0, 'Requiem for a Dream (2000)']

[0, 'Nightmare Before Christmas, The (1993)']

[0, 'Who Framed Roger Rabbit? (1988)']

[0, 'Gattaca (1997)']

[0, 'Back to the Future Part III (1990)']

[0, 'Contact (1997)']

[0, 'Amadeus (1984)']

[0, 'Star Wars: Episode II - Attack of the Clones (2002)']

[0, 'Beetlejuice (1988)']

[0, 'Birdcage, The (1996)']

[0, 'Django Unchained (2012)']

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[0, 'Casino Royale (2006)']

[0, 'Top Gun (1986)']

[0, 'Big (1988)']

[0, 'Lost in Translation (2003)']

[0, 'Rear Window (1954)']

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[0, 'Philadelphia (1993)']

[0, 'City of God (Cidade de Deus) (2002)']

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[0, 'Sense and Sensibility (1995)']

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[0, 'Blair Witch Project, The (1999)']

[0, 'Dead Man Walking (1995)']

[0, 'Lock, Stock & Two Smoking Barrels (1998)']

[0, 'Star Trek: First Contact (1996)']

[0, 'Mummy, The (1999)']

[0, 'Citizen Kane (1941)']

[0, 'Slumdog Millionaire (2008)']

[0, 'Little Miss Sunshine (2006)']

[0, 'Quiz Show (1994)']

[0, 'Run Lola Run (Lola rennt) (1998)']

[0, 'Shutter Island (2010)']

[0, '300 (2007)']

[0, 'Chicken Run (2000)']

[0, 'Graduate, The (1967)']

[0, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[0, 'Game, The (1997)']

[0, 'No Country for Old Men (2007)']

[0, 'Casino (1995)']

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[0, "Mr. Holland's Opus (1995)"]

[0, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[0, 'Erin Brockovich (2000)']

[0, 'Demolition Man (1993)']

[0, 'Matrix Revolutions, The (2003)']

[0, 'In the Line of Fire (1993)']

[0, 'District 9 (2009)']

[0, "Charlie's Angels (2000)"]

[0, 'Dave (1993)']

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[0, 'RoboCop (1987)']

[0, 'True Romance (1993)']

[0, 'Wallace & Gromit: The Wrong Trousers (1993)']

[0, 'Butch Cassidy and the Sundance Kid (1969)']

[0, 'Sound of Music, The (1965)']

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[0, 'Scarface (1983)']

[0, 'Unforgiven (1992)']

[0, 'Judge Dredd (1995)']

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[0, 'How to Train Your Dragon (2010)']

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[0, 'The Hunger Games (2012)']

[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[0, '10 Things I Hate About You (1999)']

[0, 'Dragonheart (1996)']

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[0, 'Romancing the Stone (1984)']

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[0, 'Planet of the Apes (1968)']

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[0, 'Blade (1998)']

[0, 'Species (1995)']

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[0, 'Arachnophobia (1990)']

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[0, 'Ring, The (2002)']

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[0, 'Sling Blade (1996)']

[0, 'Star Wars: Episode VII - The Force Awakens (2015)']

[0, 'Bridge on the River Kwai, The (1957)']

[0, 'Star Trek IV: The Voyage Home (1986)']

[0, 'American Psycho (2000)']

[0, 'Ex Machina (2015)']

[0, 'Spaceballs (1987)']

[0, 'Charlie and the Chocolate Factory (2005)']

[0, 'Army of Darkness (1993)']

[0, 'Mulholland Drive (2001)']

[0, 'Jackie Brown (1997)']

[0, 'Phenomenon (1996)']

[0, 'Edge of Tomorrow (2014)']

[0, 'Field of Dreams (1989)']

[0, 'Fantasia (1940)']

[0, 'Gravity (2013)']

[0, 'Maltese Falcon, The (1941)']

[0, 'Blood Diamond (2006)']

[0, 'Wallace & Gromit: A Close Shave (1995)']

[0, 'Dark City (1998)']

[0, 'Good Morning, Vietnam (1987)']

[0, 'Johnny Mnemonic (1995)']

[0, 'Goldfinger (1964)']

[0, 'Three Musketeers, The (1993)']

[0, 'Old Boy (2003)']

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[0, 'Crocodile Dundee (1986)']

[0, 'Last of the Mohicans, The (1992)']

[0, 'Three Kings (1999)']

[0, 'Dirty Dancing (1987)']

[0, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[0, 'Serenity (2005)']

[0, 'Thelma & Louise (1991)']

[0, 'Goonies, The (1985)']

[0, 'Gremlins (1984)']

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[0, 'Sneakers (1992)']

[0, 'Wild Wild West (1999)']

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[0, 'Glory (1989)']

[0, 'Rob Roy (1995)']

[0, 'Disclosure (1994)']

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[0, 'Taken (2008)']

[0, "Pirates of the Caribbean: At World's End (2007)"]

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[0, 'Blazing Saddles (1974)']

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[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Toy Story 2 (1999)']

[1, "Bug's Life, A (1998)"]

[1, 'Shrek 2 (2004)']

[1, 'Ratatouille (2007)']

[1, 'Ice Age (2002)']

[1, 'Toy Story 3 (2010)']

[1, 'Kung Fu Panda (2008)']

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[2, 'Aladdin (1992)']

[2, 'Lion King, The (1994)']

[2, 'Beauty and the Beast (1991)']

[2, 'Babe (1995)']

[2, 'Snow White and the Seven Dwarfs (1937)']

[2, 'Little Mermaid, The (1989)']

[2, 'Mary Poppins (1964)']

[2, 'Pocahontas (1995)']

[2, 'Pinocchio (1940)']

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[3, 'True Lies (1994)']

[3, 'Speed (1994)']

[3, 'Mission: Impossible (1996)']

[3, 'Die Hard: With a Vengeance (1995)']

[3, 'Rock, The (1996)']

[3, 'Cliffhanger (1993)']

[3, 'Broken Arrow (1996)']

[3, 'Face/Off (1997)']

[3, 'Lethal Weapon (1987)']

[3, 'Mission: Impossible II (2000)']

[3, 'Die Hard 2 (1990)']

[3, 'Eraser (1996)']

[3, 'Con Air (1997)']

[3, 'Air Force One (1997)']

[3, 'Beverly Hills Cop III (1994)']

[3, 'Italian Job, The (2003)']

[3, 'Lethal Weapon 2 (1989)']

[3, 'Mr. & Mrs. Smith (2005)']

[3, 'Bad Boys (1995)']

[3, 'Tomorrow Never Dies (1997)']

[3, 'Rush Hour (1998)']

[3, 'Thomas Crown Affair, The (1999)']

[3, 'Gone in 60 Seconds (2000)']

[3, 'Executive Decision (1996)']

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[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Mask, The (1994)']

[4, 'Pretty Woman (1990)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, 'Ghost (1990)']

[4, 'Sleepless in Seattle (1993)']

[4, 'Four Weddings and a Funeral (1994)']

[4, "There's Something About Mary (1998)"]

[4, 'Austin Powers: The Spy Who Shagged Me (1999)']

[4, 'When Harry Met Sally... (1989)']

[4, 'While You Were Sleeping (1995)']

[4, 'Ace Ventura: When Nature Calls (1995)']

[4, 'Meet the Parents (2000)']

[4, 'Happy Gilmore (1996)']

[4, 'Nutty Professor, The (1996)']

[4, 'Liar Liar (1997)']

[4, 'Addams Family Values (1993)']

[4, 'American President, The (1995)']

[4, 'Bruce Almighty (2003)']

[4, "Bridget Jones's Diary (2001)"]

[4, '40-Year-Old Virgin, The (2005)']

[4, 'Cable Guy, The (1996)']

[4, 'Notting Hill (1999)']

[4, 'Robin Hood: Men in Tights (1993)']

[4, 'Wedding Singer, The (1998)']

[4, 'Naked Gun 33 1/3: The Final Insult (1994)']

[4, 'Truth About Cats & Dogs, The (1996)']

[4, 'Love Actually (2003)']

[4, 'Hot Shots! Part Deux (1993)']

[4, 'My Big Fat Greek Wedding (2002)']

[4, "You've Got Mail (1998)"]

[4, 'Legally Blonde (2001)']

[4, 'Miss Congeniality (2000)']

[4, 'Sabrina (1995)']

[4, 'Grumpier Old Men (1995)']

[4, "City Slickers II: The Legend of Curly's Gold (1994)"]

[4, 'Father of the Bride Part II (1995)']

[4, 'What Women Want (2000)']

[4, 'So I Married an Axe Murderer (1993)']

[4, 'French Kiss (1995)']

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[5, 'X-Men (2000)']

[5, 'Spider-Man (2002)']

[5, 'Iron Man (2008)']

[5, 'Spider-Man 2 (2004)']

[5, 'X2: X-Men United (2003)']

[5, 'Avengers, The (2012)']

[5, 'Guardians of the Galaxy (2014)']

[5, 'Iron Man 2 (2010)']

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[6, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[6, 'Harry Potter and the Prisoner of Azkaban (2004)']

[6, 'Harry Potter and the Chamber of Secrets (2002)']

[6, 'Harry Potter and the Goblet of Fire (2005)']

[6, 'Harry Potter and the Order of the Phoenix (2007)']

[6, 'Harry Potter and the Half-Blood Prince (2009)']

[6, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[6, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[6, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[7, 'Mrs. Doubtfire (1993)']

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[7, 'Santa Clause, The (1994)']

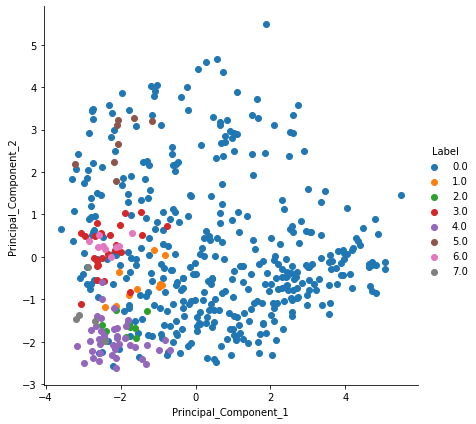
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(500, 1128) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.041272422784171967

Davies-Bouldin Index: 1.8101731252648825

Calinski-Harabasz Score: 10.398988085247774

Test 16

Test type: DBScan

Parameters: Radius epsilon = 3.7 Min samples n = 5

Estimated number of clusters: 5

Estimated number of noise points: 383

(500,) (500,)

-1 356.0

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[0, 'Forrest Gump (1994)']

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[0, 'Pulp Fiction (1994)']

[0, 'Silence of the Lambs, The (1991)']

[0, 'Matrix, The (1999)']

[0, 'Star Wars: Episode IV - A New Hope (1977)']

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[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

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[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

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[0, 'Natural Born Killers (1994)']

[0, 'Austin Powers: International Man of Mystery (1997)']

[0, 'As Good as It Gets (1997)']

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[0, 'Matrix Reloaded, The (2003)']

[0, 'Net, The (1995)']

[0, 'Back to the Future Part II (1989)']

[0, 'Jerry Maguire (1996)']

[0, 'Office Space (1999)']

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[0, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[0, 'Stand by Me (1986)']

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[0, 'Interstellar (2014)']

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[0, 'Total Recall (1990)']

[0, 'Crimson Tide (1995)']

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[0, 'Requiem for a Dream (2000)']

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[0, 'Who Framed Roger Rabbit? (1988)']

[0, 'Gattaca (1997)']

[0, 'Back to the Future Part III (1990)']

[0, 'Contact (1997)']

[0, 'Amadeus (1984)']

[0, 'Star Wars: Episode II - Attack of the Clones (2002)']

[0, 'Beetlejuice (1988)']

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[0, 'Django Unchained (2012)']

[0, 'Airplane! (1980)']

[0, 'Bourne Ultimatum, The (2007)']

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[0, 'Top Gun (1986)']

[0, 'Big (1988)']

[0, 'Lost in Translation (2003)']

[0, 'Rear Window (1954)']

[0, 'Bourne Supremacy, The (2004)']

[0, 'Leaving Las Vegas (1995)']

[0, 'Dark Knight Rises, The (2012)']

[0, 'Philadelphia (1993)']

[0, 'City of God (Cidade de Deus) (2002)']

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[0, 'Sense and Sensibility (1995)']

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[0, 'Lock, Stock & Two Smoking Barrels (1998)']

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[0, 'Run Lola Run (Lola rennt) (1998)']

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[0, 'Star Wars: Episode III - Revenge of the Sith (2005)']

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[0, 'Casino (1995)']

[0, 'Juno (2007)']

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[0, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[0, 'Erin Brockovich (2000)']

[0, 'Demolition Man (1993)']

[0, 'Matrix Revolutions, The (2003)']

[0, 'In the Line of Fire (1993)']

[0, 'District 9 (2009)']

[0, "Charlie's Angels (2000)"]

[0, 'Dave (1993)']

[0, 'Mars Attacks! (1996)']

[0, 'South Park: Bigger, Longer and Uncut (1999)']

[0, 'Abyss, The (1989)']

[0, 'Big Fish (2003)']

[0, 'I, Robot (2004)']

[0, 'Starship Troopers (1997)']

[0, "What's Eating Gilbert Grape (1993)"]

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[0, 'High Fidelity (2000)']

[0, 'Chinatown (1974)']

[0, 'Rocky (1976)']

[0, 'North by Northwest (1959)']

[0, 'Platoon (1986)']

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[0, '12 Angry Men (1957)']

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[2, 'Little Mermaid, The (1989)']

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[3, 'Die Hard: With a Vengeance (1995)']

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[3, 'Four Weddings and a Funeral (1994)']

[3, 'Clueless (1995)']

[3, "There's Something About Mary (1998)"]

[3, 'Austin Powers: The Spy Who Shagged Me (1999)']

[3, 'Cliffhanger (1993)']

[3, 'When Harry Met Sally... (1989)']

[3, 'While You Were Sleeping (1995)']

[3, 'Ace Ventura: When Nature Calls (1995)']

[3, 'Broken Arrow (1996)']

[3, 'Casino Royale (2006)']

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[3, 'Meet the Parents (2000)']

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[3, 'Beverly Hills Cop III (1994)']

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[3, 'Love Actually (2003)']

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[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

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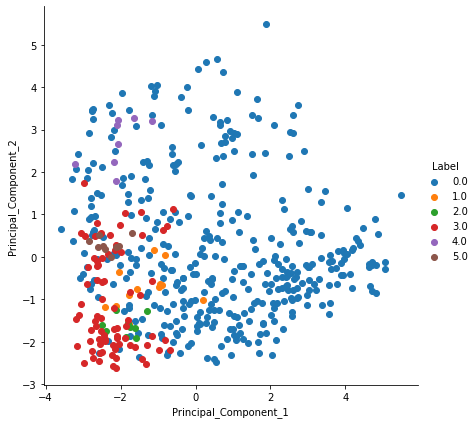
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.008810933463302105

Davies-Bouldin Index: 1.8789779396274584

Calinski-Harabasz Score: 13.350605817303967

Test 17

Test type: DBScan

Parameters: Radius epsilon = 3.8000000000000003 Min samples n = 5

Estimated number of clusters: 6

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(500,) (500,)

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[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Cool Hand Luke (1967)']

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[0, '(500) Days of Summer (2009)']

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[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Babe (1995)']

[1, 'Toy Story 2 (1999)']

[1, 'Up (2009)']

[1, "Bug's Life, A (1998)"]

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[1, 'Ratatouille (2007)']

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[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

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[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

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[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

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[2, 'Rock, The (1996)']

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[2, 'Twister (1996)']

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[2, 'Austin Powers: International Man of Mystery (1997)']

[2, 'Cliffhanger (1993)']

[2, 'When Harry Met Sally... (1989)']

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[2, 'Ace Ventura: When Nature Calls (1995)']

[2, 'Broken Arrow (1996)']

[2, 'Airplane! (1980)']

[2, 'Casino Royale (2006)']

[2, 'Face/Off (1997)']

[2, 'Meet the Parents (2000)']

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[2, "Bridget Jones's Diary (2001)"]

[2, 'Air Force One (1997)']

[2, '40-Year-Old Virgin, The (2005)']

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[2, 'Notting Hill (1999)']

[2, 'Robin Hood: Men in Tights (1993)']

[2, "Wayne's World (1992)"]

[2, 'Wedding Singer, The (1998)']

[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, 'Italian Job, The (2003)']

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[2, 'Much Ado About Nothing (1993)']

[2, 'Hot Shots! Part Deux (1993)']

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[2, 'Grumpier Old Men (1995)']

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[2, 'Rush Hour (1998)']

[2, 'Father of the Bride Part II (1995)']

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[2, 'What Women Want (2000)']

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[2, 'So I Married an Axe Murderer (1993)']

[2, 'French Kiss (1995)']

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[3, 'Iron Man (2008)']

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[3, 'X2: X-Men United (2003)']

[3, 'Avengers, The (2012)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Iron Man 2 (2010)']

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[4, 'Harry Potter and the Prisoner of Azkaban (2004)']

[4, 'Harry Potter and the Chamber of Secrets (2002)']

[4, 'Harry Potter and the Goblet of Fire (2005)']

[4, 'Harry Potter and the Order of the Phoenix (2007)']

[4, 'Harry Potter and the Half-Blood Prince (2009)']

[4, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[4, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[4, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Stargate (1994)']

[5, 'Star Trek: Generations (1994)']

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[5, 'Star Trek II: The Wrath of Khan (1982)']

[5, 'Star Trek IV: The Voyage Home (1986)']

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[6, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[6, 'Star Wars: Episode I - The Phantom Menace (1999)']

[6, 'Star Wars: Episode II - Attack of the Clones (2002)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

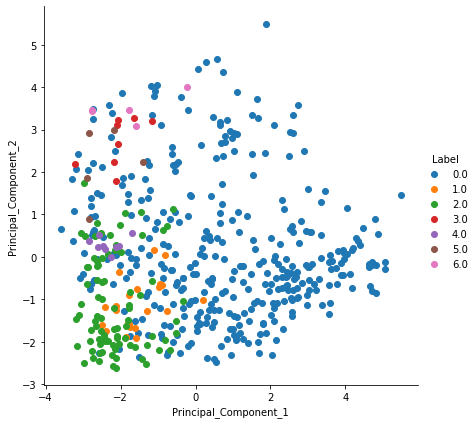
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.006148623520689835

Davies-Bouldin Index: 1.820135571520807

Calinski-Harabasz Score: 13.196109803825742

Test 18

Test type: DBScan

Parameters: Radius epsilon = 3.9000000000000004 Min samples n = 5

Estimated number of clusters: 6

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[0, 'Erin Brockovich (2000)']

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[0, 'Cool Hand Luke (1967)']

[0, 'Alien: Resurrection (1997)']

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[0, '(500) Days of Summer (2009)']

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[1, 'Shrek (2001)']

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[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Babe (1995)']

[1, 'Incredibles, The (2004)']

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[1, 'Up (2009)']

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[1, 'Ratatouille (2007)']

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[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

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[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Pocahontas (1995)']

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[1, 'Fantasia (1940)']

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[2, 'Speed (1994)']

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[2, 'Mask, The (1994)']

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[2, 'Mrs. Doubtfire (1993)']

[2, 'Die Hard: With a Vengeance (1995)']

[2, 'Rock, The (1996)']

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[2, 'Twister (1996)']

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[2, 'Sleepless in Seattle (1993)']

[2, 'Four Weddings and a Funeral (1994)']

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[2, 'Austin Powers: The Spy Who Shagged Me (1999)']

[2, 'Outbreak (1995)']

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[2, 'Airplane! (1980)']

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[2, 'Addams Family Values (1993)']

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[2, 'Honey, I Shrunk the Kids (1989)']

[2, 'Santa Clause, The (1994)']

[2, 'Young Frankenstein (1974)']

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[2, 'Bruce Almighty (2003)']

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[2, 'Air Force One (1997)']

[2, '40-Year-Old Virgin, The (2005)']

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[2, 'Notting Hill (1999)']

[2, 'Robin Hood: Men in Tights (1993)']

[2, "Wayne's World (1992)"]

[2, 'Wedding Singer, The (1998)']

[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, 'Congo (1995)']

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[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

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[2, 'Mr. & Mrs. Smith (2005)']

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[2, 'Rush Hour (1998)']

[2, 'Father of the Bride Part II (1995)']

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[3, 'Guardians of the Galaxy (2014)']

[3, 'Iron Man 2 (2010)']

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[4, 'Harry Potter and the Prisoner of Azkaban (2004)']

[4, 'Harry Potter and the Chamber of Secrets (2002)']

[4, 'Harry Potter and the Goblet of Fire (2005)']

[4, 'Harry Potter and the Order of the Phoenix (2007)']

[4, 'Harry Potter and the Half-Blood Prince (2009)']

[4, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[4, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[4, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Stargate (1994)']

[5, 'Star Trek: Generations (1994)']

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[5, 'Star Trek II: The Wrath of Khan (1982)']

[5, 'Star Trek IV: The Voyage Home (1986)']

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[6, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[6, 'Star Wars: Episode I - The Phantom Menace (1999)']

[6, 'Star Wars: Episode II - Attack of the Clones (2002)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[6, 'Star Trek (2009)']

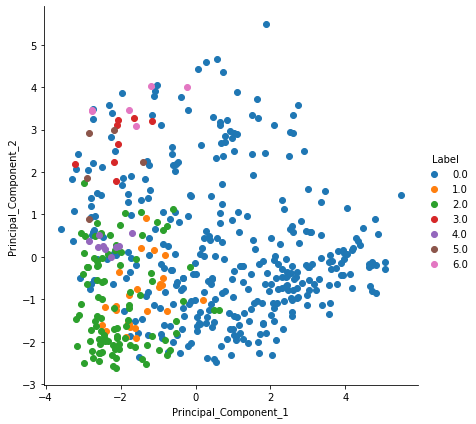
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.002362292275070356

Davies-Bouldin Index: 1.842202214350184

Calinski-Harabasz Score: 14.265416033274168

Test 19

Test type: DBScan

Parameters: Radius epsilon = 4.0 Min samples n = 5

Estimated number of clusters: 7

Estimated number of noise points: 317

(500,) (500,)

-1 356.0

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[0, 'Unbreakable (2000)']

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[0, 'The Hunger Games (2012)']

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[0, 'Dragonheart (1996)']

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[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

[1, 'How to Train Your Dragon (2010)']

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[2, 'Die Hard: With a Vengeance (1995)']

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[2, 'Austin Powers: International Man of Mystery (1997)']

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[2, 'Santa Clause, The (1994)']

[2, 'Young Frankenstein (1974)']

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[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

[2, 'Beverly Hills Cop III (1994)']

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[2, 'Mask of Zorro, The (1998)']

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[2, 'Wild Wild West (1999)']

[2, 'Rush Hour (1998)']

[2, 'Father of the Bride Part II (1995)']

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[3, 'Iron Man 2 (2010)']

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[4, 'Harry Potter and the Chamber of Secrets (2002)']

[4, 'Harry Potter and the Goblet of Fire (2005)']

[4, 'Harry Potter and the Order of the Phoenix (2007)']

[4, 'Harry Potter and the Half-Blood Prince (2009)']

[4, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[4, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[4, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Galaxy Quest (1999)']

[5, 'Coneheads (1993)']

[5, 'Star Trek IV: The Voyage Home (1986)']

[5, 'X-Files: Fight the Future, The (1998)']

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[7, 'Star Wars: Episode II - Attack of the Clones (2002)']

[7, 'Star Wars: Episode III - Revenge of the Sith (2005)']

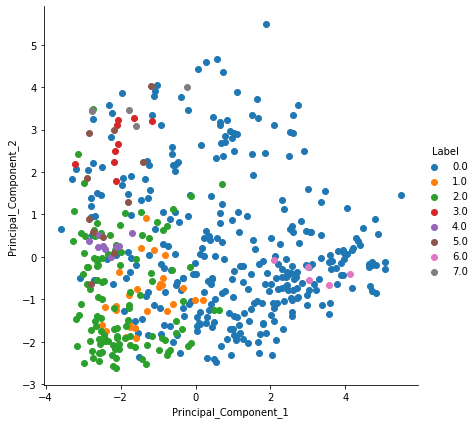
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.022106027988200296

Davies-Bouldin Index: 1.8751399422912267

Calinski-Harabasz Score: 14.46374561540996

Test 20

Test type: DBScan

Parameters: Radius epsilon = 4.1000000000000005 Min samples n = 5

Estimated number of clusters: 6

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(500,) (500,)

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[3, 'Harry Potter and the Prisoner of Azkaban (2004)']

[3, 'Harry Potter and the Chamber of Secrets (2002)']

[3, 'Harry Potter and the Goblet of Fire (2005)']

[3, 'Harry Potter and the Order of the Phoenix (2007)']

[3, 'Harry Potter and the Half-Blood Prince (2009)']

[3, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[3, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[3, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[5, 'Star Wars: Episode VII - The Force Awakens (2015)']

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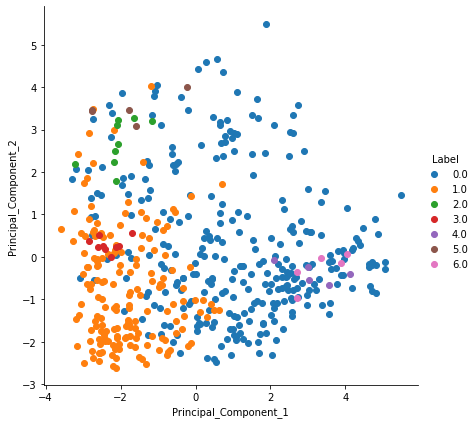
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.02626636433569263

Davies-Bouldin Index: 1.9062060729979466

Calinski-Harabasz Score: 14.201307920445759

Test 21

Test type: DBScan

Parameters: Radius epsilon = 4.200000000000001 Min samples n = 5

Estimated number of clusters: 8

Estimated number of noise points: 270

(500,) (500,)

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[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[7, 'Star Wars: Episode III - Revenge of the Sith (2005)']

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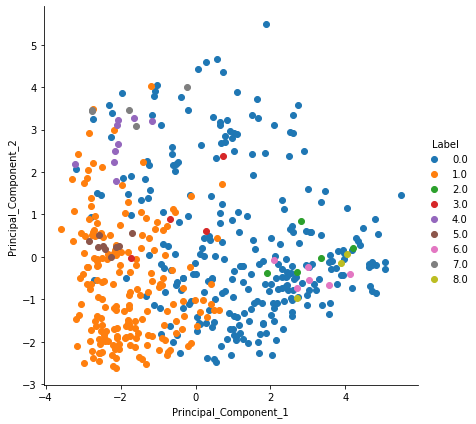
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.02357066856841393

Davies-Bouldin Index: 1.827066419636402

Calinski-Harabasz Score: 12.797152324311167

Test 22

Test type: DBScan

Parameters: Radius epsilon = 4.300000000000001 Min samples n = 5

Estimated number of clusters: 8

Estimated number of noise points: 244

(500,) (500,)

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[1, 'Star Wars: Episode III - Revenge of the Sith (2005)']

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[1, 'Addams Family Values (1993)']

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[1, 'This Is Spinal Tap (1984)']

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[1, 'Star Trek (2009)']

[1, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[1, 'Lost World: Jurassic Park, The (1997)']

[1, 'Star Trek II: The Wrath of Khan (1982)']

[1, 'Santa Clause, The (1994)']

[1, 'Young Frankenstein (1974)']

[1, 'Enemy of the State (1998)']

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[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

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[1, 'School of Rock (2003)']

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[1, 'Wedding Singer, The (1998)']

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Beverly Hills Cop III (1994)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'Congo (1995)']

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[1, 'How to Train Your Dragon (2010)']

[1, 'Alien³ (a.k.a. Alien 3) (1992)']

[1, 'Signs (2002)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

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[1, 'Bad Boys (1995)']

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[1, 'Pinocchio (1940)']

[1, 'Star Wars: Episode VII - The Force Awakens (2015)']

[1, "You've Got Mail (1998)"]

[1, 'Casper (1995)']

[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Spaceballs (1987)']

[1, 'Legally Blonde (2001)']

[1, 'Phenomenon (1996)']

[1, 'Miss Congeniality (2000)']

[1, 'Tomorrow Never Dies (1997)']

[1, 'Fantasia (1940)']

[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Sabrina (1995)']

[1, 'Goldfinger (1964)']

[1, 'Three Musketeers, The (1993)']

[1, 'Dirty Dancing (1987)']

[1, 'Serenity (2005)']

[1, 'Thelma & Louise (1991)']

[1, 'Goonies, The (1985)']

[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Wild Wild West (1999)']

[1, 'Rush Hour (1998)']

[1, 'Father of the Bride Part II (1995)']

[1, 'Deep Impact (1998)']

[1, 'Thomas Crown Affair, The (1999)']

[1, 'Rob Roy (1995)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, 'Alien: Resurrection (1997)']

[1, 'Animal House (1978)']

[1, 'Beverly Hills Cop (1984)']

[1, 'Scary Movie (2000)']

[1, 'Gone in 60 Seconds (2000)']

[1, 'X-Files: Fight the Future, The (1998)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'French Kiss (1995)']

[1, 'Taken (2008)']

[1, 'Blazing Saddles (1974)']

[1, 'First Knight (1995)']

[1, 'Executive Decision (1996)']

[1, 'Kung Fu Panda (2008)']

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[2, 'Saving Private Ryan (1998)']

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[2, 'Full Metal Jacket (1987)']

[2, 'Platoon (1986)']

[2, 'Boot, Das (Boat, The) (1981)']

[2, 'Bridge on the River Kwai, The (1957)']

[2, 'Glory (1989)']

[2, 'Deer Hunter, The (1978)']

[2, 'Great Escape, The (1963)']

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[3, 'Batman (1989)']

[3, 'Batman Begins (2005)']

[3, 'Crow, The (1994)']

[3, 'Batman Returns (1992)']

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[4, 'Godfather, The (1972)']

[4, 'Goodfellas (1990)']

[4, 'Departed, The (2006)']

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[4, 'Scarface (1983)']

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[5, 'X-Men (2000)']

[5, 'Spider-Man (2002)']

[5, 'Iron Man (2008)']

[5, 'Spider-Man 2 (2004)']

[5, 'X2: X-Men United (2003)']

[5, 'Avengers, The (2012)']

[5, 'Guardians of the Galaxy (2014)']

[5, 'Superman (1978)']

[5, 'Iron Man 2 (2010)']

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[6, 'Beautiful Mind, A (2001)']

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[6, 'As Good as It Gets (1997)']

[6, 'Million Dollar Baby (2004)']

[6, 'Sling Blade (1996)']

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[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[8, 'Psycho (1960)']

[8, 'Rear Window (1954)']

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[8, 'Maltese Falcon, The (1941)']

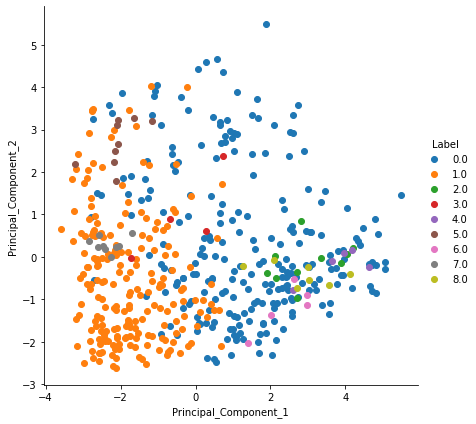
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.02006848184161522

Davies-Bouldin Index: 1.984448172646475

Calinski-Harabasz Score: 13.482530996323842

Test 23

Test type: DBScan

Parameters: Radius epsilon = 4.4 Min samples n = 5

Estimated number of clusters: 10

Estimated number of noise points: 203

(500,) (500,)

-1 356.0

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[0, 'Lord of the Rings: The Return of the King, The (2003)']

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[0, 'Kill Bill: Vol. 1 (2003)']

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[0, 'Fifth Element, The (1997)']

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[0, 'Close Encounters of the Third Kind (1977)']

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[0, 'Mad Max: Fury Road (2015)']

[0, 'Black Hawk Down (2001)']

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[0, 'Lawrence of Arabia (1962)']

[0, 'Princess Mononoke (Mononoke-hime) (1997)']

[0, 'Planet of the Apes (1968)']

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[0, '(500) Days of Summer (2009)']

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[1, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[1, 'Fugitive, The (1993)']

[1, 'Independence Day (a.k.a. ID4) (1996)']

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[1, 'Lion King, The (1994)']

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[1, 'Speed (1994)']

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[1, 'Monty Python and the Holy Grail (1975)']

[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[1, 'Mission: Impossible (1996)']

[1, 'Die Hard (1988)']

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'Mask, The (1994)']

[1, 'Monsters, Inc. (2001)']

[1, 'Pretty Woman (1990)']

[1, 'Mrs. Doubtfire (1993)']

[1, 'Die Hard: With a Vengeance (1995)']

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[1, 'Twister (1996)']

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[1, 'Incredibles, The (2004)']

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[1, 'Sleepless in Seattle (1993)']

[1, 'Willy Wonka & the Chocolate Factory (1971)']

[1, 'Clear and Present Danger (1994)']

[1, 'Waterworld (1995)']

[1, "Ferris Bueller's Day Off (1986)"]

[1, 'Four Weddings and a Funeral (1994)']

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[1, "There's Something About Mary (1998)"]

[1, 'Up (2009)']

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

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[1, 'Wizard of Oz, The (1939)']

[1, 'Star Trek: Generations (1994)']

[1, 'Jumanji (1995)']

[1, 'Firm, The (1993)']

[1, 'Breakfast Club, The (1985)']

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[1, 'Cliffhanger (1993)']

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[1, 'Stand by Me (1986)']

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[1, 'Crimson Tide (1995)']

[1, 'While You Were Sleeping (1995)']

[1, 'Back to the Future Part III (1990)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Star Wars: Episode II - Attack of the Clones (2002)']

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[1, 'Airplane! (1980)']

[1, 'Bourne Ultimatum, The (2007)']

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[1, 'Top Gun (1986)']

[1, 'Big (1988)']

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[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

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[1, 'Galaxy Quest (1999)']

[1, 'Cable Guy, The (1996)']

[1, 'Toy Story 3 (2010)']

[1, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[1, 'Notting Hill (1999)']

[1, 'Robin Hood: Men in Tights (1993)']

[1, 'Desperado (1995)']

[1, 'School of Rock (2003)']

[1, "Wayne's World (1992)"]

[1, 'Wedding Singer, The (1998)']

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Beverly Hills Cop III (1994)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'Congo (1995)']

[1, 'Mask of Zorro, The (1998)']

[1, 'Ransom (1996)']

[1, 'My Cousin Vinny (1992)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Alien³ (a.k.a. Alien 3) (1992)']

[1, 'Signs (2002)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[1, '10 Things I Hate About You (1999)']

[1, 'Dragonheart (1996)']

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[1, 'Inside Out (2015)']

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[1, 'Others, The (2001)']

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[1, 'Romancing the Stone (1984)']

[1, 'Last Action Hero (1993)']

[1, 'Much Ado About Nothing (1993)']

[1, 'Superbad (2007)']

[1, 'Species (1995)']

[1, 'Christmas Story, A (1983)']

[1, 'Hot Shots! Part Deux (1993)']

[1, 'Mr. & Mrs. Smith (2005)']

[1, 'Arachnophobia (1990)']

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[1, 'My Big Fat Greek Wedding (2002)']

[1, 'Pinocchio (1940)']

[1, 'Ring, The (2002)']

[1, 'Chocolat (2000)']

[1, 'Star Wars: Episode VII - The Force Awakens (2015)']

[1, "You've Got Mail (1998)"]

[1, 'Casper (1995)']

[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Spaceballs (1987)']

[1, 'Charlie and the Chocolate Factory (2005)']

[1, 'Legally Blonde (2001)']

[1, 'Phenomenon (1996)']

[1, 'Edge of Tomorrow (2014)']

[1, 'Miss Congeniality (2000)']

[1, 'Field of Dreams (1989)']

[1, 'Tomorrow Never Dies (1997)']

[1, 'Fantasia (1940)']

[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Johnny Mnemonic (1995)']

[1, 'Sabrina (1995)']

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[1, 'Three Musketeers, The (1993)']

[1, 'Crocodile Dundee (1986)']

[1, 'Dirty Dancing (1987)']

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[1, 'Thelma & Louise (1991)']

[1, 'Goonies, The (1985)']

[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, 'Sneakers (1992)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

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[1, 'Rush Hour (1998)']

[1, 'Father of the Bride Part II (1995)']

[1, 'Deep Impact (1998)']

[1, 'Thomas Crown Affair, The (1999)']

[1, 'Rob Roy (1995)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, 'Alien: Resurrection (1997)']

[1, 'Animal House (1978)']

[1, 'Beverly Hills Cop (1984)']

[1, 'Scary Movie (2000)']

[1, 'Gone in 60 Seconds (2000)']

[1, 'X-Files: Fight the Future, The (1998)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'French Kiss (1995)']

[1, 'Taken (2008)']

[1, "Pirates of the Caribbean: At World's End (2007)"]

[1, 'Blazing Saddles (1974)']

[1, 'First Knight (1995)']

[1, 'Executive Decision (1996)']

[1, 'Kung Fu Panda (2008)']

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[2, "Schindler's List (1993)"]

[2, 'Braveheart (1995)']

[2, 'Saving Private Ryan (1998)']

[2, 'Apocalypse Now (1979)']

[2, 'Full Metal Jacket (1987)']

[2, 'Platoon (1986)']

[2, 'Boot, Das (Boat, The) (1981)']

[2, 'Bridge on the River Kwai, The (1957)']

[2, 'Glory (1989)']

[2, 'Hotel Rwanda (2004)']

[2, 'Deer Hunter, The (1978)']

[2, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[3, 'Batman (1989)']

[3, 'Batman Begins (2005)']

[3, 'Crow, The (1994)']

[3, 'Batman Returns (1992)']

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[4, 'Usual Suspects, The (1995)']

[4, 'Godfather, The (1972)']

[4, 'Goodfellas (1990)']

[4, 'L.A. Confidential (1997)']

[4, 'Departed, The (2006)']

[4, 'Heat (1995)']

[4, 'Get Shorty (1995)']

[4, 'Casino (1995)']

[4, 'True Romance (1993)']

[4, 'Scarface (1983)']

[4, 'Jackie Brown (1997)']

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[5, 'X-Men (2000)']

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[5, 'Iron Man (2008)']

[5, 'Spider-Man 2 (2004)']

[5, 'X2: X-Men United (2003)']

[5, 'Avengers, The (2012)']

[5, 'Guardians of the Galaxy (2014)']

[5, 'Superman (1978)']

[5, 'Iron Man 2 (2010)']

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[6, 'Good Will Hunting (1997)']

[6, 'Beautiful Mind, A (2001)']

[6, 'Rain Man (1988)']

[6, 'Million Dollar Baby (2004)']

[6, 'Gran Torino (2008)']

[6, 'Sling Blade (1996)']

[6, 'Cool Hand Luke (1967)']

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[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[8, 'Shining, The (1980)']

[8, 'Psycho (1960)']

[8, 'Rear Window (1954)']

[8, 'Chinatown (1974)']

[8, 'North by Northwest (1959)']

[8, 'Vertigo (1958)']

[8, 'Maltese Falcon, The (1941)']

[8, 'Birds, The (1963)']

--------- NEW CLUSTER -----------

[9, 'Office Space (1999)']

[9, 'Shaun of the Dead (2004)']

[9, 'Hot Fuzz (2007)']

[9, 'Zombieland (2009)']

[9, 'Army of Darkness (1993)']

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[10, 'High Fidelity (2000)']

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[10, 'Royal Tenenbaums, The (2001)']

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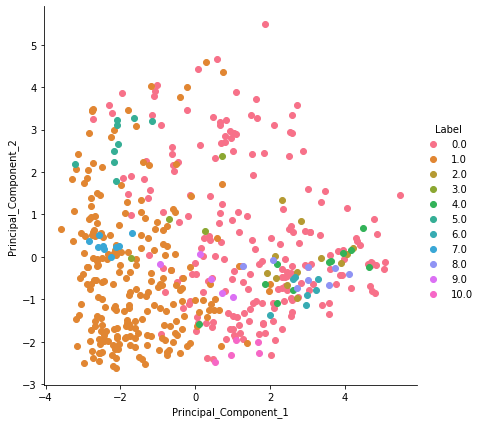
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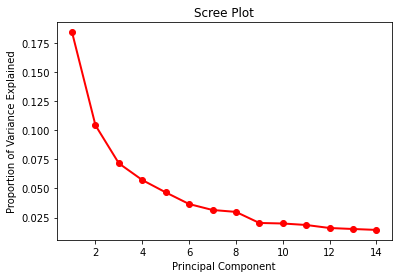
warnings.warn(msg, UserWarning)



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Davies-Bouldin Index: 2.09394740960505

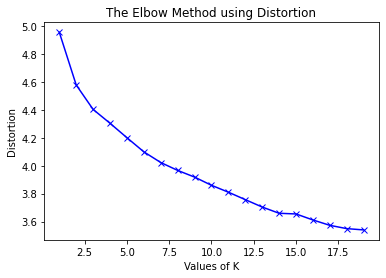
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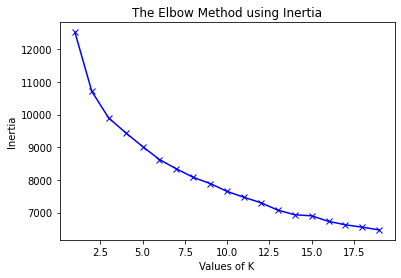


With Feature Reduction

(500, 1128) to (500, 170)

ELBOW GRAPH:





Running regular KMeans on range

Test 24

Test type: KMeans

Parameters: Num Clusters i = 6

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[1, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[1, 'Truman Show, The (1998)']

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[1, 'Jaws (1975)']

[1, 'Life Is Beautiful (La Vita è bella) (1997)']

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[1, 'Platoon (1986)']

[1, '12 Angry Men (1957)']

[1, 'Few Good Men, A (1992)']

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[1, 'Butch Cassidy and the Sundance Kid (1969)']

[1, 'English Patient, The (1996)']

[1, 'Gone with the Wind (1939)']

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[1, 'Black Hawk Down (2001)']

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[1, 'Seven Samurai (Shichinin no samurai) (1954)']

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[1, 'Princess Mononoke (Mononoke-hime) (1997)']

[1, 'Intouchables (2011)']

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[1, 'Bridge on the River Kwai, The (1957)']

[1, 'Blood Diamond (2006)']

[1, 'Good Morning, Vietnam (1987)']

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[1, 'Rob Roy (1995)']

[1, 'Cool Hand Luke (1967)']

[1, '(500) Days of Summer (2009)']

[1, 'Hotel Rwanda (2004)']

[1, 'Garden State (2004)']

[1, 'Crash (2004)']

[1, 'Deer Hunter, The (1978)']

[1, 'Great Escape, The (1963)']

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[2, 'Matrix, The (1999)']

[2, 'Star Wars: Episode IV - A New Hope (1977)']

[2, 'Jurassic Park (1993)']

[2, 'Terminator 2: Judgment Day (1991)']

[2, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[2, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[2, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[2, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[2, 'Lord of the Rings: The Two Towers, The (2002)']

[2, 'Lord of the Rings: The Return of the King, The (2003)']

[2, 'Back to the Future (1985)']

[2, 'Independence Day (a.k.a. ID4) (1996)']

[2, 'Dark Knight, The (2008)']

[2, 'Men in Black (a.k.a. MIB) (1997)']

[2, 'Inception (2010)']

[2, 'Terminator, The (1984)']

[2, 'Indiana Jones and the Last Crusade (1989)']

[2, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[2, 'Die Hard (1988)']

[2, 'Blade Runner (1982)']

[2, 'Alien (1979)']

[2, 'Fifth Element, The (1997)']

[2, 'X-Men (2000)']

[2, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[2, 'Star Wars: Episode I - The Phantom Menace (1999)']

[2, 'Aliens (1986)']

[2, 'Stargate (1994)']

[2, 'Batman Begins (2005)']

[2, 'Minority Report (2002)']

[2, 'Spider-Man (2002)']

[2, '2001: A Space Odyssey (1968)']

[2, 'WALL·E (2008)']

[2, 'V for Vendetta (2006)']

[2, 'Iron Man (2008)']

[2, 'Avatar (2009)']

[2, 'Matrix Reloaded, The (2003)']

[2, 'Interstellar (2014)']

[2, 'Total Recall (1990)']

[2, 'Gattaca (1997)']

[2, 'Contact (1997)']

[2, 'Star Wars: Episode II - Attack of the Clones (2002)']

[2, 'X2: X-Men United (2003)']

[2, 'Dark Knight Rises, The (2012)']

[2, 'Star Trek: First Contact (1996)']

[2, '300 (2007)']

[2, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[2, 'Matrix Revolutions, The (2003)']

[2, 'District 9 (2009)']

[2, 'Avengers, The (2012)']

[2, 'Abyss, The (1989)']

[2, 'I, Robot (2004)']

[2, 'Predator (1987)']

[2, 'Unbreakable (2000)']

[2, 'The Martian (2015)']

[2, 'Guardians of the Galaxy (2014)']

[2, 'Star Trek (2009)']

[2, 'Star Trek II: The Wrath of Khan (1982)']

[2, 'The Butterfly Effect (2004)']

[2, 'RoboCop (1987)']

[2, 'Close Encounters of the Third Kind (1977)']

[2, 'Superman (1978)']

[2, 'A.I. Artificial Intelligence (2001)']

[2, 'Signs (2002)']

[2, 'Mad Max: Fury Road (2015)']

[2, 'Planet of the Apes (1968)']

[2, 'Star Wars: Episode VII - The Force Awakens (2015)']

[2, 'Ex Machina (2015)']

[2, 'Edge of Tomorrow (2014)']

[2, 'Gravity (2013)']

[2, 'Dark City (1998)']

[2, 'Watchmen (2009)']

[2, 'Serenity (2005)']

[2, 'Highlander (1986)']

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[3, 'Monty Python and the Holy Grail (1975)']

[3, 'Groundhog Day (1993)']

[3, 'Ace Ventura: Pet Detective (1994)']

[3, 'Mask, The (1994)']

[3, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[3, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[3, "Ferris Bueller's Day Off (1986)"]

[3, "There's Something About Mary (1998)"]

[3, 'Austin Powers: The Spy Who Shagged Me (1999)']

[3, 'American Pie (1999)']

[3, 'Breakfast Club, The (1985)']

[3, 'Clerks (1994)']

[3, 'O Brother, Where Art Thou? (2000)']

[3, 'Austin Powers: International Man of Mystery (1997)']

[3, 'Office Space (1999)']

[3, "Monty Python's Life of Brian (1979)"]

[3, 'Get Shorty (1995)']

[3, 'Who Framed Roger Rabbit? (1988)']

[3, 'Ace Ventura: When Nature Calls (1995)']

[3, 'Beetlejuice (1988)']

[3, 'Birdcage, The (1996)']

[3, 'Airplane! (1980)']

[3, 'Blues Brothers, The (1980)']

[3, 'Meet the Parents (2000)']

[3, 'Fish Called Wanda, A (1988)']

[3, 'Shaun of the Dead (2004)']

[3, 'Blair Witch Project, The (1999)']

[3, 'Happy Gilmore (1996)']

[3, 'Nutty Professor, The (1996)']

[3, 'Liar Liar (1997)']

[3, 'Juno (2007)']

[3, 'Addams Family Values (1993)']

[3, 'Mars Attacks! (1996)']

[3, 'South Park: Bigger, Longer and Uncut (1999)']

[3, 'Dogma (1999)']

[3, 'High Fidelity (2000)']

[3, 'Scream (1996)']

[3, 'This Is Spinal Tap (1984)']

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[3, 'Crow, The (1994)']

[3, 'Royal Tenenbaums, The (2001)']

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[3, 'Ed Wood (1994)']

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[3, 'From Dusk Till Dawn (1996)']

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[3, 'Naked Gun 33 1/3: The Final Insult (1994)']

[3, 'Grosse Pointe Blank (1997)']

[3, 'Deadpool (2016)']

[3, 'My Cousin Vinny (1992)']

[3, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

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[3, 'Chasing Amy (1997)']

[3, 'Rocky Horror Picture Show, The (1975)']

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[3, 'Coneheads (1993)']

[3, 'Superbad (2007)']

[3, 'Christmas Story, A (1983)']

[3, 'Hot Shots! Part Deux (1993)']

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[3, 'Spaceballs (1987)']

[3, 'Army of Darkness (1993)']

[3, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[3, 'Gremlins (1984)']

[3, 'Some Like It Hot (1959)']

[3, 'Animal House (1978)']

[3, 'Scary Movie (2000)']

[3, 'So I Married an Axe Murderer (1993)']

[3, 'Crying Game, The (1992)']

[3, 'Blazing Saddles (1974)']

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[4, 'Aladdin (1992)']

[4, 'Lion King, The (1994)']

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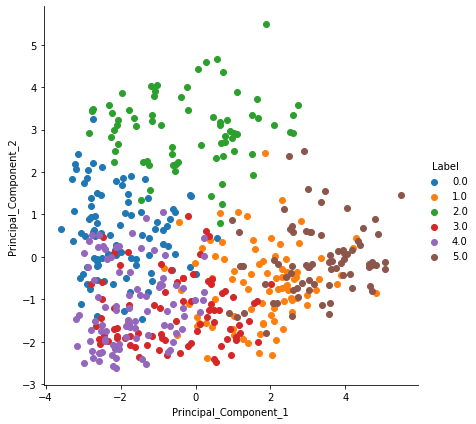
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09729260410036668

Davies-Bouldin Index: 2.417591005860882

Calinski-Harabasz Score: 44.540787522097375

Test 25

Test type: KMeans

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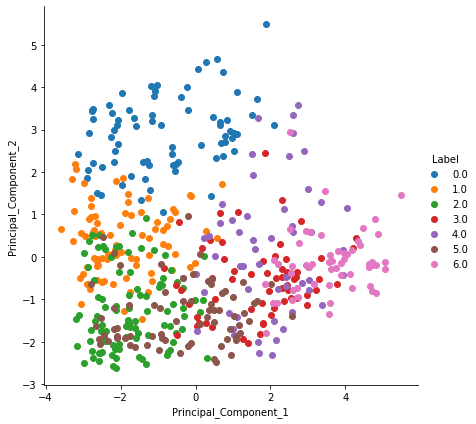
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09905557686532009

Davies-Bouldin Index: 2.4097086032713606

Calinski-Harabasz Score: 40.99256819154638

Test 26

Test type: KMeans

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[4, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

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[4, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[4, 'Lord of the Rings: The Two Towers, The (2002)']

[4, 'Lord of the Rings: The Return of the King, The (2003)']

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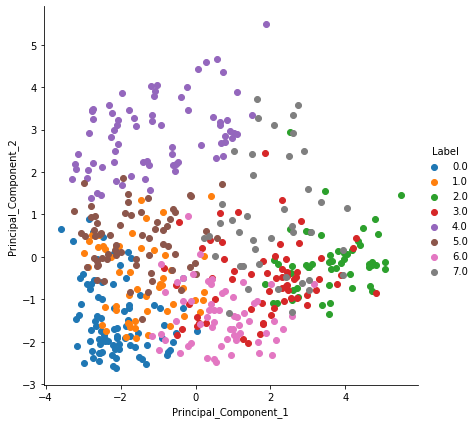
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09562920909161647

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Test 27

Test type: KMeans

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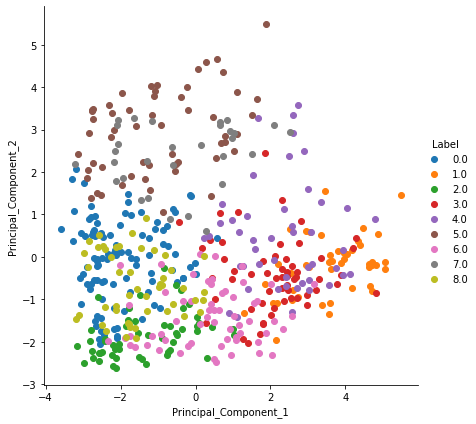
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warnings.warn(msg, UserWarning)



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[9, 'Willy Wonka & the Chocolate Factory (1971)']

[9, 'Toy Story 2 (1999)']

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[9, 'How to Train Your Dragon (2010)']

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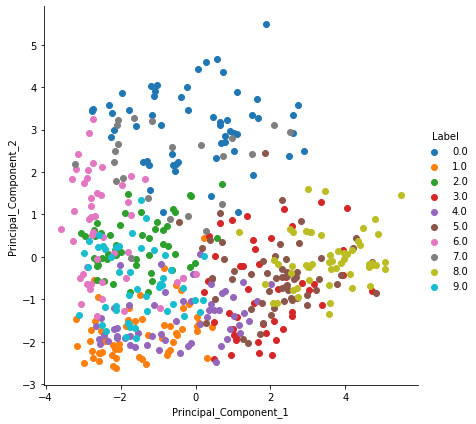
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warnings.warn(msg, UserWarning)



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Test 29

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[6, 'Dogma (1999)']

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[6, 'From Dusk Till Dawn (1996)']

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[6, 'Naked Gun 33 1/3: The Final Insult (1994)']

[6, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[6, 'Zombieland (2009)']

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[9, 'Terminator 2: Judgment Day (1991)']

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[9, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[9, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[9, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

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[9, 'Avatar (2009)']

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[9, 'Gattaca (1997)']

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[9, 'The Martian (2015)']

[9, 'Star Trek (2009)']

[9, 'Children of Men (2006)']

[9, 'Close Encounters of the Third Kind (1977)']

[9, 'A.I. Artificial Intelligence (2001)']

[9, 'Mad Max: Fury Road (2015)']

[9, 'Planet of the Apes (1968)']

[9, 'Ex Machina (2015)']

[9, 'Edge of Tomorrow (2014)']

[9, 'Gravity (2013)']

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[10, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[10, 'Star Trek: Generations (1994)']

[10, 'Indiana Jones and the Temple of Doom (1984)']

[10, 'Jumanji (1995)']

[10, 'Matrix Reloaded, The (2003)']

[10, 'Back to the Future Part II (1989)']

[10, 'Armageddon (1998)']

[10, 'Harry Potter and the Prisoner of Azkaban (2004)']

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[10, 'Back to the Future Part III (1990)']

[10, 'Star Wars: Episode II - Attack of the Clones (2002)']

[10, 'Star Trek: First Contact (1996)']

[10, 'Mummy, The (1999)']

[10, 'Harry Potter and the Goblet of Fire (2005)']

[10, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[10, 'Demolition Man (1993)']

[10, 'Matrix Revolutions, The (2003)']

[10, 'I, Robot (2004)']

[10, 'Starship Troopers (1997)']

[10, 'Honey, I Shrunk the Kids (1989)']

[10, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[10, 'Lost World: Jurassic Park, The (1997)']

[10, 'Star Trek II: The Wrath of Khan (1982)']

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[10, 'Galaxy Quest (1999)']

[10, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[10, 'Harry Potter and the Order of the Phoenix (2007)']

[10, 'I Am Legend (2007)']

[10, 'Harry Potter and the Half-Blood Prince (2009)']

[10, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[10, 'Congo (1995)']

[10, 'Alien³ (a.k.a. Alien 3) (1992)']

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[10, 'Dragonheart (1996)']

[10, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[10, 'Species (1995)']

[10, 'Star Wars: Episode VII - The Force Awakens (2015)']

[10, 'Star Trek IV: The Voyage Home (1986)']

[10, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[10, 'Johnny Mnemonic (1995)']

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[10, 'Wild Wild West (1999)']

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[10, 'Terminator 3: Rise of the Machines (2003)']

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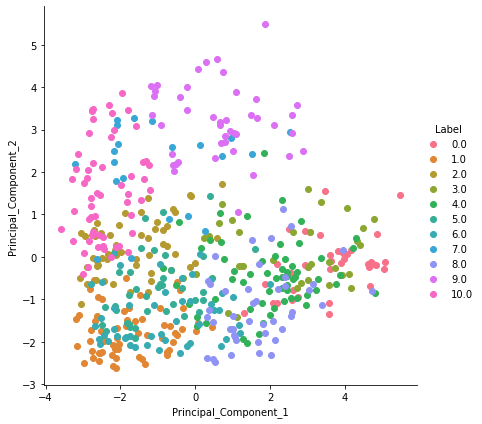
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warnings.warn(msg, UserWarning)



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[3, 'Disclosure (1994)']

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[4, "There's Something About Mary (1998)"]

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[4, 'American Pie (1999)']

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[4, 'Office Space (1999)']

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[4, 'Ace Ventura: When Nature Calls (1995)']

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[4, "Wayne's World (1992)"]

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[5, 'Wallace & Gromit: The Wrong Trousers (1993)']

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[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'How to Train Your Dragon (2010)']

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[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Pinocchio (1940)']

[5, 'Casper (1995)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, 'Charlie and the Chocolate Factory (2005)']

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[5, 'Wallace & Gromit: A Close Shave (1995)']

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[5, 'Gremlins (1984)']

[5, 'Kung Fu Panda (2008)']

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[6, 'Seven (a.k.a. Se7en) (1995)']

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[6, 'Eternal Sunshine of the Spotless Mind (2004)']

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[6, 'Clockwork Orange, A (1971)']

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[6, 'Full Metal Jacket (1987)']

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[7, 'Jaws (1975)']

[7, 'Pianist, The (2002)']

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[7, 'Lawrence of Arabia (1962)']

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[8, 'Enemy of the State (1998)']

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[8, 'Gone in 60 Seconds (2000)']

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[8, 'Executive Decision (1996)']

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[9, 'Being John Malkovich (1999)']

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[9, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[9, 'Clerks (1994)']

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[9, '(500) Days of Summer (2009)']

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[10, 'Matrix, The (1999)']

[10, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[10, 'Inception (2010)']

[10, 'Terminator, The (1984)']

[10, 'Blade Runner (1982)']

[10, 'Alien (1979)']

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[10, 'Minority Report (2002)']

[10, '2001: A Space Odyssey (1968)']

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[10, 'Avatar (2009)']

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[10, 'Gattaca (1997)']

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[10, 'The Martian (2015)']

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[10, 'The Butterfly Effect (2004)']

[10, 'Brazil (1985)']

[10, 'Children of Men (2006)']

[10, 'Close Encounters of the Third Kind (1977)']

[10, 'A.I. Artificial Intelligence (2001)']

[10, 'Mad Max: Fury Road (2015)']

[10, 'Planet of the Apes (1968)']

[10, 'Ex Machina (2015)']

[10, 'Edge of Tomorrow (2014)']

[10, 'Gravity (2013)']

[10, 'Dark City (1998)']

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[11, 'Star Wars: Episode IV - A New Hope (1977)']

[11, 'Jurassic Park (1993)']

[11, 'Terminator 2: Judgment Day (1991)']

[11, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[11, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[11, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[11, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[11, 'Lord of the Rings: The Two Towers, The (2002)']

[11, 'Lord of the Rings: The Return of the King, The (2003)']

[11, 'Back to the Future (1985)']

[11, 'Batman (1989)']

[11, 'Dark Knight, The (2008)']

[11, 'Indiana Jones and the Last Crusade (1989)']

[11, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[11, 'Die Hard (1988)']

[11, 'X-Men (2000)']

[11, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[11, 'Batman Begins (2005)']

[11, 'Spider-Man (2002)']

[11, 'Iron Man (2008)']

[11, 'Indiana Jones and the Temple of Doom (1984)']

[11, 'Spider-Man 2 (2004)']

[11, 'X2: X-Men United (2003)']

[11, 'Dark Knight Rises, The (2012)']

[11, '300 (2007)']

[11, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[11, 'Avengers, The (2012)']

[11, 'Guardians of the Galaxy (2014)']

[11, 'Crow, The (1994)']

[11, 'Star Trek (2009)']

[11, 'Superman (1978)']

[11, 'Deadpool (2016)']

[11, 'Blade (1998)']

[11, 'Star Wars: Episode VII - The Force Awakens (2015)']

[11, 'Watchmen (2009)']

[11, 'Serenity (2005)']

[11, 'Iron Man 2 (2010)']

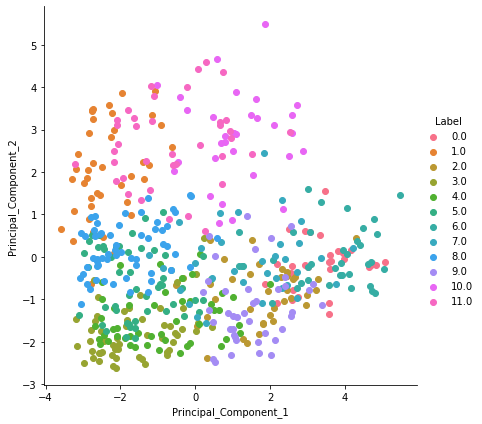
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.10191656197497515

Davies-Bouldin Index: 2.2911420872888555

Calinski-Harabasz Score: 31.149522046700138

Running regular GMM on range

Test 31

Test type: GMM

Parameters: Num Components i = 6

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[1, 'Finding Nemo (2003)']

[1, 'E.T. the Extra-Terrestrial (1982)']

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[1, 'Pretty Woman (1990)']

[1, 'Mrs. Doubtfire (1993)']

[1, 'Babe (1995)']

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[1, 'When Harry Met Sally... (1989)']

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[1, 'While You Were Sleeping (1995)']

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[1, 'Sense and Sensibility (1995)']

[1, 'Ratatouille (2007)']

[1, 'Harry Potter and the Goblet of Fire (2005)']

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[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Dave (1993)']

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[1, 'Grease (1978)']

[1, 'Honey, I Shrunk the Kids (1989)']

[1, 'Santa Clause, The (1994)']

[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

[1, 'Sound of Music, The (1965)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

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[1, 'Toy Story 3 (2010)']

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[1, 'Moulin Rouge (2001)']

[1, 'Harry Potter and the Half-Blood Prince (2009)']

[1, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[1, 'Wedding Singer, The (1998)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'How to Train Your Dragon (2010)']

[1, '10 Things I Hate About You (1999)']

[1, 'Dragonheart (1996)']

[1, 'Love Actually (2003)']

[1, 'Inside Out (2015)']

[1, 'Pocahontas (1995)']

[1, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

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[1, 'My Big Fat Greek Wedding (2002)']

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[1, 'Chocolat (2000)']

[1, "You've Got Mail (1998)"]

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[1, 'Charlie and the Chocolate Factory (2005)']

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[2, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

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[2, 'Beautiful Mind, A (2001)']

[2, 'Green Mile, The (1999)']

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[2, 'Life Is Beautiful (La Vita è bella) (1997)']

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[2, 'Almost Famous (2000)']

[2, 'Dead Man Walking (1995)']

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[2, '12 Angry Men (1957)']

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[2, 'To Kill a Mockingbird (1962)']

[2, 'Legends of the Fall (1994)']

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[2, 'Gone with the Wind (1939)']

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[2, 'Million Dollar Baby (2004)']

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[2, 'Pleasantville (1998)']

[2, 'Boot, Das (Boat, The) (1981)']

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[2, 'Seven Samurai (Shichinin no samurai) (1954)']

[2, 'Lawrence of Arabia (1962)']

[2, 'Princess Mononoke (Mononoke-hime) (1997)']

[2, 'Intouchables (2011)']

[2, 'Sling Blade (1996)']

[2, 'Bridge on the River Kwai, The (1957)']

[2, 'Blood Diamond (2006)']

[2, 'Good Morning, Vietnam (1987)']

[2, 'Last of the Mohicans, The (1992)']

[2, 'Three Kings (1999)']

[2, 'Glory (1989)']

[2, 'Rob Roy (1995)']

[2, 'Cool Hand Luke (1967)']

[2, '(500) Days of Summer (2009)']

[2, 'Hotel Rwanda (2004)']

[2, 'Garden State (2004)']

[2, 'Crash (2004)']

[2, 'Deer Hunter, The (1978)']

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[3, 'Pulp Fiction (1994)']

[3, 'Silence of the Lambs, The (1991)']

[3, 'Fight Club (1999)']

[3, 'Usual Suspects, The (1995)']

[3, 'American Beauty (1999)']

[3, 'Godfather, The (1972)']

[3, 'Seven (a.k.a. Se7en) (1995)']

[3, 'Fargo (1996)']

[3, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[3, 'Sixth Sense, The (1999)']

[3, 'Dark Knight, The (2008)']

[3, 'Memento (2000)']

[3, 'Reservoir Dogs (1992)']

[3, 'Godfather: Part II, The (1974)']

[3, 'Kill Bill: Vol. 1 (2003)']

[3, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[3, 'Eternal Sunshine of the Spotless Mind (2004)']

[3, 'Goodfellas (1990)']

[3, 'American History X (1998)']

[3, 'Being John Malkovich (1999)']

[3, 'Shining, The (1980)']

[3, 'Clockwork Orange, A (1971)']

[3, 'Taxi Driver (1976)']

[3, 'Trainspotting (1996)']

[3, 'Kill Bill: Vol. 2 (2004)']

[3, 'Big Lebowski, The (1998)']

[3, 'L.A. Confidential (1997)']

[3, 'Donnie Darko (2001)']

[3, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[3, 'Apocalypse Now (1979)']

[3, 'Full Metal Jacket (1987)']

[3, 'Departed, The (2006)']

[3, 'Snatch (2000)']

[3, 'Heat (1995)']

[3, 'Natural Born Killers (1994)']

[3, 'Inglourious Basterds (2009)']

[3, 'Prestige, The (2006)']

[3, 'Sin City (2005)']

[3, 'Psycho (1960)']

[3, 'Requiem for a Dream (2000)']

[3, 'Django Unchained (2012)']

[3, 'Rear Window (1954)']

[3, 'City of God (Cidade de Deus) (2002)']

[3, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[3, 'Lock, Stock & Two Smoking Barrels (1998)']

[3, 'Run Lola Run (Lola rennt) (1998)']

[3, 'Shutter Island (2010)']

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[3, 'No Country for Old Men (2007)']

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[3, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

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[3, 'Talented Mr. Ripley, The (1999)']

[3, 'Black Swan (2010)']

[3, 'Others, The (2001)']

[3, 'Grand Budapest Hotel, The (2014)']

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[3, 'Jackie Brown (1997)']

[3, 'Maltese Falcon, The (1941)']

[3, 'Old Boy (2003)']

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[3, 'Birds, The (1963)']

[3, 'Mystic River (2003)']

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[4, 'Jurassic Park (1993)']

[4, 'Terminator 2: Judgment Day (1991)']

[4, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[4, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[4, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[4, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[4, 'Lord of the Rings: The Two Towers, The (2002)']

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[4, 'Back to the Future (1985)']

[4, 'Independence Day (a.k.a. ID4) (1996)']

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[4, 'Dark Knight Rises, The (2012)']

[4, 'Star Trek: First Contact (1996)']

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[4, 'Guardians of the Galaxy (2014)']

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[4, 'Planet of the Apes (1968)']

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[4, 'Star Trek IV: The Voyage Home (1986)']

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[4, 'Gravity (2013)']

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[4, 'Johnny Mnemonic (1995)']

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[4, 'Deep Impact (1998)']

[4, 'Terminator 3: Rise of the Machines (2003)']

[4, 'Alien: Resurrection (1997)']

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[5, 'Monty Python and the Holy Grail (1975)']

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[5, 'Ace Ventura: Pet Detective (1994)']

[5, 'Mask, The (1994)']

[5, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[5, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[5, "Ferris Bueller's Day Off (1986)"]

[5, "There's Something About Mary (1998)"]

[5, 'Austin Powers: The Spy Who Shagged Me (1999)']

[5, 'American Pie (1999)']

[5, 'Breakfast Club, The (1985)']

[5, 'Clerks (1994)']

[5, 'O Brother, Where Art Thou? (2000)']

[5, 'Austin Powers: International Man of Mystery (1997)']

[5, 'Office Space (1999)']

[5, "Monty Python's Life of Brian (1979)"]

[5, 'Get Shorty (1995)']

[5, 'Ace Ventura: When Nature Calls (1995)']

[5, 'Beetlejuice (1988)']

[5, 'Birdcage, The (1996)']

[5, 'Airplane! (1980)']

[5, 'Blues Brothers, The (1980)']

[5, 'Meet the Parents (2000)']

[5, 'Fish Called Wanda, A (1988)']

[5, 'Shaun of the Dead (2004)']

[5, 'Blair Witch Project, The (1999)']

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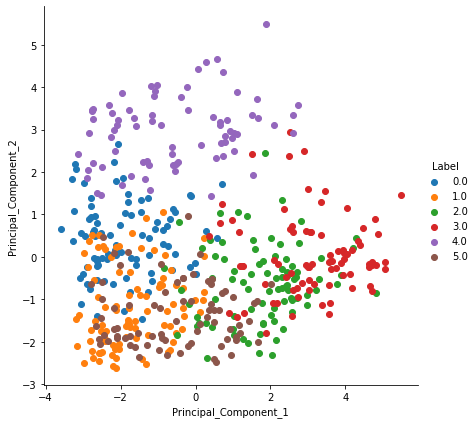
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09680463785839301

Davies-Bouldin Index: 2.426458478497941

Calinski-Harabasz Score: 44.581356411734575

Test 32

Test type: GMM

Parameters: Num Components i = 7

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[2, 'Old Boy (2003)']

[2, 'Watchmen (2009)']

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[3, 'Jurassic Park (1993)']

[3, 'Terminator 2: Judgment Day (1991)']

[3, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[3, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[3, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[3, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[3, 'Lord of the Rings: The Two Towers, The (2002)']

[3, 'Lord of the Rings: The Return of the King, The (2003)']

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[3, 'Star Trek IV: The Voyage Home (1986)']

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[6, 'Firm, The (1993)']

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[6, 'Crimson Tide (1995)']

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[6, 'Ace Ventura: When Nature Calls (1995)']

[6, 'Broken Arrow (1996)']

[6, 'Bourne Ultimatum, The (2007)']

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[6, 'Mission: Impossible II (2000)']

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[6, 'Addams Family Values (1993)']

[6, 'Mars Attacks! (1996)']

[6, 'Scream (1996)']

[6, 'Die Hard 2 (1990)']

[6, 'Maverick (1994)']

[6, 'Honey, I Shrunk the Kids (1989)']

[6, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

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[6, 'Enemy of the State (1998)']

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[6, 'Bruce Almighty (2003)']

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[6, "The Devil's Advocate (1997)"]

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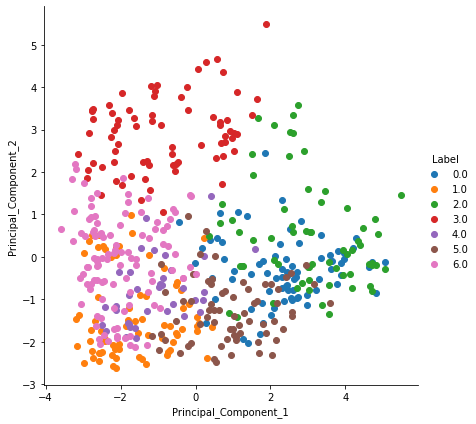
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.09322737077291109

Davies-Bouldin Index: 2.467720757797769

Calinski-Harabasz Score: 39.789986257857095

Test 33

Test type: GMM

Parameters: Num Components i = 8

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[1, 'Monty Python and the Holy Grail (1975)']

[1, 'Ace Ventura: Pet Detective (1994)']

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[1, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[1, "Ferris Bueller's Day Off (1986)"]

[1, "There's Something About Mary (1998)"]

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

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[1, 'Office Space (1999)']

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[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Beetlejuice (1988)']

[1, 'Birdcage, The (1996)']

[1, 'Airplane! (1980)']

[1, 'Blues Brothers, The (1980)']

[1, 'Meet the Parents (2000)']

[1, 'Fish Called Wanda, A (1988)']

[1, 'Shaun of the Dead (2004)']

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[1, 'South Park: Bigger, Longer and Uncut (1999)']

[1, 'Dogma (1999)']

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[1, 'Bruce Almighty (2003)']

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[1, 'Robin Hood: Men in Tights (1993)']

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[1, "Wayne's World (1992)"]

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Grosse Pointe Blank (1997)']

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[1, 'So I Married an Axe Murderer (1993)']

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[2, 'Lion King, The (1994)']

[2, 'Shrek (2001)']

[2, 'Princess Bride, The (1987)']

[2, 'Beauty and the Beast (1991)']

[2, 'Finding Nemo (2003)']

[2, 'E.T. the Extra-Terrestrial (1982)']

[2, 'Monsters, Inc. (2001)']

[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

[2, 'Babe (1995)']

[2, 'Home Alone (1990)']

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[2, 'Sleepless in Seattle (1993)']

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[2, 'Harry Potter and the Prisoner of Azkaban (2004)']

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[2, 'Grease (1978)']

[2, 'Honey, I Shrunk the Kids (1989)']

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[2, 'School of Rock (2003)']

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[2, 'How to Train Your Dragon (2010)']

[2, '10 Things I Hate About You (1999)']

[2, 'Dragonheart (1996)']

[2, 'Love Actually (2003)']

[2, 'Inside Out (2015)']

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[2, "You've Got Mail (1998)"]

[2, 'Casper (1995)']

[2, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[2, 'Legally Blonde (2001)']

[2, 'Phenomenon (1996)']

[2, 'Miss Congeniality (2000)']

[2, 'Field of Dreams (1989)']

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[2, 'Wallace & Gromit: A Close Shave (1995)']

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[3, 'Jurassic Park (1993)']

[3, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[3, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[3, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[3, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[3, 'Lord of the Rings: The Two Towers, The (2002)']

[3, 'Lord of the Rings: The Return of the King, The (2003)']

[3, 'Back to the Future (1985)']

[3, 'Batman (1989)']

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[3, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

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[3, 'Batman Begins (2005)']

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[3, 'Spider-Man 2 (2004)']

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[3, '300 (2007)']

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[3, 'Avengers, The (2012)']

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[3, 'Watchmen (2009)']

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[4, 'Big Lebowski, The (1998)']

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[4, 'Apocalypse Now (1979)']

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[4, 'Rear Window (1954)']

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[4, 'Lock, Stock & Two Smoking Barrels (1998)']

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[5, 'Seven Samurai (Shichinin no samurai) (1954)']

[5, 'Lawrence of Arabia (1962)']

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[6, 'Eternal Sunshine of the Spotless Mind (2004)']

[6, 'Being John Malkovich (1999)']

[6, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[6, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[6, 'Breakfast Club, The (1985)']

[6, 'Edward Scissorhands (1990)']

[6, 'O Brother, Where Art Thou? (2000)']

[6, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[6, 'Nightmare Before Christmas, The (1993)']

[6, 'Lost in Translation (2003)']

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[6, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

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[6, 'Juno (2007)']

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[6, 'Eyes Wide Shut (1999)']

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[6, 'Bowling for Columbine (2002)']

[6, 'Pleasantville (1998)']

[6, 'Chasing Amy (1997)']

[6, 'Others, The (2001)']

[6, 'Princess Mononoke (Mononoke-hime) (1997)']

[6, 'Grand Budapest Hotel, The (2014)']

[6, 'Christmas Story, A (1983)']

[6, 'Magnolia (1999)']

[6, 'Ring, The (2002)']

[6, 'Mulholland Drive (2001)']

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[6, 'Birds, The (1963)']

[6, 'Some Like It Hot (1959)']

[6, '(500) Days of Summer (2009)']

[6, 'Garden State (2004)']

[6, 'Crying Game, The (1992)']

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[7, 'Matrix, The (1999)']

[7, 'Terminator 2: Judgment Day (1991)']

[7, 'Independence Day (a.k.a. ID4) (1996)']

[7, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[7, 'Inception (2010)']

[7, 'Terminator, The (1984)']

[7, 'Blade Runner (1982)']

[7, 'Alien (1979)']

[7, 'Fifth Element, The (1997)']

[7, 'Aliens (1986)']

[7, 'Stargate (1994)']

[7, 'Minority Report (2002)']

[7, '2001: A Space Odyssey (1968)']

[7, 'Waterworld (1995)']

[7, 'WALL·E (2008)']

[7, 'Avatar (2009)']

[7, 'Matrix Reloaded, The (2003)']

[7, 'Back to the Future Part II (1989)']

[7, 'Armageddon (1998)']

[7, 'Interstellar (2014)']

[7, 'Total Recall (1990)']

[7, 'Gattaca (1997)']

[7, 'Contact (1997)']

[7, 'Star Trek: First Contact (1996)']

[7, 'Matrix Revolutions, The (2003)']

[7, 'District 9 (2009)']

[7, 'Abyss, The (1989)']

[7, 'I, Robot (2004)']

[7, 'Starship Troopers (1997)']

[7, 'Predator (1987)']

[7, 'The Martian (2015)']

[7, 'Star Trek II: The Wrath of Khan (1982)']

[7, 'The Butterfly Effect (2004)']

[7, 'RoboCop (1987)']

[7, 'Children of Men (2006)']

[7, 'Close Encounters of the Third Kind (1977)']

[7, 'Judge Dredd (1995)']

[7, 'I Am Legend (2007)']

[7, 'A.I. Artificial Intelligence (2001)']

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[7, 'Star Trek IV: The Voyage Home (1986)']

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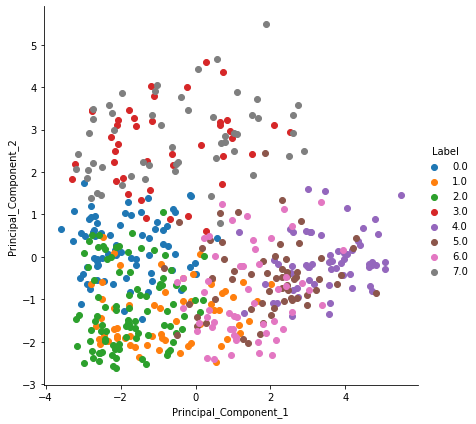
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.10118257831676479

Davies-Bouldin Index: 2.4291748799271558

Calinski-Harabasz Score: 38.00415659773167

Test 34

Test type: GMM

Parameters: Num Components i = 9

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[3, 'Scarface (1983)']

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[5, 'Saving Private Ryan (1998)']

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[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

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[7, 'Who Framed Roger Rabbit? (1988)']

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[7, 'Dave (1993)']

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[7, 'Grease (1978)']

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[7, 'Bruce Almighty (2003)']

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[7, 'Mary Poppins (1964)']

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[7, 'Harry Potter and the Order of the Phoenix (2007)']

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[7, 'Moulin Rouge (2001)']

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[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'Wedding Singer, The (1998)']

[7, 'Truth About Cats & Dogs, The (1996)']

[7, 'My Cousin Vinny (1992)']

[7, 'How to Train Your Dragon (2010)']

[7, '10 Things I Hate About You (1999)']

[7, 'Dragonheart (1996)']

[7, 'Love Actually (2003)']

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[7, 'My Big Fat Greek Wedding (2002)']

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[7, "You've Got Mail (1998)"]

[7, 'Casper (1995)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Charlie and the Chocolate Factory (2005)']

[7, 'Legally Blonde (2001)']

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[7, 'Wallace & Gromit: A Close Shave (1995)']

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[7, 'Dirty Dancing (1987)']

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[7, 'Gremlins (1984)']

[7, "City Slickers II: The Legend of Curly's Gold (1994)"]

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[8, 'Matrix, The (1999)']

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[8, 'Jurassic Park (1993)']

[8, 'Terminator 2: Judgment Day (1991)']

[8, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Back to the Future (1985)']

[8, 'Independence Day (a.k.a. ID4) (1996)']

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[8, 'Edge of Tomorrow (2014)']

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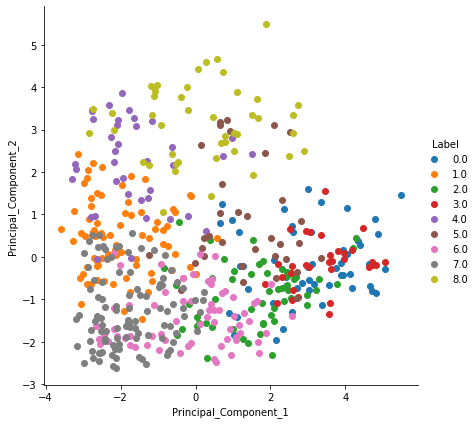
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Silhouette Coefficient: 0.0977094711710556

Davies-Bouldin Index: 2.4460505986419907

Calinski-Harabasz Score: 34.004994930116396

Test 35

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[9, 'Star Wars: Episode I - The Phantom Menace (1999)']

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[9, 'Waterworld (1995)']

[9, 'Star Trek: Generations (1994)']

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[9, 'Demolition Man (1993)']

[9, 'Matrix Revolutions, The (2003)']

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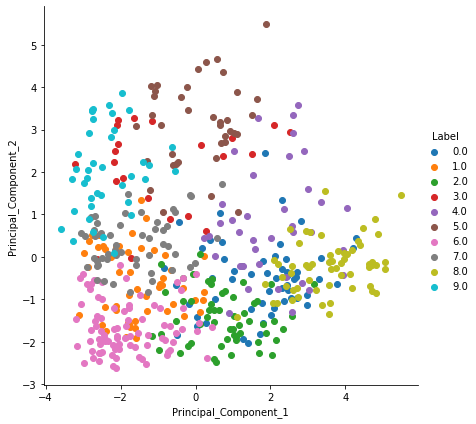
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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.10703728666173108

Davies-Bouldin Index: 2.215854731527716

Calinski-Harabasz Score: 34.851245387459514

Test 36

Test type: GMM

Parameters: Num Components i = 11

--------- NEW CLUSTER -----------

[0, 'Fugitive, The (1993)']

[0, 'True Lies (1994)']

[0, 'Speed (1994)']

[0, 'Mission: Impossible (1996)']

[0, 'Die Hard (1988)']

[0, 'Die Hard: With a Vengeance (1995)']

[0, 'Rock, The (1996)']

[0, "Ocean's Eleven (2001)"]

[0, 'Bourne Identity, The (2002)']

[0, 'GoldenEye (1995)']

[0, 'Clear and Present Danger (1994)']

[0, 'Outbreak (1995)']

[0, 'Firm, The (1993)']

[0, 'Cliffhanger (1993)']

[0, 'Net, The (1995)']

[0, 'Crimson Tide (1995)']

[0, 'Hunt for Red October, The (1990)']

[0, 'Broken Arrow (1996)']

[0, 'Bourne Ultimatum, The (2007)']

[0, 'Casino Royale (2006)']

[0, 'Face/Off (1997)']

[0, 'Bourne Supremacy, The (2004)']

[0, 'Lethal Weapon (1987)']

[0, 'Mission: Impossible II (2000)']

[0, 'Demolition Man (1993)']

[0, 'In the Line of Fire (1993)']

[0, 'Die Hard 2 (1990)']

[0, 'Enemy of the State (1998)']

[0, 'Eraser (1996)']

[0, 'Patriot, The (2000)']

[0, 'Con Air (1997)']

[0, 'Air Force One (1997)']

[0, 'Client, The (1994)']

[0, 'Tombstone (1993)']

[0, 'Desperado (1995)']

[0, 'Mask of Zorro, The (1998)']

[0, 'Ransom (1996)']

[0, 'Italian Job, The (2003)']

[0, 'Lethal Weapon 2 (1989)']

[0, 'Romancing the Stone (1984)']

[0, 'Mr. & Mrs. Smith (2005)']

[0, 'Bad Boys (1995)']

[0, 'Tomorrow Never Dies (1997)']

[0, 'Goldfinger (1964)']

[0, 'Sneakers (1992)']

[0, 'Rush Hour (1998)']

[0, 'Thomas Crown Affair, The (1999)']

[0, 'Disclosure (1994)']

[0, 'Beverly Hills Cop (1984)']

[0, 'Gone in 60 Seconds (2000)']

[0, 'Taken (2008)']

[0, 'Executive Decision (1996)']

--------- NEW CLUSTER -----------

[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Mask, The (1994)']

[1, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[1, 'Home Alone (1990)']

[1, "There's Something About Mary (1998)"]

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

[1, 'Austin Powers: International Man of Mystery (1997)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Beetlejuice (1988)']

[1, 'Birdcage, The (1996)']

[1, 'Airplane! (1980)']

[1, 'Blues Brothers, The (1980)']

[1, 'Meet the Parents (2000)']

[1, 'Blair Witch Project, The (1999)']

[1, 'Happy Gilmore (1996)']

[1, 'Nutty Professor, The (1996)']

[1, 'Liar Liar (1997)']

[1, "Charlie's Angels (2000)"]

[1, 'Addams Family Values (1993)']

[1, 'Mars Attacks! (1996)']

[1, 'South Park: Bigger, Longer and Uncut (1999)']

[1, 'Dogma (1999)']

[1, 'Scream (1996)']

[1, 'Maverick (1994)']

[1, 'Hangover, The (2009)']

[1, 'Bruce Almighty (2003)']

[1, '40-Year-Old Virgin, The (2005)']

[1, 'Galaxy Quest (1999)']

[1, 'Cable Guy, The (1996)']

[1, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[1, 'Robin Hood: Men in Tights (1993)']

[1, 'School of Rock (2003)']

[1, 'From Dusk Till Dawn (1996)']

[1, "Wayne's World (1992)"]

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Beverly Hills Cop III (1994)']

[1, 'Congo (1995)']

[1, 'My Cousin Vinny (1992)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[1, "The Devil's Advocate (1997)"]

[1, 'Rocky Horror Picture Show, The (1975)']

[1, 'Coneheads (1993)']

[1, 'Last Action Hero (1993)']

[1, 'Superbad (2007)']

[1, 'Hot Shots! Part Deux (1993)']

[1, 'Arachnophobia (1990)']

[1, 'Ring, The (2002)']

[1, 'Spaceballs (1987)']

[1, 'Army of Darkness (1993)']

[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Wild Wild West (1999)']

[1, 'Scary Movie (2000)']

[1, 'So I Married an Axe Murderer (1993)']

--------- NEW CLUSTER -----------

[2, 'Batman (1989)']

[2, 'Dark Knight, The (2008)']

[2, 'X-Men (2000)']

[2, 'Batman Forever (1995)']

[2, 'Batman Begins (2005)']

[2, 'Spider-Man (2002)']

[2, 'V for Vendetta (2006)']

[2, 'Iron Man (2008)']

[2, 'Spider-Man 2 (2004)']

[2, 'X2: X-Men United (2003)']

[2, 'Dark Knight Rises, The (2012)']

[2, '300 (2007)']

[2, 'Avengers, The (2012)']

[2, 'Unbreakable (2000)']

[2, 'Guardians of the Galaxy (2014)']

[2, 'Crow, The (1994)']

[2, 'Superman (1978)']

[2, 'Sherlock Holmes (2009)']

[2, 'Deadpool (2016)']

[2, 'Batman Returns (1992)']

[2, 'Blade (1998)']

[2, 'Watchmen (2009)']

[2, 'Iron Man 2 (2010)']

--------- NEW CLUSTER -----------

[3, 'Princess Bride, The (1987)']

[3, 'Monty Python and the Holy Grail (1975)']

[3, 'Groundhog Day (1993)']

[3, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[3, 'Being John Malkovich (1999)']

[3, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[3, 'Big Lebowski, The (1998)']

[3, "Ferris Bueller's Day Off (1986)"]

[3, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[3, 'Jaws (1975)']

[3, 'Breakfast Club, The (1985)']

[3, 'Clerks (1994)']

[3, 'Edward Scissorhands (1990)']

[3, 'O Brother, Where Art Thou? (2000)']

[3, 'Office Space (1999)']

[3, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[3, "Monty Python's Life of Brian (1979)"]

[3, 'Get Shorty (1995)']

[3, 'Nightmare Before Christmas, The (1993)']

[3, 'Lost in Translation (2003)']

[3, 'Leaving Las Vegas (1995)']

[3, 'Almost Famous (2000)']

[3, 'Fish Called Wanda, A (1988)']

[3, 'Shaun of the Dead (2004)']

[3, 'Citizen Kane (1941)']

[3, 'Little Miss Sunshine (2006)']

[3, 'Run Lola Run (Lola rennt) (1998)']

[3, 'Graduate, The (1967)']

[3, 'Juno (2007)']

[3, 'Big Fish (2003)']

[3, 'High Fidelity (2000)']

[3, 'This Is Spinal Tap (1984)']

[3, '28 Days Later (2002)']

[3, 'Annie Hall (1977)']

[3, 'Eyes Wide Shut (1999)']

[3, 'Piano, The (1993)']

[3, 'Royal Tenenbaums, The (2001)']

[3, 'Young Frankenstein (1974)']

[3, 'Ed Wood (1994)']

[3, 'Raising Arizona (1987)']

[3, 'Butch Cassidy and the Sundance Kid (1969)']

[3, 'Exorcist, The (1973)']

[3, 'Sleepy Hollow (1999)']

[3, 'Rushmore (1998)']

[3, 'Hot Fuzz (2007)']

[3, 'Grosse Pointe Blank (1997)']

[3, 'Boogie Nights (1997)']

[3, 'Talented Mr. Ripley, The (1999)']

[3, 'Zombieland (2009)']

[3, 'Bowling for Columbine (2002)']

[3, 'Pleasantville (1998)']

[3, 'Chasing Amy (1997)']

[3, 'Election (1999)']

[3, 'Others, The (2001)']

[3, 'Princess Mononoke (Mononoke-hime) (1997)']

[3, 'Grand Budapest Hotel, The (2014)']

[3, 'Christmas Story, A (1983)']

[3, 'Three Kings (1999)']

[3, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[3, 'Birds, The (1963)']

[3, 'Some Like It Hot (1959)']

[3, 'Animal House (1978)']

[3, '(500) Days of Summer (2009)']

[3, 'Garden State (2004)']

[3, 'Blazing Saddles (1974)']

--------- NEW CLUSTER -----------

[4, 'Toy Story (1995)']

[4, 'Aladdin (1992)']

[4, 'Lion King, The (1994)']

[4, 'Shrek (2001)']

[4, 'Beauty and the Beast (1991)']

[4, 'Finding Nemo (2003)']

[4, 'E.T. the Extra-Terrestrial (1982)']

[4, 'Monsters, Inc. (2001)']

[4, 'Babe (1995)']

[4, 'Incredibles, The (2004)']

[4, 'WALL·E (2008)']

[4, 'Toy Story 2 (1999)']

[4, 'Up (2009)']

[4, 'Wizard of Oz, The (1939)']

[4, "Bug's Life, A (1998)"]

[4, 'Who Framed Roger Rabbit? (1988)']

[4, 'Shrek 2 (2004)']

[4, 'Ratatouille (2007)']

[4, 'Chicken Run (2000)']

[4, 'Ice Age (2002)']

[4, 'Snow White and the Seven Dwarfs (1937)']

[4, 'Wallace & Gromit: The Wrong Trousers (1993)']

[4, 'Little Mermaid, The (1989)']

[4, 'Mary Poppins (1964)']

[4, 'Toy Story 3 (2010)']

[4, 'How to Train Your Dragon (2010)']

[4, 'Inside Out (2015)']

[4, 'Pocahontas (1995)']

[4, 'Pinocchio (1940)']

[4, 'Fantasia (1940)']

[4, 'Wallace & Gromit: A Close Shave (1995)']

[4, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[5, 'Star Wars: Episode IV - A New Hope (1977)']

[5, 'Jurassic Park (1993)']

[5, 'Terminator 2: Judgment Day (1991)']

[5, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[5, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[5, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[5, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[5, 'Lord of the Rings: The Two Towers, The (2002)']

[5, 'Lord of the Rings: The Return of the King, The (2003)']

[5, 'Back to the Future (1985)']

[5, 'Independence Day (a.k.a. ID4) (1996)']

[5, 'Men in Black (a.k.a. MIB) (1997)']

[5, 'Terminator, The (1984)']

[5, 'Indiana Jones and the Last Crusade (1989)']

[5, 'Fifth Element, The (1997)']

[5, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[5, 'Star Wars: Episode I - The Phantom Menace (1999)']

[5, 'Aliens (1986)']

[5, 'Twister (1996)']

[5, 'Stargate (1994)']

[5, 'Waterworld (1995)']

[5, 'Star Trek: Generations (1994)']

[5, 'Avatar (2009)']

[5, 'Indiana Jones and the Temple of Doom (1984)']

[5, 'Matrix Reloaded, The (2003)']

[5, 'Back to the Future Part II (1989)']

[5, 'Armageddon (1998)']

[5, 'Total Recall (1990)']

[5, 'Back to the Future Part III (1990)']

[5, 'Star Wars: Episode II - Attack of the Clones (2002)']

[5, 'Star Trek: First Contact (1996)']

[5, 'Mummy, The (1999)']

[5, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[5, 'Matrix Revolutions, The (2003)']

[5, 'Abyss, The (1989)']

[5, 'I, Robot (2004)']

[5, 'Starship Troopers (1997)']

[5, 'Predator (1987)']

[5, 'Star Trek (2009)']

[5, 'Star Trek II: The Wrath of Khan (1982)']

[5, 'RoboCop (1987)']

[5, 'Judge Dredd (1995)']

[5, 'I Am Legend (2007)']

[5, 'Alien³ (a.k.a. Alien 3) (1992)']

[5, 'Signs (2002)']

[5, 'Mad Max: Fury Road (2015)']

[5, 'Species (1995)']

[5, 'Star Wars: Episode VII - The Force Awakens (2015)']

[5, 'Star Trek IV: The Voyage Home (1986)']

[5, 'Edge of Tomorrow (2014)']

[5, 'Johnny Mnemonic (1995)']

[5, 'Serenity (2005)']

[5, 'Deep Impact (1998)']

[5, 'Terminator 3: Rise of the Machines (2003)']

[5, 'Alien: Resurrection (1997)']

[5, 'X-Files: Fight the Future, The (1998)']

[5, 'Highlander (1986)']

--------- NEW CLUSTER -----------

[6, 'Titanic (1997)']

[6, 'Pretty Woman (1990)']

[6, 'Mrs. Doubtfire (1993)']

[6, 'Ghost (1990)']

[6, 'Sleepless in Seattle (1993)']

[6, 'Four Weddings and a Funeral (1994)']

[6, 'Clueless (1995)']

[6, 'Shakespeare in Love (1998)']

[6, 'When Harry Met Sally... (1989)']

[6, 'Jerry Maguire (1996)']

[6, 'While You Were Sleeping (1995)']

[6, 'Top Gun (1986)']

[6, 'Big (1988)']

[6, 'Sense and Sensibility (1995)']

[6, 'Quiz Show (1994)']

[6, "Mr. Holland's Opus (1995)"]

[6, 'Erin Brockovich (2000)']

[6, 'Dave (1993)']

[6, "What's Eating Gilbert Grape (1993)"]

[6, 'American President, The (1995)']

[6, 'Grease (1978)']

[6, 'Legends of the Fall (1994)']

[6, 'Santa Clause, The (1994)']

[6, 'Sound of Music, The (1965)']

[6, "Bridget Jones's Diary (2001)"]

[6, 'Full Monty, The (1997)']

[6, 'English Patient, The (1996)']

[6, 'Gone with the Wind (1939)']

[6, 'Notting Hill (1999)']

[6, 'Moulin Rouge (2001)']

[6, 'Wedding Singer, The (1998)']

[6, 'Truth About Cats & Dogs, The (1996)']

[6, '10 Things I Hate About You (1999)']

[6, 'Love Actually (2003)']

[6, 'Much Ado About Nothing (1993)']

[6, 'My Big Fat Greek Wedding (2002)']

[6, 'Chocolat (2000)']

[6, "You've Got Mail (1998)"]

[6, 'Casper (1995)']

[6, 'Legally Blonde (2001)']

[6, 'Phenomenon (1996)']

[6, 'Miss Congeniality (2000)']

[6, 'Field of Dreams (1989)']

[6, 'Sabrina (1995)']

[6, 'Crocodile Dundee (1986)']

[6, 'Dirty Dancing (1987)']

[6, 'Thelma & Louise (1991)']

[6, 'Illusionist, The (2006)']

[6, 'Father of the Bride Part II (1995)']

[6, 'Rob Roy (1995)']

[6, 'What Women Want (2000)']

[6, 'Crying Game, The (1992)']

[6, 'French Kiss (1995)']

[6, 'First Knight (1995)']

--------- NEW CLUSTER -----------

[7, 'Forrest Gump (1994)']

[7, 'Shawshank Redemption, The (1994)']

[7, "Schindler's List (1993)"]

[7, 'Braveheart (1995)']

[7, 'Apollo 13 (1995)']

[7, 'Saving Private Ryan (1998)']

[7, 'Sixth Sense, The (1999)']

[7, 'Gladiator (2000)']

[7, 'Dances with Wolves (1990)']

[7, 'Good Will Hunting (1997)']

[7, "One Flew Over the Cuckoo's Nest (1975)"]

[7, 'Beautiful Mind, A (2001)']

[7, 'American History X (1998)']

[7, 'Green Mile, The (1999)']

[7, 'Catch Me If You Can (2002)']

[7, 'Rain Man (1988)']

[7, 'Casablanca (1942)']

[7, 'Cast Away (2000)']

[7, 'Dead Poets Society (1989)']

[7, 'Life Is Beautiful (La Vita è bella) (1997)']

[7, 'As Good as It Gets (1997)']

[7, 'Stand by Me (1986)']

[7, 'Amadeus (1984)']

[7, 'Philadelphia (1993)']

[7, 'Dead Man Walking (1995)']

[7, 'Slumdog Millionaire (2008)']

[7, 'Pianist, The (2002)']

[7, 'Traffic (2000)']

[7, 'Rocky (1976)']

[7, 'Platoon (1986)']

[7, '12 Angry Men (1957)']

[7, 'Few Good Men, A (1992)']

[7, 'To Kill a Mockingbird (1962)']

[7, 'Last Samurai, The (2003)']

[7, 'The Imitation Game (2014)']

[7, "It's a Wonderful Life (1946)"]

[7, "King's Speech, The (2010)"]

[7, 'Million Dollar Baby (2004)']

[7, 'Social Network, The (2010)']

[7, 'Boot, Das (Boat, The) (1981)']

[7, 'Black Hawk Down (2001)']

[7, 'Gran Torino (2008)']

[7, 'Seven Samurai (Shichinin no samurai) (1954)']

[7, 'Lawrence of Arabia (1962)']

[7, 'Intouchables (2011)']

[7, 'Sling Blade (1996)']

[7, 'Bridge on the River Kwai, The (1957)']

[7, 'Blood Diamond (2006)']

[7, 'Good Morning, Vietnam (1987)']

[7, 'Last of the Mohicans, The (1992)']

[7, 'Glory (1989)']

[7, 'Cool Hand Luke (1967)']

[7, 'Hotel Rwanda (2004)']

[7, 'Crash (2004)']

[7, 'Deer Hunter, The (1978)']

[7, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[8, 'Matrix, The (1999)']

[8, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[8, 'Inception (2010)']

[8, 'Blade Runner (1982)']

[8, 'Alien (1979)']

[8, 'Truman Show, The (1998)']

[8, 'Eternal Sunshine of the Spotless Mind (2004)']

[8, 'Minority Report (2002)']

[8, '2001: A Space Odyssey (1968)']

[8, 'Donnie Darko (2001)']

[8, 'Prestige, The (2006)']

[8, 'Interstellar (2014)']

[8, 'Gattaca (1997)']

[8, 'Contact (1997)']

[8, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[8, 'Game, The (1997)']

[8, 'District 9 (2009)']

[8, 'The Martian (2015)']

[8, 'The Butterfly Effect (2004)']

[8, 'Brazil (1985)']

[8, 'Children of Men (2006)']

[8, 'Close Encounters of the Third Kind (1977)']

[8, 'A.I. Artificial Intelligence (2001)']

[8, 'Planet of the Apes (1968)']

[8, 'Ex Machina (2015)']

[8, 'Gravity (2013)']

[8, 'Dark City (1998)']

--------- NEW CLUSTER -----------

[9, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[9, 'Willy Wonka & the Chocolate Factory (1971)']

[9, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[9, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[9, 'Jumanji (1995)']

[9, 'Harry Potter and the Prisoner of Azkaban (2004)']

[9, 'Harry Potter and the Chamber of Secrets (2002)']

[9, 'Harry Potter and the Goblet of Fire (2005)']

[9, 'Honey, I Shrunk the Kids (1989)']

[9, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[9, 'Lost World: Jurassic Park, The (1997)']

[9, 'Harry Potter and the Order of the Phoenix (2007)']

[9, 'Harry Potter and the Half-Blood Prince (2009)']

[9, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[9, 'The Hunger Games (2012)']

[9, 'Dragonheart (1996)']

[9, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[9, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[9, 'Charlie and the Chocolate Factory (2005)']

[9, 'Three Musketeers, The (1993)']

[9, 'Goonies, The (1985)']

[9, "Pirates of the Caribbean: At World's End (2007)"]

--------- NEW CLUSTER -----------

[10, 'Pulp Fiction (1994)']

[10, 'Silence of the Lambs, The (1991)']

[10, 'Fight Club (1999)']

[10, 'Usual Suspects, The (1995)']

[10, 'American Beauty (1999)']

[10, 'Godfather, The (1972)']

[10, 'Seven (a.k.a. Se7en) (1995)']

[10, 'Fargo (1996)']

[10, 'Memento (2000)']

[10, 'Reservoir Dogs (1992)']

[10, 'Godfather: Part II, The (1974)']

[10, 'Kill Bill: Vol. 1 (2003)']

[10, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[10, 'Goodfellas (1990)']

[10, 'Shining, The (1980)']

[10, 'Clockwork Orange, A (1971)']

[10, 'Taxi Driver (1976)']

[10, 'Trainspotting (1996)']

[10, 'Kill Bill: Vol. 2 (2004)']

[10, 'L.A. Confidential (1997)']

[10, 'Apocalypse Now (1979)']

[10, 'Full Metal Jacket (1987)']

[10, 'Departed, The (2006)']

[10, 'Snatch (2000)']

[10, 'Heat (1995)']

[10, 'Natural Born Killers (1994)']

[10, 'Inglourious Basterds (2009)']

[10, 'Sin City (2005)']

[10, 'Psycho (1960)']

[10, 'Requiem for a Dream (2000)']

[10, 'Django Unchained (2012)']

[10, 'Rear Window (1954)']

[10, 'City of God (Cidade de Deus) (2002)']

[10, 'Lock, Stock & Two Smoking Barrels (1998)']

[10, 'Shutter Island (2010)']

[10, 'No Country for Old Men (2007)']

[10, 'Casino (1995)']

[10, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[10, 'Chinatown (1974)']

[10, 'North by Northwest (1959)']

[10, 'Untouchables, The (1987)']

[10, 'Vertigo (1958)']

[10, 'Wolf of Wall Street, The (2013)']

[10, 'Sting, The (1973)']

[10, 'True Romance (1993)']

[10, 'Scarface (1983)']

[10, 'Unforgiven (1992)']

[10, 'Black Swan (2010)']

[10, 'Gone Girl (2014)']

[10, 'Magnolia (1999)']

[10, 'American Psycho (2000)']

[10, 'Mulholland Drive (2001)']

[10, 'Jackie Brown (1997)']

[10, 'Maltese Falcon, The (1941)']

[10, 'Old Boy (2003)']

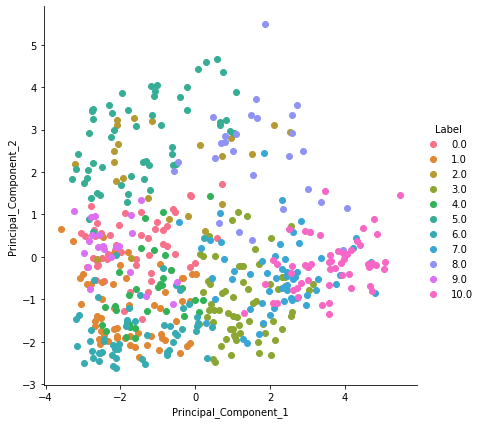
[10, 'Mystic River (2003)']

[52, 56, 23, 65, 32, 57, 54, 56, 27, 22, 56]

(500, 170) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.11406872559264872

Davies-Bouldin Index: 2.125132279329181

Calinski-Harabasz Score: 33.14972411895502

Test 37

Test type: GMM

Parameters: Num Components i = 12

--------- NEW CLUSTER -----------

[0, 'Matrix, The (1999)']

[0, 'Star Wars: Episode IV - A New Hope (1977)']

[0, 'Jurassic Park (1993)']

[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'Lord of the Rings: The Two Towers, The (2002)']

[0, 'Lord of the Rings: The Return of the King, The (2003)']

[0, 'Back to the Future (1985)']

[0, 'Terminator, The (1984)']

[0, 'Indiana Jones and the Last Crusade (1989)']

[0, 'Die Hard (1988)']

[0, 'Alien (1979)']

[0, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[0, 'Aliens (1986)']

[0, 'Jaws (1975)']

[0, 'Predator (1987)']

[0, 'Close Encounters of the Third Kind (1977)']

[0, 'Mad Max: Fury Road (2015)']

[0, 'Highlander (1986)']

--------- NEW CLUSTER -----------

[1, 'Fugitive, The (1993)']

[1, 'True Lies (1994)']

[1, 'Speed (1994)']

[1, 'Mission: Impossible (1996)']

[1, 'Die Hard: With a Vengeance (1995)']

[1, 'Rock, The (1996)']

[1, "Ocean's Eleven (2001)"]

[1, 'Bourne Identity, The (2002)']

[1, 'GoldenEye (1995)']

[1, 'Clear and Present Danger (1994)']

[1, 'Outbreak (1995)']

[1, 'Indiana Jones and the Temple of Doom (1984)']

[1, 'Firm, The (1993)']

[1, 'Cliffhanger (1993)']

[1, 'Net, The (1995)']

[1, 'Crimson Tide (1995)']

[1, 'Hunt for Red October, The (1990)']

[1, 'Broken Arrow (1996)']

[1, 'Bourne Ultimatum, The (2007)']

[1, 'Casino Royale (2006)']

[1, 'Top Gun (1986)']

[1, 'Face/Off (1997)']

[1, 'Bourne Supremacy, The (2004)']

[1, 'Lethal Weapon (1987)']

[1, 'Mission: Impossible II (2000)']

[1, 'In the Line of Fire (1993)']

[1, "Charlie's Angels (2000)"]

[1, 'Die Hard 2 (1990)']

[1, 'Maverick (1994)']

[1, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[1, 'Lost World: Jurassic Park, The (1997)']

[1, 'Enemy of the State (1998)']

[1, 'Eraser (1996)']

[1, 'Patriot, The (2000)']

[1, 'Con Air (1997)']

[1, 'Air Force One (1997)']

[1, 'Client, The (1994)']

[1, 'Tombstone (1993)']

[1, 'Desperado (1995)']

[1, 'Beverly Hills Cop III (1994)']

[1, 'Congo (1995)']

[1, 'Mask of Zorro, The (1998)']

[1, 'Ransom (1996)']

[1, 'The Hunger Games (2012)']

[1, "The Devil's Advocate (1997)"]

[1, 'Italian Job, The (2003)']

[1, 'Lethal Weapon 2 (1989)']

[1, 'Romancing the Stone (1984)']

[1, 'Last Action Hero (1993)']

[1, 'Mr. & Mrs. Smith (2005)']

[1, 'Bad Boys (1995)']

[1, 'Tomorrow Never Dies (1997)']

[1, 'Goldfinger (1964)']

[1, 'Three Musketeers, The (1993)']

[1, 'Sneakers (1992)']

[1, 'Rush Hour (1998)']

[1, 'Thomas Crown Affair, The (1999)']

[1, 'Disclosure (1994)']

[1, 'Beverly Hills Cop (1984)']

[1, 'Gone in 60 Seconds (2000)']

[1, 'Taken (2008)']

[1, "Pirates of the Caribbean: At World's End (2007)"]

[1, 'Executive Decision (1996)']

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[2, 'Fight Club (1999)']

[2, 'American Beauty (1999)']

[2, 'Kill Bill: Vol. 1 (2003)']

[2, 'Shining, The (1980)']

[2, 'Clockwork Orange, A (1971)']

[2, 'Taxi Driver (1976)']

[2, 'Trainspotting (1996)']

[2, 'Kill Bill: Vol. 2 (2004)']

[2, 'Apocalypse Now (1979)']

[2, 'Full Metal Jacket (1987)']

[2, 'Natural Born Killers (1994)']

[2, 'Sin City (2005)']

[2, 'Requiem for a Dream (2000)']

[2, '28 Days Later (2002)']

[2, 'Eyes Wide Shut (1999)']

[2, 'Wolf of Wall Street, The (2013)']

[2, 'Exorcist, The (1973)']

[2, 'Black Swan (2010)']

[2, 'American Psycho (2000)']

[2, 'Mulholland Drive (2001)']

[2, 'Old Boy (2003)']

--------- NEW CLUSTER -----------

[3, 'Forrest Gump (1994)']

[3, 'Shawshank Redemption, The (1994)']

[3, "Schindler's List (1993)"]

[3, 'Braveheart (1995)']

[3, 'Apollo 13 (1995)']

[3, 'Saving Private Ryan (1998)']

[3, 'Gladiator (2000)']

[3, 'Dances with Wolves (1990)']

[3, 'Good Will Hunting (1997)']

[3, "One Flew Over the Cuckoo's Nest (1975)"]

[3, 'Beautiful Mind, A (2001)']

[3, 'American History X (1998)']

[3, 'Green Mile, The (1999)']

[3, 'Catch Me If You Can (2002)']

[3, 'Rain Man (1988)']

[3, 'Casablanca (1942)']

[3, 'Cast Away (2000)']

[3, 'Dead Poets Society (1989)']

[3, 'Life Is Beautiful (La Vita è bella) (1997)']

[3, 'As Good as It Gets (1997)']

[3, 'Stand by Me (1986)']

[3, 'Amadeus (1984)']

[3, 'Philadelphia (1993)']

[3, 'Dead Man Walking (1995)']

[3, 'Slumdog Millionaire (2008)']

[3, 'Pianist, The (2002)']

[3, 'Traffic (2000)']

[3, 'Rocky (1976)']

[3, 'Platoon (1986)']

[3, '12 Angry Men (1957)']

[3, 'Few Good Men, A (1992)']

[3, 'To Kill a Mockingbird (1962)']

[3, 'Last Samurai, The (2003)']

[3, 'The Imitation Game (2014)']

[3, "It's a Wonderful Life (1946)"]

[3, 'Butch Cassidy and the Sundance Kid (1969)']

[3, "King's Speech, The (2010)"]

[3, 'Million Dollar Baby (2004)']

[3, 'Boot, Das (Boat, The) (1981)']

[3, 'Black Hawk Down (2001)']

[3, 'Gran Torino (2008)']

[3, 'Seven Samurai (Shichinin no samurai) (1954)']

[3, 'Lawrence of Arabia (1962)']

[3, 'Intouchables (2011)']

[3, 'Sling Blade (1996)']

[3, 'Bridge on the River Kwai, The (1957)']

[3, 'Blood Diamond (2006)']

[3, 'Good Morning, Vietnam (1987)']

[3, 'Last of the Mohicans, The (1992)']

[3, 'Glory (1989)']

[3, 'Cool Hand Luke (1967)']

[3, 'Hotel Rwanda (2004)']

[3, 'Crash (2004)']

[3, 'Deer Hunter, The (1978)']

[3, 'Great Escape, The (1963)']

--------- NEW CLUSTER -----------

[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, 'Being John Malkovich (1999)']

[4, 'Big Lebowski, The (1998)']

[4, "Ferris Bueller's Day Off (1986)"]

[4, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[4, 'Breakfast Club, The (1985)']

[4, 'Clerks (1994)']

[4, 'O Brother, Where Art Thou? (2000)']

[4, 'Office Space (1999)']

[4, 'Get Shorty (1995)']

[4, 'Lost in Translation (2003)']

[4, 'Leaving Las Vegas (1995)']

[4, 'Almost Famous (2000)']

[4, 'Fish Called Wanda, A (1988)']

[4, 'Citizen Kane (1941)']

[4, 'Little Miss Sunshine (2006)']

[4, 'Quiz Show (1994)']

[4, 'Graduate, The (1967)']

[4, 'Juno (2007)']

[4, "What's Eating Gilbert Grape (1993)"]

[4, 'High Fidelity (2000)']

[4, 'Annie Hall (1977)']

[4, 'Piano, The (1993)']

[4, 'Royal Tenenbaums, The (2001)']

[4, 'Ed Wood (1994)']

[4, 'Raising Arizona (1987)']

[4, 'Rushmore (1998)']

[4, 'Social Network, The (2010)']

[4, 'Grosse Pointe Blank (1997)']

[4, 'Boogie Nights (1997)']

[4, 'Talented Mr. Ripley, The (1999)']

[4, 'Bowling for Columbine (2002)']

[4, 'Chasing Amy (1997)']

[4, 'Election (1999)']

[4, 'Grand Budapest Hotel, The (2014)']

[4, 'Christmas Story, A (1983)']

[4, 'Magnolia (1999)']

[4, 'Three Kings (1999)']

[4, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[4, 'Birds, The (1963)']

[4, 'Some Like It Hot (1959)']

[4, '(500) Days of Summer (2009)']

[4, 'Garden State (2004)']

--------- NEW CLUSTER -----------

[5, 'Ace Ventura: Pet Detective (1994)']

[5, 'Mask, The (1994)']

[5, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[5, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[5, "There's Something About Mary (1998)"]

[5, 'Austin Powers: The Spy Who Shagged Me (1999)']

[5, 'American Pie (1999)']

[5, 'Austin Powers: International Man of Mystery (1997)']

[5, "Monty Python's Life of Brian (1979)"]

[5, 'Ace Ventura: When Nature Calls (1995)']

[5, 'Beetlejuice (1988)']

[5, 'Airplane! (1980)']

[5, 'Blues Brothers, The (1980)']

[5, 'Meet the Parents (2000)']

[5, 'Shaun of the Dead (2004)']

[5, 'Blair Witch Project, The (1999)']

[5, 'Happy Gilmore (1996)']

[5, 'Nutty Professor, The (1996)']

[5, 'Liar Liar (1997)']

[5, 'Addams Family Values (1993)']

[5, 'Mars Attacks! (1996)']

[5, 'South Park: Bigger, Longer and Uncut (1999)']

[5, 'Dogma (1999)']

[5, 'Scream (1996)']

[5, 'This Is Spinal Tap (1984)']

[5, 'Hangover, The (2009)']

[5, 'Young Frankenstein (1974)']

[5, 'Bruce Almighty (2003)']

[5, '40-Year-Old Virgin, The (2005)']

[5, 'Cable Guy, The (1996)']

[5, 'Hot Fuzz (2007)']

[5, 'Robin Hood: Men in Tights (1993)']

[5, 'School of Rock (2003)']

[5, 'From Dusk Till Dawn (1996)']

[5, "Wayne's World (1992)"]

[5, 'Naked Gun 33 1/3: The Final Insult (1994)']

[5, 'My Cousin Vinny (1992)']

[5, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[5, 'Zombieland (2009)']

[5, 'Rocky Horror Picture Show, The (1975)']

[5, 'Coneheads (1993)']

[5, 'Superbad (2007)']

[5, 'Hot Shots! Part Deux (1993)']

[5, 'Arachnophobia (1990)']

[5, 'Ring, The (2002)']

[5, 'Spaceballs (1987)']

[5, 'Army of Darkness (1993)']

[5, 'Gremlins (1984)']

[5, 'Animal House (1978)']

[5, 'Scary Movie (2000)']

[5, 'So I Married an Axe Murderer (1993)']

[5, 'Blazing Saddles (1974)']

--------- NEW CLUSTER -----------

[6, 'Independence Day (a.k.a. ID4) (1996)']

[6, 'Men in Black (a.k.a. MIB) (1997)']

[6, 'Fifth Element, The (1997)']

[6, 'Star Wars: Episode I - The Phantom Menace (1999)']

[6, 'Twister (1996)']

[6, 'Stargate (1994)']

[6, 'Waterworld (1995)']

[6, 'Star Trek: Generations (1994)']

[6, 'Avatar (2009)']

[6, 'Matrix Reloaded, The (2003)']

[6, 'Back to the Future Part II (1989)']

[6, 'Armageddon (1998)']

[6, 'Total Recall (1990)']

[6, 'Back to the Future Part III (1990)']

[6, 'Contact (1997)']

[6, 'Star Wars: Episode II - Attack of the Clones (2002)']

[6, 'Star Trek: First Contact (1996)']

[6, 'Mummy, The (1999)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[6, 'Demolition Man (1993)']

[6, 'Matrix Revolutions, The (2003)']

[6, 'Abyss, The (1989)']

[6, 'I, Robot (2004)']

[6, 'Starship Troopers (1997)']

[6, 'Star Trek (2009)']

[6, 'Star Trek II: The Wrath of Khan (1982)']

[6, 'RoboCop (1987)']

[6, 'Judge Dredd (1995)']

[6, 'Galaxy Quest (1999)']

[6, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[6, 'I Am Legend (2007)']

[6, 'Alien³ (a.k.a. Alien 3) (1992)']

[6, 'Signs (2002)']

[6, 'Species (1995)']

[6, 'Star Wars: Episode VII - The Force Awakens (2015)']

[6, 'Star Trek IV: The Voyage Home (1986)']

[6, 'Edge of Tomorrow (2014)']

[6, 'Johnny Mnemonic (1995)']

[6, 'Serenity (2005)']

[6, 'Wild Wild West (1999)']

[6, 'Deep Impact (1998)']

[6, 'Terminator 3: Rise of the Machines (2003)']

[6, 'Alien: Resurrection (1997)']

[6, 'X-Files: Fight the Future, The (1998)']

--------- NEW CLUSTER -----------

[7, 'Toy Story (1995)']

[7, 'Aladdin (1992)']

[7, 'Lion King, The (1994)']

[7, 'Shrek (2001)']

[7, 'Princess Bride, The (1987)']

[7, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[7, 'Beauty and the Beast (1991)']

[7, 'Finding Nemo (2003)']

[7, 'E.T. the Extra-Terrestrial (1982)']

[7, 'Monsters, Inc. (2001)']

[7, 'Babe (1995)']

[7, 'Incredibles, The (2004)']

[7, 'Willy Wonka & the Chocolate Factory (1971)']

[7, 'Toy Story 2 (1999)']

[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Up (2009)']

[7, 'Wizard of Oz, The (1939)']

[7, 'Jumanji (1995)']

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, "Bug's Life, A (1998)"]

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Nightmare Before Christmas, The (1993)']

[7, 'Who Framed Roger Rabbit? (1988)']

[7, 'Shrek 2 (2004)']

[7, 'Ratatouille (2007)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Chicken Run (2000)']

[7, 'Ice Age (2002)']

[7, 'Snow White and the Seven Dwarfs (1937)']

[7, 'Honey, I Shrunk the Kids (1989)']

[7, 'Santa Clause, The (1994)']

[7, 'Wallace & Gromit: The Wrong Trousers (1993)']

[7, 'Little Mermaid, The (1989)']

[7, 'Mary Poppins (1964)']

[7, 'Toy Story 3 (2010)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'How to Train Your Dragon (2010)']

[7, 'Dragonheart (1996)']

[7, 'Inside Out (2015)']

[7, 'Pocahontas (1995)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Pinocchio (1940)']

[7, 'Casper (1995)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Charlie and the Chocolate Factory (2005)']

[7, 'Fantasia (1940)']

[7, 'Wallace & Gromit: A Close Shave (1995)']

[7, 'Goonies, The (1985)']

[7, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[8, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[8, 'Inception (2010)']

[8, 'Blade Runner (1982)']

[8, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[8, 'Truman Show, The (1998)']

[8, 'Eternal Sunshine of the Spotless Mind (2004)']

[8, 'Minority Report (2002)']

[8, '2001: A Space Odyssey (1968)']

[8, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[8, 'WALL·E (2008)']

[8, 'Donnie Darko (2001)']

[8, 'Edward Scissorhands (1990)']

[8, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[8, 'Interstellar (2014)']

[8, 'Gattaca (1997)']

[8, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[8, 'Run Lola Run (Lola rennt) (1998)']

[8, 'District 9 (2009)']

[8, 'Big Fish (2003)']

[8, 'The Martian (2015)']

[8, 'The Butterfly Effect (2004)']

[8, 'Brazil (1985)']

[8, 'Children of Men (2006)']

[8, 'Sleepy Hollow (1999)']

[8, 'A.I. Artificial Intelligence (2001)']

[8, 'Pleasantville (1998)']

[8, 'Princess Mononoke (Mononoke-hime) (1997)']

[8, 'Planet of the Apes (1968)']

[8, 'Ex Machina (2015)']

[8, 'Gravity (2013)']

[8, 'Dark City (1998)']

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[9, 'Batman (1989)']

[9, 'Dark Knight, The (2008)']

[9, 'X-Men (2000)']

[9, 'Batman Forever (1995)']

[9, 'Batman Begins (2005)']

[9, 'Spider-Man (2002)']

[9, 'V for Vendetta (2006)']

[9, 'Iron Man (2008)']

[9, 'Spider-Man 2 (2004)']

[9, 'X2: X-Men United (2003)']

[9, 'Dark Knight Rises, The (2012)']

[9, '300 (2007)']

[9, 'Avengers, The (2012)']

[9, 'Unbreakable (2000)']

[9, 'Guardians of the Galaxy (2014)']

[9, 'Crow, The (1994)']

[9, 'Superman (1978)']

[9, 'Sherlock Holmes (2009)']

[9, 'Deadpool (2016)']

[9, 'Batman Returns (1992)']

[9, 'Blade (1998)']

[9, 'Watchmen (2009)']

[9, 'Iron Man 2 (2010)']

--------- NEW CLUSTER -----------

[10, 'Pulp Fiction (1994)']

[10, 'Silence of the Lambs, The (1991)']

[10, 'Usual Suspects, The (1995)']

[10, 'Godfather, The (1972)']

[10, 'Seven (a.k.a. Se7en) (1995)']

[10, 'Fargo (1996)']

[10, 'Sixth Sense, The (1999)']

[10, 'Memento (2000)']

[10, 'Reservoir Dogs (1992)']

[10, 'Godfather: Part II, The (1974)']

[10, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[10, 'Goodfellas (1990)']

[10, 'L.A. Confidential (1997)']

[10, 'Departed, The (2006)']

[10, 'Snatch (2000)']

[10, 'Heat (1995)']

[10, 'Inglourious Basterds (2009)']

[10, 'Prestige, The (2006)']

[10, 'Psycho (1960)']

[10, 'Django Unchained (2012)']

[10, 'Rear Window (1954)']

[10, 'City of God (Cidade de Deus) (2002)']

[10, 'Lock, Stock & Two Smoking Barrels (1998)']

[10, 'Shutter Island (2010)']

[10, 'Game, The (1997)']

[10, 'No Country for Old Men (2007)']

[10, 'Casino (1995)']

[10, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[10, 'Chinatown (1974)']

[10, 'North by Northwest (1959)']

[10, 'Untouchables, The (1987)']

[10, 'Vertigo (1958)']

[10, 'Sting, The (1973)']

[10, 'True Romance (1993)']

[10, 'Scarface (1983)']

[10, 'Unforgiven (1992)']

[10, 'Others, The (2001)']

[10, 'Gone Girl (2014)']

[10, 'Jackie Brown (1997)']

[10, 'Maltese Falcon, The (1941)']

[10, 'Mystic River (2003)']

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[11, 'Titanic (1997)']

[11, 'Pretty Woman (1990)']

[11, 'Mrs. Doubtfire (1993)']

[11, 'Home Alone (1990)']

[11, 'Ghost (1990)']

[11, 'Sleepless in Seattle (1993)']

[11, 'Four Weddings and a Funeral (1994)']

[11, 'Clueless (1995)']

[11, 'Shakespeare in Love (1998)']

[11, 'When Harry Met Sally... (1989)']

[11, 'Jerry Maguire (1996)']

[11, 'While You Were Sleeping (1995)']

[11, 'Birdcage, The (1996)']

[11, 'Big (1988)']

[11, 'Sense and Sensibility (1995)']

[11, "Mr. Holland's Opus (1995)"]

[11, 'Erin Brockovich (2000)']

[11, 'Dave (1993)']

[11, 'American President, The (1995)']

[11, 'Grease (1978)']

[11, 'Legends of the Fall (1994)']

[11, 'Sound of Music, The (1965)']

[11, "Bridget Jones's Diary (2001)"]

[11, 'Full Monty, The (1997)']

[11, 'English Patient, The (1996)']

[11, 'Gone with the Wind (1939)']

[11, 'Notting Hill (1999)']

[11, 'Moulin Rouge (2001)']

[11, 'Wedding Singer, The (1998)']

[11, 'Truth About Cats & Dogs, The (1996)']

[11, '10 Things I Hate About You (1999)']

[11, 'Love Actually (2003)']

[11, 'Much Ado About Nothing (1993)']

[11, 'My Big Fat Greek Wedding (2002)']

[11, 'Chocolat (2000)']

[11, "You've Got Mail (1998)"]

[11, 'Legally Blonde (2001)']

[11, 'Phenomenon (1996)']

[11, 'Miss Congeniality (2000)']

[11, 'Field of Dreams (1989)']

[11, 'Sabrina (1995)']

[11, 'Crocodile Dundee (1986)']

[11, 'Dirty Dancing (1987)']

[11, 'Thelma & Louise (1991)']

[11, 'Grumpier Old Men (1995)']

[11, 'Illusionist, The (2006)']

[11, "City Slickers II: The Legend of Curly's Gold (1994)"]

[11, 'Father of the Bride Part II (1995)']

[11, 'Rob Roy (1995)']

[11, 'What Women Want (2000)']

[11, 'Crying Game, The (1992)']

[11, 'French Kiss (1995)']

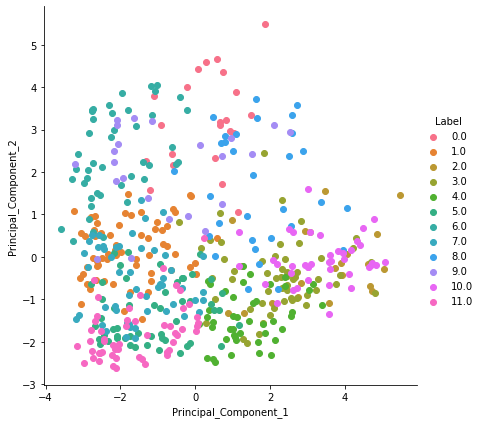
[11, 'First Knight (1995)']

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(500, 170) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.10962477549091755

Davies-Bouldin Index: 2.2240484971153354

Calinski-Harabasz Score: 31.36741744047481

Test 38

Test type: DBScan

Parameters: Radius epsilon = 3.5 Min samples n = 5

Estimated number of clusters: 6

Estimated number of noise points: 349

(500,) (500,)

-1 356.0

--------- NEW CLUSTER -----------

[0, 'Forrest Gump (1994)']

[0, 'Shawshank Redemption, The (1994)']

[0, 'Pulp Fiction (1994)']

[0, 'Silence of the Lambs, The (1991)']

[0, 'Matrix, The (1999)']

[0, 'Star Wars: Episode IV - A New Hope (1977)']

[0, 'Jurassic Park (1993)']

[0, "Schindler's List (1993)"]

[0, 'Braveheart (1995)']

[0, 'Fight Club (1999)']

[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'American Beauty (1999)']

[0, 'Godfather, The (1972)']

[0, 'Lord of the Rings: The Two Towers, The (2002)']

[0, 'Lord of the Rings: The Return of the King, The (2003)']

[0, 'Seven (a.k.a. Se7en) (1995)']

[0, 'Fugitive, The (1993)']

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[0, 'Monty Python and the Holy Grail (1975)']

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[0, 'Kill Bill: Vol. 1 (2003)']

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[0, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

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[0, "Ocean's Eleven (2001)"]

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[0, '2001: A Space Odyssey (1968)']

[0, 'Trainspotting (1996)']

[0, 'Kill Bill: Vol. 2 (2004)']

[0, 'Willy Wonka & the Chocolate Factory (1971)']

[0, 'Catch Me If You Can (2002)']

[0, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[0, 'Big Lebowski, The (1998)']

[0, 'Rain Man (1988)']

[0, 'Clear and Present Danger (1994)']

[0, 'L.A. Confidential (1997)']

[0, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[0, 'Waterworld (1995)']

[0, 'WALL·E (2008)']

[0, 'Donnie Darko (2001)']

[0, "Ferris Bueller's Day Off (1986)"]

[0, 'Casablanca (1942)']

[0, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[0, 'Apocalypse Now (1979)']

[0, 'V for Vendetta (2006)']

[0, 'Full Metal Jacket (1987)']

[0, 'Departed, The (2006)']

[0, 'Snatch (2000)']

[0, 'Cast Away (2000)']

[0, 'Dead Poets Society (1989)']

[0, 'American Pie (1999)']

[0, 'Wizard of Oz, The (1939)']

[0, 'Heat (1995)']

[0, 'Avatar (2009)']

[0, 'Indiana Jones and the Temple of Doom (1984)']

[0, 'Jaws (1975)']

[0, 'Firm, The (1993)']

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[0, 'Shakespeare in Love (1998)']

[0, 'Clerks (1994)']

[0, 'Life Is Beautiful (La Vita è bella) (1997)']

[0, 'Edward Scissorhands (1990)']

[0, 'O Brother, Where Art Thou? (2000)']

[0, 'Natural Born Killers (1994)']

[0, 'As Good as It Gets (1997)']

[0, 'Inglourious Basterds (2009)']

[0, 'Matrix Reloaded, The (2003)']

[0, 'Back to the Future Part II (1989)']

[0, 'Jerry Maguire (1996)']

[0, 'Office Space (1999)']

[0, 'Prestige, The (2006)']

[0, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

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[0, 'Total Recall (1990)']

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[0, 'Hunt for Red October, The (1990)']

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[0, 'Who Framed Roger Rabbit? (1988)']

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[0, 'Amadeus (1984)']

[0, 'Beetlejuice (1988)']

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[0, 'Lost in Translation (2003)']

[0, 'Rear Window (1954)']

[0, 'Leaving Las Vegas (1995)']

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[0, 'Philadelphia (1993)']

[0, 'City of God (Cidade de Deus) (2002)']

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[0, 'Sense and Sensibility (1995)']

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[0, 'Run Lola Run (Lola rennt) (1998)']

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[0, 'Erin Brockovich (2000)']

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[0, 'Raising Arizona (1987)']

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[0, 'RoboCop (1987)']

[0, 'True Romance (1993)']

[0, 'Wallace & Gromit: The Wrong Trousers (1993)']

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[0, 'Patriot, The (2000)']

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[0, 'Gone with the Wind (1939)']

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[0, 'A.I. Artificial Intelligence (2001)']

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[0, 'Deadpool (2016)']

[0, 'Mask of Zorro, The (1998)']

[0, 'My Cousin Vinny (1992)']

[0, 'Alien³ (a.k.a. Alien 3) (1992)']

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[0, 'Signs (2002)']

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[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[0, 'Dragonheart (1996)']

[0, 'Zombieland (2009)']

[0, 'Bowling for Columbine (2002)']

[0, 'Pleasantville (1998)']

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[0, 'Mad Max: Fury Road (2015)']

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[0, 'Jackie Brown (1997)']

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[0, 'Field of Dreams (1989)']

[0, 'Gravity (2013)']

[0, 'Maltese Falcon, The (1941)']

[0, 'Blood Diamond (2006)']

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[0, 'Good Morning, Vietnam (1987)']

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[0, 'Thelma & Louise (1991)']

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[0, 'Gremlins (1984)']

[0, 'Illusionist, The (2006)']

[0, 'Sneakers (1992)']

[0, 'Wild Wild West (1999)']

[0, 'Birds, The (1963)']

[0, 'Deep Impact (1998)']

[0, 'Glory (1989)']

[0, 'Rob Roy (1995)']

[0, 'Disclosure (1994)']

[0, 'Mystic River (2003)']

[0, 'Some Like It Hot (1959)']

[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Cool Hand Luke (1967)']

[0, 'Alien: Resurrection (1997)']

[0, 'Animal House (1978)']

[0, '(500) Days of Summer (2009)']

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[0, 'X-Files: Fight the Future, The (1998)']

[0, 'Garden State (2004)']

[0, 'Highlander (1986)']

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[0, 'Taken (2008)']

[0, "Pirates of the Caribbean: At World's End (2007)"]

[0, 'Deer Hunter, The (1978)']

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[1, 'Toy Story (1995)']

[1, 'Aladdin (1992)']

[1, 'Lion King, The (1994)']

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Babe (1995)']

[1, 'Incredibles, The (2004)']

[1, 'Toy Story 2 (1999)']

[1, 'Up (2009)']

[1, "Bug's Life, A (1998)"]

[1, 'Shrek 2 (2004)']

[1, 'Ratatouille (2007)']

[1, 'Chicken Run (2000)']

[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Pocahontas (1995)']

[1, 'Pinocchio (1940)']

[1, 'Fantasia (1940)']

[1, 'Kung Fu Panda (2008)']

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[2, 'True Lies (1994)']

[2, 'Speed (1994)']

[2, 'Ace Ventura: Pet Detective (1994)']

[2, 'Mission: Impossible (1996)']

[2, 'Mask, The (1994)']

[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

[2, 'Die Hard: With a Vengeance (1995)']

[2, 'Rock, The (1996)']

[2, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[2, 'Twister (1996)']

[2, 'Home Alone (1990)']

[2, 'Ghost (1990)']

[2, 'GoldenEye (1995)']

[2, 'Sleepless in Seattle (1993)']

[2, 'Four Weddings and a Funeral (1994)']

[2, 'Clueless (1995)']

[2, "There's Something About Mary (1998)"]

[2, 'Austin Powers: The Spy Who Shagged Me (1999)']

[2, 'Outbreak (1995)']

[2, 'Jumanji (1995)']

[2, 'Austin Powers: International Man of Mystery (1997)']

[2, 'Cliffhanger (1993)']

[2, 'When Harry Met Sally... (1989)']

[2, 'Net, The (1995)']

[2, 'While You Were Sleeping (1995)']

[2, 'Ace Ventura: When Nature Calls (1995)']

[2, 'Broken Arrow (1996)']

[2, 'Airplane! (1980)']

[2, 'Casino Royale (2006)']

[2, 'Face/Off (1997)']

[2, 'Bourne Supremacy, The (2004)']

[2, 'Meet the Parents (2000)']

[2, 'Happy Gilmore (1996)']

[2, 'Nutty Professor, The (1996)']

[2, 'Lethal Weapon (1987)']

[2, 'Liar Liar (1997)']

[2, 'Mission: Impossible II (2000)']

[2, 'Dave (1993)']

[2, 'Addams Family Values (1993)']

[2, 'South Park: Bigger, Longer and Uncut (1999)']

[2, 'American President, The (1995)']

[2, 'Die Hard 2 (1990)']

[2, 'Hangover, The (2009)']

[2, 'Grease (1978)']

[2, 'Honey, I Shrunk the Kids (1989)']

[2, 'Santa Clause, The (1994)']

[2, 'Young Frankenstein (1974)']

[2, 'Eraser (1996)']

[2, 'Bruce Almighty (2003)']

[2, 'Con Air (1997)']

[2, "Bridget Jones's Diary (2001)"]

[2, 'Full Monty, The (1997)']

[2, 'Air Force One (1997)']

[2, '40-Year-Old Virgin, The (2005)']

[2, 'Cable Guy, The (1996)']

[2, 'Notting Hill (1999)']

[2, 'Robin Hood: Men in Tights (1993)']

[2, "Wayne's World (1992)"]

[2, 'Wedding Singer, The (1998)']

[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, 'Congo (1995)']

[2, 'Ransom (1996)']

[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, 'Italian Job, The (2003)']

[2, 'Lethal Weapon 2 (1989)']

[2, 'Last Action Hero (1993)']

[2, 'Much Ado About Nothing (1993)']

[2, 'Hot Shots! Part Deux (1993)']

[2, 'Mr. & Mrs. Smith (2005)']

[2, 'Bad Boys (1995)']

[2, 'My Big Fat Greek Wedding (2002)']

[2, "You've Got Mail (1998)"]

[2, 'Casper (1995)']

[2, 'Spaceballs (1987)']

[2, 'Legally Blonde (2001)']

[2, 'Phenomenon (1996)']

[2, 'Miss Congeniality (2000)']

[2, 'Tomorrow Never Dies (1997)']

[2, 'Sabrina (1995)']

[2, 'Goldfinger (1964)']

[2, 'Dirty Dancing (1987)']

[2, 'Grumpier Old Men (1995)']

[2, "City Slickers II: The Legend of Curly's Gold (1994)"]

[2, 'Rush Hour (1998)']

[2, 'Father of the Bride Part II (1995)']

[2, 'Thomas Crown Affair, The (1999)']

[2, 'What Women Want (2000)']

[2, 'Beverly Hills Cop (1984)']

[2, 'Scary Movie (2000)']

[2, 'Gone in 60 Seconds (2000)']

[2, 'So I Married an Axe Murderer (1993)']

[2, 'French Kiss (1995)']

[2, 'Blazing Saddles (1974)']

[2, 'First Knight (1995)']

[2, 'Executive Decision (1996)']

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[3, 'X-Men (2000)']

[3, 'Spider-Man (2002)']

[3, 'Iron Man (2008)']

[3, 'Spider-Man 2 (2004)']

[3, 'X2: X-Men United (2003)']

[3, 'Avengers, The (2012)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Iron Man 2 (2010)']

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[4, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[4, 'Harry Potter and the Prisoner of Azkaban (2004)']

[4, 'Harry Potter and the Chamber of Secrets (2002)']

[4, 'Harry Potter and the Goblet of Fire (2005)']

[4, 'Harry Potter and the Order of the Phoenix (2007)']

[4, 'Harry Potter and the Half-Blood Prince (2009)']

[4, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[4, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[4, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Stargate (1994)']

[5, 'Star Trek: Generations (1994)']

[5, 'Star Trek: First Contact (1996)']

[5, 'Star Trek (2009)']

[5, 'Star Trek II: The Wrath of Khan (1982)']

[5, 'Star Trek IV: The Voyage Home (1986)']

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[6, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[6, 'Star Wars: Episode I - The Phantom Menace (1999)']

[6, 'Star Wars: Episode II - Attack of the Clones (2002)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

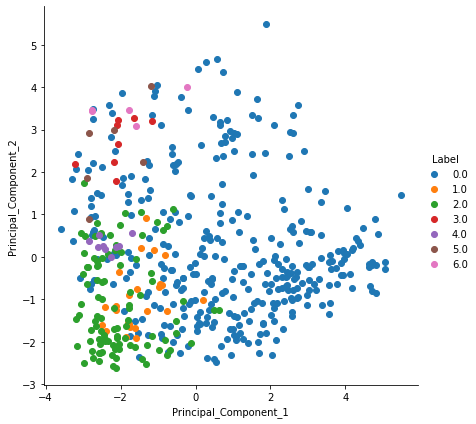
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(500, 170) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.007307150791913378

Davies-Bouldin Index: 1.7629544588112875

Calinski-Harabasz Score: 14.978877597347047

Test 39

Test type: DBScan

Parameters: Radius epsilon = 3.6 Min samples n = 5

Estimated number of clusters: 7

Estimated number of noise points: 324

(500,) (500,)

-1 356.0

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[0, 'Forrest Gump (1994)']

[0, 'Shawshank Redemption, The (1994)']

[0, 'Pulp Fiction (1994)']

[0, 'Silence of the Lambs, The (1991)']

[0, 'Matrix, The (1999)']

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[0, 'Braveheart (1995)']

[0, 'Fight Club (1999)']

[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'American Beauty (1999)']

[0, 'Godfather, The (1972)']

[0, 'Lord of the Rings: The Two Towers, The (2002)']

[0, 'Lord of the Rings: The Return of the King, The (2003)']

[0, 'Seven (a.k.a. Se7en) (1995)']

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[0, 'Godfather: Part II, The (1974)']

[0, 'Kill Bill: Vol. 1 (2003)']

[0, 'Truman Show, The (1998)']

[0, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[0, 'Eternal Sunshine of the Spotless Mind (2004)']

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[0, "Ocean's Eleven (2001)"]

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[0, 'Trainspotting (1996)']

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[0, 'Casablanca (1942)']

[0, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[0, 'Apocalypse Now (1979)']

[0, 'V for Vendetta (2006)']

[0, 'Full Metal Jacket (1987)']

[0, 'Departed, The (2006)']

[0, 'Snatch (2000)']

[0, 'Cast Away (2000)']

[0, 'Dead Poets Society (1989)']

[0, 'Heat (1995)']

[0, 'Avatar (2009)']

[0, 'Indiana Jones and the Temple of Doom (1984)']

[0, 'Jaws (1975)']

[0, 'Firm, The (1993)']

[0, 'Breakfast Club, The (1985)']

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[0, 'Clerks (1994)']

[0, 'Life Is Beautiful (La Vita è bella) (1997)']

[0, 'Edward Scissorhands (1990)']

[0, 'O Brother, Where Art Thou? (2000)']

[0, 'Natural Born Killers (1994)']

[0, 'As Good as It Gets (1997)']

[0, 'Inglourious Basterds (2009)']

[0, 'Matrix Reloaded, The (2003)']

[0, 'Back to the Future Part II (1989)']

[0, 'Jerry Maguire (1996)']

[0, 'Office Space (1999)']

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[0, 'Citizen Kane (1941)']

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[0, 'Run Lola Run (Lola rennt) (1998)']

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[0, "Mr. Holland's Opus (1995)"]

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[0, 'Mars Attacks! (1996)']

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[0, 'Close Encounters of the Third Kind (1977)']

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[0, 'Talented Mr. Ripley, The (1999)']

[0, 'The Hunger Games (2012)']

[0, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[0, 'Dragonheart (1996)']

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[0, 'Mad Max: Fury Road (2015)']

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[0, 'Field of Dreams (1989)']

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[0, 'Glory (1989)']

[0, 'Rob Roy (1995)']

[0, 'Disclosure (1994)']

[0, 'Mystic River (2003)']

[0, 'Some Like It Hot (1959)']

[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Cool Hand Luke (1967)']

[0, 'Alien: Resurrection (1997)']

[0, 'Animal House (1978)']

[0, '(500) Days of Summer (2009)']

[0, 'Hotel Rwanda (2004)']

[0, 'Garden State (2004)']

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[1, 'Toy Story (1995)']

[1, 'Aladdin (1992)']

[1, 'Lion King, The (1994)']

[1, 'Shrek (2001)']

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Babe (1995)']

[1, 'Incredibles, The (2004)']

[1, 'Willy Wonka & the Chocolate Factory (1971)']

[1, 'Toy Story 2 (1999)']

[1, 'Up (2009)']

[1, 'Wizard of Oz, The (1939)']

[1, "Bug's Life, A (1998)"]

[1, 'Shrek 2 (2004)']

[1, 'Ratatouille (2007)']

[1, 'Chicken Run (2000)']

[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Inside Out (2015)']

[1, 'Pocahontas (1995)']

[1, 'Pinocchio (1940)']

[1, 'Fantasia (1940)']

[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Kung Fu Panda (2008)']

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[2, 'Independence Day (a.k.a. ID4) (1996)']

[2, 'True Lies (1994)']

[2, 'Speed (1994)']

[2, 'Ace Ventura: Pet Detective (1994)']

[2, 'Mission: Impossible (1996)']

[2, 'Die Hard (1988)']

[2, 'Mask, The (1994)']

[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

[2, 'Die Hard: With a Vengeance (1995)']

[2, 'Rock, The (1996)']

[2, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[2, 'Batman Forever (1995)']

[2, 'Twister (1996)']

[2, 'Home Alone (1990)']

[2, 'Ghost (1990)']

[2, 'GoldenEye (1995)']

[2, 'Sleepless in Seattle (1993)']

[2, 'Four Weddings and a Funeral (1994)']

[2, 'Clueless (1995)']

[2, "There's Something About Mary (1998)"]

[2, 'Austin Powers: The Spy Who Shagged Me (1999)']

[2, 'American Pie (1999)']

[2, 'Outbreak (1995)']

[2, 'Jumanji (1995)']

[2, 'Austin Powers: International Man of Mystery (1997)']

[2, 'Cliffhanger (1993)']

[2, 'When Harry Met Sally... (1989)']

[2, 'Net, The (1995)']

[2, 'Armageddon (1998)']

[2, 'While You Were Sleeping (1995)']

[2, 'Ace Ventura: When Nature Calls (1995)']

[2, 'Broken Arrow (1996)']

[2, 'Airplane! (1980)']

[2, 'Casino Royale (2006)']

[2, 'Face/Off (1997)']

[2, 'Bourne Supremacy, The (2004)']

[2, 'Meet the Parents (2000)']

[2, 'Happy Gilmore (1996)']

[2, 'Nutty Professor, The (1996)']

[2, 'Lethal Weapon (1987)']

[2, 'Liar Liar (1997)']

[2, 'Mission: Impossible II (2000)']

[2, 'In the Line of Fire (1993)']

[2, 'Dave (1993)']

[2, 'Addams Family Values (1993)']

[2, 'South Park: Bigger, Longer and Uncut (1999)']

[2, 'American President, The (1995)']

[2, 'Die Hard 2 (1990)']

[2, 'Hangover, The (2009)']

[2, 'Grease (1978)']

[2, 'Honey, I Shrunk the Kids (1989)']

[2, 'Lost World: Jurassic Park, The (1997)']

[2, 'Santa Clause, The (1994)']

[2, 'Young Frankenstein (1974)']

[2, 'Enemy of the State (1998)']

[2, 'Eraser (1996)']

[2, 'Bruce Almighty (2003)']

[2, 'Con Air (1997)']

[2, "Bridget Jones's Diary (2001)"]

[2, 'Full Monty, The (1997)']

[2, 'Air Force One (1997)']

[2, '40-Year-Old Virgin, The (2005)']

[2, 'Cable Guy, The (1996)']

[2, 'Notting Hill (1999)']

[2, 'Robin Hood: Men in Tights (1993)']

[2, 'Desperado (1995)']

[2, "Wayne's World (1992)"]

[2, 'Wedding Singer, The (1998)']

[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, 'Congo (1995)']

[2, 'Ransom (1996)']

[2, 'My Cousin Vinny (1992)']

[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, 'Italian Job, The (2003)']

[2, 'Lethal Weapon 2 (1989)']

[2, 'Last Action Hero (1993)']

[2, 'Much Ado About Nothing (1993)']

[2, 'Superbad (2007)']

[2, 'Hot Shots! Part Deux (1993)']

[2, 'Mr. & Mrs. Smith (2005)']

[2, 'Bad Boys (1995)']

[2, 'My Big Fat Greek Wedding (2002)']

[2, "You've Got Mail (1998)"]

[2, 'Casper (1995)']

[2, 'Spaceballs (1987)']

[2, 'Legally Blonde (2001)']

[2, 'Phenomenon (1996)']

[2, 'Miss Congeniality (2000)']

[2, 'Tomorrow Never Dies (1997)']

[2, 'Sabrina (1995)']

[2, 'Goldfinger (1964)']

[2, 'Dirty Dancing (1987)']

[2, 'Grumpier Old Men (1995)']

[2, "City Slickers II: The Legend of Curly's Gold (1994)"]

[2, 'Wild Wild West (1999)']

[2, 'Rush Hour (1998)']

[2, 'Father of the Bride Part II (1995)']

[2, 'Thomas Crown Affair, The (1999)']

[2, 'What Women Want (2000)']

[2, 'Beverly Hills Cop (1984)']

[2, 'Scary Movie (2000)']

[2, 'Gone in 60 Seconds (2000)']

[2, 'So I Married an Axe Murderer (1993)']

[2, 'French Kiss (1995)']

[2, 'Blazing Saddles (1974)']

[2, 'First Knight (1995)']

[2, 'Executive Decision (1996)']

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[3, 'X-Men (2000)']

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[3, 'Iron Man (2008)']

[3, 'Spider-Man 2 (2004)']

[3, 'X2: X-Men United (2003)']

[3, 'Avengers, The (2012)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Superman (1978)']

[3, 'Iron Man 2 (2010)']

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[4, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[4, 'Harry Potter and the Prisoner of Azkaban (2004)']

[4, 'Harry Potter and the Chamber of Secrets (2002)']

[4, 'Harry Potter and the Goblet of Fire (2005)']

[4, 'Harry Potter and the Order of the Phoenix (2007)']

[4, 'Harry Potter and the Half-Blood Prince (2009)']

[4, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[4, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[4, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Stargate (1994)']

[5, 'Star Trek: Generations (1994)']

[5, 'Star Trek: First Contact (1996)']

[5, 'Star Trek (2009)']

[5, 'Star Trek II: The Wrath of Khan (1982)']

[5, 'Star Trek IV: The Voyage Home (1986)']

[5, 'X-Files: Fight the Future, The (1998)']

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[6, 'Psycho (1960)']

[6, 'Rear Window (1954)']

[6, 'Chinatown (1974)']

[6, 'North by Northwest (1959)']

[6, 'Vertigo (1958)']

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[7, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[7, 'Star Wars: Episode I - The Phantom Menace (1999)']

[7, 'Star Wars: Episode II - Attack of the Clones (2002)']

[7, 'Star Wars: Episode III - Revenge of the Sith (2005)']

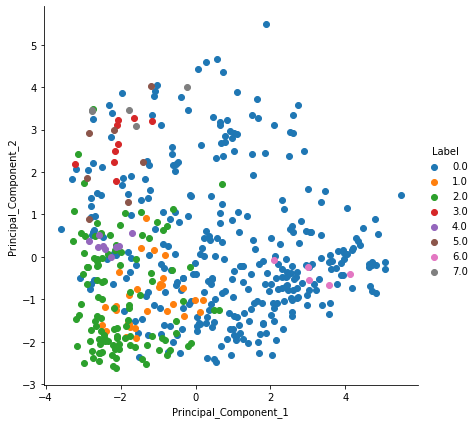
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.023910572912726444

Davies-Bouldin Index: 1.7841571278446062

Calinski-Harabasz Score: 14.767683650986177

Test 40

Test type: DBScan

Parameters: Radius epsilon = 3.7 Min samples n = 5

Estimated number of clusters: 7

Estimated number of noise points: 303

(500,) (500,)

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[0, 'Forrest Gump (1994)']

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[0, 'Pulp Fiction (1994)']

[0, 'Silence of the Lambs, The (1991)']

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[0, 'Fight Club (1999)']

[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'American Beauty (1999)']

[0, 'Godfather, The (1972)']

[0, 'Lord of the Rings: The Two Towers, The (2002)']

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[0, 'Seven (a.k.a. Se7en) (1995)']

[0, 'Fugitive, The (1993)']

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[0, 'E.T. the Extra-Terrestrial (1982)']

[0, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

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[0, 'Casablanca (1942)']

[0, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[0, 'V for Vendetta (2006)']

[0, 'Departed, The (2006)']

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[0, 'Dead Poets Society (1989)']

[0, 'Heat (1995)']

[0, 'Avatar (2009)']

[0, 'Indiana Jones and the Temple of Doom (1984)']

[0, 'Jaws (1975)']

[0, 'Firm, The (1993)']

[0, 'Breakfast Club, The (1985)']

[0, 'Clerks (1994)']

[0, 'Life Is Beautiful (La Vita è bella) (1997)']

[0, 'Edward Scissorhands (1990)']

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[0, 'Natural Born Killers (1994)']

[0, 'As Good as It Gets (1997)']

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[0, 'Back to the Future Part II (1989)']

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[0, 'Office Space (1999)']

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[0, 'Requiem for a Dream (2000)']

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[0, 'Run Lola Run (Lola rennt) (1998)']

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[0, "Mr. Holland's Opus (1995)"]

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[0, 'To Kill a Mockingbird (1962)']

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[0, 'Royal Tenenbaums, The (2001)']

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[0, 'Close Encounters of the Third Kind (1977)']

[0, 'Scarface (1983)']

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[0, 'Dragonheart (1996)']

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[0, 'Deep Impact (1998)']

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[0, 'Rob Roy (1995)']

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[0, 'Some Like It Hot (1959)']

[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Cool Hand Luke (1967)']

[0, 'Alien: Resurrection (1997)']

[0, 'Animal House (1978)']

[0, '(500) Days of Summer (2009)']

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[1, 'Aladdin (1992)']

[1, 'Lion King, The (1994)']

[1, 'Shrek (2001)']

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'Monsters, Inc. (2001)']

[1, 'Babe (1995)']

[1, 'Incredibles, The (2004)']

[1, 'Willy Wonka & the Chocolate Factory (1971)']

[1, 'Toy Story 2 (1999)']

[1, 'Up (2009)']

[1, 'Wizard of Oz, The (1939)']

[1, "Bug's Life, A (1998)"]

[1, 'Shrek 2 (2004)']

[1, 'Ratatouille (2007)']

[1, 'Chicken Run (2000)']

[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Inside Out (2015)']

[1, 'Pocahontas (1995)']

[1, 'Pinocchio (1940)']

[1, 'Fantasia (1940)']

[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Kung Fu Panda (2008)']

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[2, 'Independence Day (a.k.a. ID4) (1996)']

[2, 'True Lies (1994)']

[2, 'Speed (1994)']

[2, 'Ace Ventura: Pet Detective (1994)']

[2, 'Mission: Impossible (1996)']

[2, 'Die Hard (1988)']

[2, 'Mask, The (1994)']

[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

[2, 'Die Hard: With a Vengeance (1995)']

[2, 'Rock, The (1996)']

[2, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[2, 'Batman Forever (1995)']

[2, 'Twister (1996)']

[2, 'Stargate (1994)']

[2, 'Home Alone (1990)']

[2, 'Ghost (1990)']

[2, 'GoldenEye (1995)']

[2, 'Sleepless in Seattle (1993)']

[2, 'Clear and Present Danger (1994)']

[2, 'Four Weddings and a Funeral (1994)']

[2, 'Clueless (1995)']

[2, "There's Something About Mary (1998)"]

[2, 'Austin Powers: The Spy Who Shagged Me (1999)']

[2, 'American Pie (1999)']

[2, 'Outbreak (1995)']

[2, 'Star Trek: Generations (1994)']

[2, 'Jumanji (1995)']

[2, 'Shakespeare in Love (1998)']

[2, 'Austin Powers: International Man of Mystery (1997)']

[2, 'Cliffhanger (1993)']

[2, 'When Harry Met Sally... (1989)']

[2, 'Net, The (1995)']

[2, 'Armageddon (1998)']

[2, 'While You Were Sleeping (1995)']

[2, 'Back to the Future Part III (1990)']

[2, 'Ace Ventura: When Nature Calls (1995)']

[2, 'Broken Arrow (1996)']

[2, 'Airplane! (1980)']

[2, 'Bourne Ultimatum, The (2007)']

[2, 'Casino Royale (2006)']

[2, 'Big (1988)']

[2, 'Face/Off (1997)']

[2, 'Bourne Supremacy, The (2004)']

[2, 'Meet the Parents (2000)']

[2, 'Sense and Sensibility (1995)']

[2, 'Star Trek: First Contact (1996)']

[2, 'Happy Gilmore (1996)']

[2, 'Nutty Professor, The (1996)']

[2, 'Lethal Weapon (1987)']

[2, 'Liar Liar (1997)']

[2, 'Mission: Impossible II (2000)']

[2, 'Demolition Man (1993)']

[2, 'In the Line of Fire (1993)']

[2, 'Dave (1993)']

[2, 'Addams Family Values (1993)']

[2, 'Mars Attacks! (1996)']

[2, 'South Park: Bigger, Longer and Uncut (1999)']

[2, 'American President, The (1995)']

[2, 'Die Hard 2 (1990)']

[2, 'Maverick (1994)']

[2, 'Hangover, The (2009)']

[2, 'Grease (1978)']

[2, 'Honey, I Shrunk the Kids (1989)']

[2, 'Star Trek (2009)']

[2, 'Lost World: Jurassic Park, The (1997)']

[2, 'Star Trek II: The Wrath of Khan (1982)']

[2, 'Santa Clause, The (1994)']

[2, 'Young Frankenstein (1974)']

[2, 'Enemy of the State (1998)']

[2, 'Eraser (1996)']

[2, 'Bruce Almighty (2003)']

[2, 'Con Air (1997)']

[2, "Bridget Jones's Diary (2001)"]

[2, 'Full Monty, The (1997)']

[2, 'Air Force One (1997)']

[2, '40-Year-Old Virgin, The (2005)']

[2, 'Galaxy Quest (1999)']

[2, 'Cable Guy, The (1996)']

[2, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[2, 'Notting Hill (1999)']

[2, 'Robin Hood: Men in Tights (1993)']

[2, 'Desperado (1995)']

[2, 'School of Rock (2003)']

[2, "Wayne's World (1992)"]

[2, 'Wedding Singer, The (1998)']

[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

[2, 'Beverly Hills Cop III (1994)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, 'Congo (1995)']

[2, 'Mask of Zorro, The (1998)']

[2, 'Ransom (1996)']

[2, 'My Cousin Vinny (1992)']

[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, 'Italian Job, The (2003)']

[2, 'Coneheads (1993)']

[2, 'Lethal Weapon 2 (1989)']

[2, 'Last Action Hero (1993)']

[2, 'Much Ado About Nothing (1993)']

[2, 'Superbad (2007)']

[2, 'Hot Shots! Part Deux (1993)']

[2, 'Mr. & Mrs. Smith (2005)']

[2, 'Bad Boys (1995)']

[2, 'My Big Fat Greek Wedding (2002)']

[2, "You've Got Mail (1998)"]

[2, 'Casper (1995)']

[2, 'Star Trek IV: The Voyage Home (1986)']

[2, 'Spaceballs (1987)']

[2, 'Legally Blonde (2001)']

[2, 'Phenomenon (1996)']

[2, 'Miss Congeniality (2000)']

[2, 'Tomorrow Never Dies (1997)']

[2, 'Sabrina (1995)']

[2, 'Goldfinger (1964)']

[2, 'Three Musketeers, The (1993)']

[2, 'Dirty Dancing (1987)']

[2, 'Goonies, The (1985)']

[2, 'Grumpier Old Men (1995)']

[2, "City Slickers II: The Legend of Curly's Gold (1994)"]

[2, 'Wild Wild West (1999)']

[2, 'Rush Hour (1998)']

[2, 'Father of the Bride Part II (1995)']

[2, 'Thomas Crown Affair, The (1999)']

[2, 'What Women Want (2000)']

[2, 'Beverly Hills Cop (1984)']

[2, 'Scary Movie (2000)']

[2, 'Gone in 60 Seconds (2000)']

[2, 'X-Files: Fight the Future, The (1998)']

[2, 'So I Married an Axe Murderer (1993)']

[2, 'French Kiss (1995)']

[2, 'Blazing Saddles (1974)']

[2, 'First Knight (1995)']

[2, 'Executive Decision (1996)']

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[3, 'X-Men (2000)']

[3, 'Spider-Man (2002)']

[3, 'Iron Man (2008)']

[3, 'Spider-Man 2 (2004)']

[3, 'X2: X-Men United (2003)']

[3, 'Avengers, The (2012)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Superman (1978)']

[3, 'Iron Man 2 (2010)']

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[4, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[4, 'Harry Potter and the Prisoner of Azkaban (2004)']

[4, 'Harry Potter and the Chamber of Secrets (2002)']

[4, 'Harry Potter and the Goblet of Fire (2005)']

[4, 'Harry Potter and the Order of the Phoenix (2007)']

[4, 'Harry Potter and the Half-Blood Prince (2009)']

[4, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[4, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[4, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[5, 'Psycho (1960)']

[5, 'Rear Window (1954)']

[5, 'Chinatown (1974)']

[5, 'North by Northwest (1959)']

[5, 'Vertigo (1958)']

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[6, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[6, 'Star Wars: Episode I - The Phantom Menace (1999)']

[6, 'Star Wars: Episode II - Attack of the Clones (2002)']

[6, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[6, 'Star Wars: Episode VII - The Force Awakens (2015)']

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[7, 'Apocalypse Now (1979)']

[7, 'Full Metal Jacket (1987)']

[7, 'Platoon (1986)']

[7, 'Boot, Das (Boat, The) (1981)']

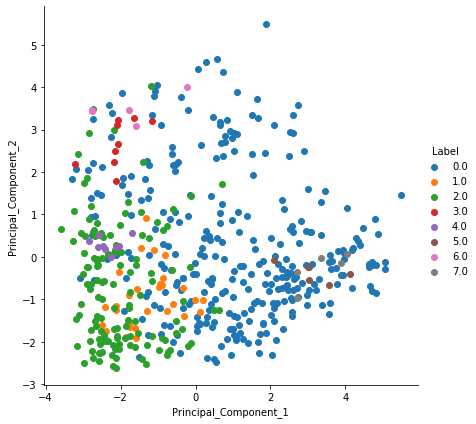
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(500, 170) to (500, 2)

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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.020033110954333785

Davies-Bouldin Index: 1.7944692285709456

Calinski-Harabasz Score: 15.714427257788207

Test 41

Test type: DBScan

Parameters: Radius epsilon = 3.8000000000000003 Min samples n = 5

Estimated number of clusters: 6

Estimated number of noise points: 283

(500,) (500,)

-1 356.0

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[0, 'Forrest Gump (1994)']

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[0, 'Pulp Fiction (1994)']

[0, 'Silence of the Lambs, The (1991)']

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[0, 'Terminator 2: Judgment Day (1991)']

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[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

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[0, 'Godfather: Part II, The (1974)']

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[0, 'Eternal Sunshine of the Spotless Mind (2004)']

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[1, 'Star Trek: Generations (1994)']

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[1, 'Broken Arrow (1996)']

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[1, 'Bourne Ultimatum, The (2007)']

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[1, 'Snow White and the Seven Dwarfs (1937)']

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[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

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[1, 'Last Action Hero (1993)']

[1, 'Much Ado About Nothing (1993)']

[1, 'Superbad (2007)']

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[1, 'Hot Shots! Part Deux (1993)']

[1, 'Mr. & Mrs. Smith (2005)']

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[1, 'Wallace & Gromit: A Close Shave (1995)']

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[1, 'Grumpier Old Men (1995)']

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[1, 'Rush Hour (1998)']

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[1, 'Beverly Hills Cop (1984)']

[1, 'Scary Movie (2000)']

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[1, 'French Kiss (1995)']

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[2, 'Superman (1978)']

[2, 'Iron Man 2 (2010)']

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[3, 'Harry Potter and the Chamber of Secrets (2002)']

[3, 'Harry Potter and the Goblet of Fire (2005)']

[3, 'Harry Potter and the Order of the Phoenix (2007)']

[3, 'Harry Potter and the Half-Blood Prince (2009)']

[3, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[3, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[3, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[4, 'Rear Window (1954)']

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[4, 'Vertigo (1958)']

[4, 'Maltese Falcon, The (1941)']

[4, 'Birds, The (1963)']

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[5, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[5, 'Star Wars: Episode I - The Phantom Menace (1999)']

[5, 'Star Wars: Episode II - Attack of the Clones (2002)']

[5, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[5, 'Star Wars: Episode VII - The Force Awakens (2015)']

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[6, 'Apocalypse Now (1979)']

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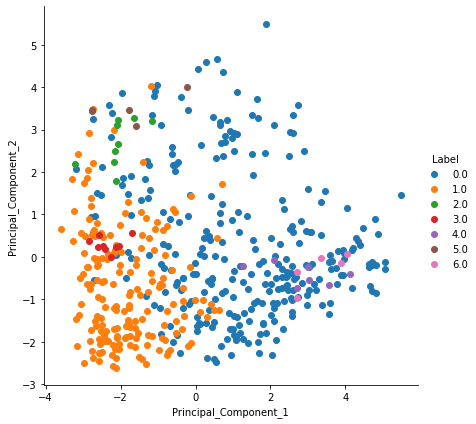
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.01419848909335974

Davies-Bouldin Index: 1.8217016697494357

Calinski-Harabasz Score: 16.37741081675242

Test 42

Test type: DBScan

Parameters: Radius epsilon = 3.9000000000000004 Min samples n = 5

Estimated number of clusters: 8

Estimated number of noise points: 251

(500,) (500,)

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[1, 'True Lies (1994)']

[1, 'Speed (1994)']

[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Mission: Impossible (1996)']

[1, 'Die Hard (1988)']

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[1, 'Finding Nemo (2003)']

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[1, 'Monsters, Inc. (2001)']

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[1, 'Mrs. Doubtfire (1993)']

[1, 'Die Hard: With a Vengeance (1995)']

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[1, 'Up (2009)']

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[1, 'Austin Powers: International Man of Mystery (1997)']

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[1, "Bug's Life, A (1998)"]

[1, 'Crimson Tide (1995)']

[1, 'While You Were Sleeping (1995)']

[1, 'Back to the Future Part III (1990)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Birdcage, The (1996)']

[1, 'Broken Arrow (1996)']

[1, 'Airplane! (1980)']

[1, 'Bourne Ultimatum, The (2007)']

[1, 'Casino Royale (2006)']

[1, 'Top Gun (1986)']

[1, 'Big (1988)']

[1, 'Shrek 2 (2004)']

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[1, 'Sense and Sensibility (1995)']

[1, 'Blair Witch Project, The (1999)']

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[1, 'Mission: Impossible II (2000)']

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[1, 'Ice Age (2002)']

[1, 'Demolition Man (1993)']

[1, 'In the Line of Fire (1993)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, "Charlie's Angels (2000)"]

[1, 'Dave (1993)']

[1, 'Addams Family Values (1993)']

[1, 'Mars Attacks! (1996)']

[1, 'South Park: Bigger, Longer and Uncut (1999)']

[1, 'American President, The (1995)']

[1, 'Scream (1996)']

[1, 'This Is Spinal Tap (1984)']

[1, 'Die Hard 2 (1990)']

[1, 'Maverick (1994)']

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[1, 'Grease (1978)']

[1, 'Honey, I Shrunk the Kids (1989)']

[1, 'Star Trek (2009)']

[1, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[1, 'Lost World: Jurassic Park, The (1997)']

[1, 'Star Trek II: The Wrath of Khan (1982)']

[1, 'Santa Clause, The (1994)']

[1, 'Young Frankenstein (1974)']

[1, 'Enemy of the State (1998)']

[1, 'Eraser (1996)']

[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

[1, 'Sound of Music, The (1965)']

[1, 'Bruce Almighty (2003)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Con Air (1997)']

[1, "Bridget Jones's Diary (2001)"]

[1, 'Full Monty, The (1997)']

[1, 'Judge Dredd (1995)']

[1, 'Air Force One (1997)']

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[1, 'Client, The (1994)']

[1, 'Galaxy Quest (1999)']

[1, 'Cable Guy, The (1996)']

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[1, 'Desperado (1995)']

[1, 'School of Rock (2003)']

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[1, 'Wedding Singer, The (1998)']

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Beverly Hills Cop III (1994)']

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[1, 'Mask of Zorro, The (1998)']

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[1, 'How to Train Your Dragon (2010)']

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[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

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[1, 'Dragonheart (1996)']

[1, 'Love Actually (2003)']

[1, 'Inside Out (2015)']

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[1, 'Hot Shots! Part Deux (1993)']

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[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Sabrina (1995)']

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[1, 'Three Musketeers, The (1993)']

[1, 'Dirty Dancing (1987)']

[1, 'Serenity (2005)']

[1, 'Thelma & Louise (1991)']

[1, 'Goonies, The (1985)']

[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Wild Wild West (1999)']

[1, 'Rush Hour (1998)']

[1, 'Father of the Bride Part II (1995)']

[1, 'Deep Impact (1998)']

[1, 'Thomas Crown Affair, The (1999)']

[1, 'Rob Roy (1995)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, 'Alien: Resurrection (1997)']

[1, 'Animal House (1978)']

[1, 'Beverly Hills Cop (1984)']

[1, 'Scary Movie (2000)']

[1, 'Gone in 60 Seconds (2000)']

[1, 'X-Files: Fight the Future, The (1998)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'French Kiss (1995)']

[1, 'Taken (2008)']

[1, 'Blazing Saddles (1974)']

[1, 'First Knight (1995)']

[1, 'Executive Decision (1996)']

[1, 'Kung Fu Panda (2008)']

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[2, "Schindler's List (1993)"]

[2, 'Saving Private Ryan (1998)']

[2, 'Apocalypse Now (1979)']

[2, 'Full Metal Jacket (1987)']

[2, 'Platoon (1986)']

[2, 'Boot, Das (Boat, The) (1981)']

[2, 'Bridge on the River Kwai, The (1957)']

[2, 'Glory (1989)']

[2, 'Deer Hunter, The (1978)']

[2, 'Great Escape, The (1963)']

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[3, 'Batman (1989)']

[3, 'Batman Begins (2005)']

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[4, 'X-Men (2000)']

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[4, 'Iron Man (2008)']

[4, 'Spider-Man 2 (2004)']

[4, 'X2: X-Men United (2003)']

[4, 'Avengers, The (2012)']

[4, 'Guardians of the Galaxy (2014)']

[4, 'Superman (1978)']

[4, 'Iron Man 2 (2010)']

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[5, 'Rain Man (1988)']

[5, 'As Good as It Gets (1997)']

[5, 'Million Dollar Baby (2004)']

[5, 'Sling Blade (1996)']

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[6, 'Harry Potter and the Prisoner of Azkaban (2004)']

[6, 'Harry Potter and the Chamber of Secrets (2002)']

[6, 'Harry Potter and the Goblet of Fire (2005)']

[6, 'Harry Potter and the Order of the Phoenix (2007)']

[6, 'Harry Potter and the Half-Blood Prince (2009)']

[6, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[6, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[6, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[7, 'Psycho (1960)']

[7, 'Rear Window (1954)']

[7, 'Chinatown (1974)']

[7, 'North by Northwest (1959)']

[7, 'Vertigo (1958)']

[7, 'Maltese Falcon, The (1941)']

[7, 'Birds, The (1963)']

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[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Star Wars: Episode I - The Phantom Menace (1999)']

[8, 'Star Wars: Episode II - Attack of the Clones (2002)']

[8, 'Star Wars: Episode III - Revenge of the Sith (2005)']

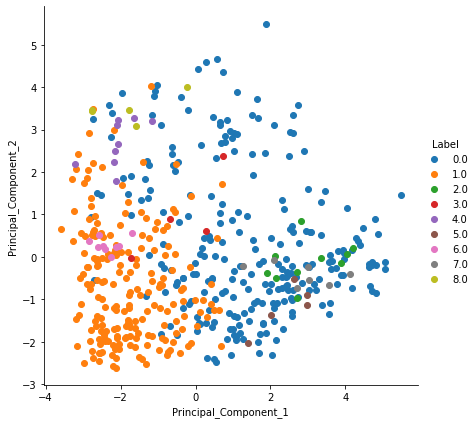
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.01947467293668299

Davies-Bouldin Index: 1.8454385685890589

Calinski-Harabasz Score: 14.515473041060218

Test 43

Test type: DBScan

Parameters: Radius epsilon = 4.0 Min samples n = 5

Estimated number of clusters: 8

Estimated number of noise points: 227

(500,) (500,)

-1 356.0

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[0, 'Matrix, The (1999)']

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[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Usual Suspects, The (1995)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'American Beauty (1999)']

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[0, 'Reservoir Dogs (1992)']

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[0, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[0, 'Godfather: Part II, The (1974)']

[0, 'Kill Bill: Vol. 1 (2003)']

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[0, 'American History X (1998)']

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[0, 'Trainspotting (1996)']

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[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

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[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

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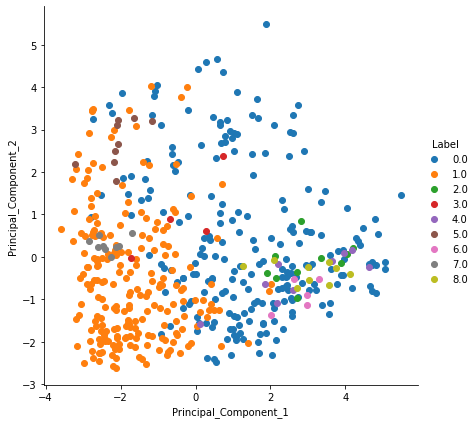
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.009731511360288998

Davies-Bouldin Index: 1.979010340031705

Calinski-Harabasz Score: 14.754161161888874

Test 44

Test type: DBScan

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Estimated number of clusters: 11

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(500,) (500,)

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[1, 'While You Were Sleeping (1995)']

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[2, 'Hotel Rwanda (2004)']

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[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[8, 'Rear Window (1954)']

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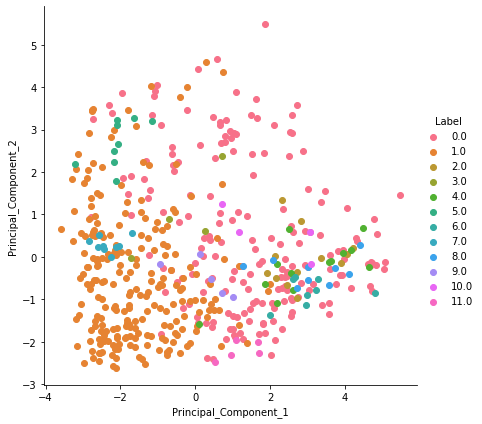
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.03404114486372151

Davies-Bouldin Index: 2.024308854834269

Calinski-Harabasz Score: 12.31145156936078

Test 45

Test type: DBScan

Parameters: Radius epsilon = 4.200000000000001 Min samples n = 5

Estimated number of clusters: 7

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(500,) (500,)

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[0, 'Lawrence of Arabia (1962)']

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[0, 'Planet of the Apes (1968)']

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[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Highlander (1986)']

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[1, 'Star Wars: Episode IV - A New Hope (1977)']

[1, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[1, 'Toy Story (1995)']

[1, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[1, 'Fugitive, The (1993)']

[1, 'Independence Day (a.k.a. ID4) (1996)']

[1, 'Batman (1989)']

[1, 'Aladdin (1992)']

[1, 'Lion King, The (1994)']

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[1, 'Men in Black (a.k.a. MIB) (1997)']

[1, 'Good Will Hunting (1997)']

[1, 'Indiana Jones and the Last Crusade (1989)']

[1, 'Monty Python and the Holy Grail (1975)']

[1, 'Groundhog Day (1993)']

[1, 'Ace Ventura: Pet Detective (1994)']

[1, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[1, 'Mission: Impossible (1996)']

[1, 'Die Hard (1988)']

[1, "One Flew Over the Cuckoo's Nest (1975)"]

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'Mask, The (1994)']

[1, 'Monsters, Inc. (2001)']

[1, 'Pretty Woman (1990)']

[1, 'Mrs. Doubtfire (1993)']

[1, 'Die Hard: With a Vengeance (1995)']

[1, 'X-Men (2000)']

[1, 'Rock, The (1996)']

[1, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[1, 'Star Wars: Episode I - The Phantom Menace (1999)']

[1, "Ocean's Eleven (2001)"]

[1, 'Beautiful Mind, A (2001)']

[1, 'Babe (1995)']

[1, 'Batman Forever (1995)']

[1, 'Twister (1996)']

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[1, 'Batman Begins (2005)']

[1, 'Incredibles, The (2004)']

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[1, 'Ghost (1990)']

[1, 'GoldenEye (1995)']

[1, 'Sleepless in Seattle (1993)']

[1, 'Willy Wonka & the Chocolate Factory (1971)']

[1, 'Rain Man (1988)']

[1, 'Clear and Present Danger (1994)']

[1, 'Waterworld (1995)']

[1, "Ferris Bueller's Day Off (1986)"]

[1, 'Four Weddings and a Funeral (1994)']

[1, 'Toy Story 2 (1999)']

[1, 'Clueless (1995)']

[1, 'Iron Man (2008)']

[1, "There's Something About Mary (1998)"]

[1, 'Up (2009)']

[1, 'Dead Poets Society (1989)']

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

[1, 'American Pie (1999)']

[1, 'Outbreak (1995)']

[1, 'Wizard of Oz, The (1939)']

[1, 'Star Trek: Generations (1994)']

[1, 'Indiana Jones and the Temple of Doom (1984)']

[1, 'Jumanji (1995)']

[1, 'Firm, The (1993)']

[1, 'Breakfast Club, The (1985)']

[1, 'Shakespeare in Love (1998)']

[1, 'Austin Powers: International Man of Mystery (1997)']

[1, 'As Good as It Gets (1997)']

[1, 'Cliffhanger (1993)']

[1, 'When Harry Met Sally... (1989)']

[1, 'Net, The (1995)']

[1, 'Back to the Future Part II (1989)']

[1, 'Jerry Maguire (1996)']

[1, 'Stand by Me (1986)']

[1, 'Armageddon (1998)']

[1, "Monty Python's Life of Brian (1979)"]

[1, "Bug's Life, A (1998)"]

[1, 'Crimson Tide (1995)']

[1, 'Hunt for Red October, The (1990)']

[1, 'While You Were Sleeping (1995)']

[1, 'Back to the Future Part III (1990)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Star Wars: Episode II - Attack of the Clones (2002)']

[1, 'Birdcage, The (1996)']

[1, 'Spider-Man 2 (2004)']

[1, 'Broken Arrow (1996)']

[1, 'Airplane! (1980)']

[1, 'Bourne Ultimatum, The (2007)']

[1, 'Blues Brothers, The (1980)']

[1, 'Casino Royale (2006)']

[1, 'Top Gun (1986)']

[1, 'Big (1988)']

[1, 'Shrek 2 (2004)']

[1, 'Face/Off (1997)']

[1, 'Bourne Supremacy, The (2004)']

[1, 'Meet the Parents (2000)']

[1, 'X2: X-Men United (2003)']

[1, 'Almost Famous (2000)']

[1, 'Sense and Sensibility (1995)']

[1, 'Blair Witch Project, The (1999)']

[1, 'Star Trek: First Contact (1996)']

[1, 'Happy Gilmore (1996)']

[1, 'Ratatouille (2007)']

[1, 'Nutty Professor, The (1996)']

[1, 'Mummy, The (1999)']

[1, 'Citizen Kane (1941)']

[1, 'Quiz Show (1994)']

[1, 'Lethal Weapon (1987)']

[1, 'Liar Liar (1997)']

[1, 'Chicken Run (2000)']

[1, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[1, 'No Country for Old Men (2007)']

[1, 'Mission: Impossible II (2000)']

[1, "Mr. Holland's Opus (1995)"]

[1, 'Ice Age (2002)']

[1, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[1, 'Erin Brockovich (2000)']

[1, 'Demolition Man (1993)']

[1, 'In the Line of Fire (1993)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, "Charlie's Angels (2000)"]

[1, 'Dave (1993)']

[1, 'Addams Family Values (1993)']

[1, 'Mars Attacks! (1996)']

[1, 'South Park: Bigger, Longer and Uncut (1999)']

[1, 'Avengers, The (2012)']

[1, 'Abyss, The (1989)']

[1, 'American President, The (1995)']

[1, 'Rocky (1976)']

[1, 'Scream (1996)']

[1, 'This Is Spinal Tap (1984)']

[1, 'Die Hard 2 (1990)']

[1, 'Maverick (1994)']

[1, 'Hangover, The (2009)']

[1, 'Guardians of the Galaxy (2014)']

[1, 'Crow, The (1994)']

[1, 'Grease (1978)']

[1, 'Honey, I Shrunk the Kids (1989)']

[1, 'Star Trek (2009)']

[1, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[1, 'Lost World: Jurassic Park, The (1997)']

[1, 'Star Trek II: The Wrath of Khan (1982)']

[1, 'Santa Clause, The (1994)']

[1, 'Sting, The (1973)']

[1, 'Young Frankenstein (1974)']

[1, 'Enemy of the State (1998)']

[1, 'Eraser (1996)']

[1, "It's a Wonderful Life (1946)"]

[1, 'Wallace & Gromit: The Wrong Trousers (1993)']

[1, 'Butch Cassidy and the Sundance Kid (1969)']

[1, 'Sound of Music, The (1965)']

[1, 'Bruce Almighty (2003)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Con Air (1997)']

[1, "Bridget Jones's Diary (2001)"]

[1, 'Full Monty, The (1997)']

[1, 'Unforgiven (1992)']

[1, 'Judge Dredd (1995)']

[1, 'English Patient, The (1996)']

[1, 'Superman (1978)']

[1, 'Air Force One (1997)']

[1, '40-Year-Old Virgin, The (2005)']

[1, 'Client, The (1994)']

[1, 'Gone with the Wind (1939)']

[1, 'Galaxy Quest (1999)']

[1, 'Cable Guy, The (1996)']

[1, 'Toy Story 3 (2010)']

[1, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[1, 'Tombstone (1993)']

[1, 'Notting Hill (1999)']

[1, 'Million Dollar Baby (2004)']

[1, 'Robin Hood: Men in Tights (1993)']

[1, 'Moulin Rouge (2001)']

[1, 'Desperado (1995)']

[1, 'School of Rock (2003)']

[1, 'From Dusk Till Dawn (1996)']

[1, "Wayne's World (1992)"]

[1, 'Wedding Singer, The (1998)']

[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Beverly Hills Cop III (1994)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'Congo (1995)']

[1, 'Mask of Zorro, The (1998)']

[1, 'Ransom (1996)']

[1, 'My Cousin Vinny (1992)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Alien³ (a.k.a. Alien 3) (1992)']

[1, 'Signs (2002)']

[1, 'Talented Mr. Ripley, The (1999)']

[1, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[1, '10 Things I Hate About You (1999)']

[1, 'Dragonheart (1996)']

[1, 'Love Actually (2003)']

[1, 'Inside Out (2015)']

[1, "The Devil's Advocate (1997)"]

[1, 'Pocahontas (1995)']

[1, 'Gran Torino (2008)']

[1, 'Italian Job, The (2003)']

[1, 'Batman Returns (1992)']

[1, 'Others, The (2001)']

[1, 'Coneheads (1993)']

[1, 'Lethal Weapon 2 (1989)']

[1, 'Romancing the Stone (1984)']

[1, 'Last Action Hero (1993)']

[1, 'Much Ado About Nothing (1993)']

[1, 'Superbad (2007)']

[1, 'Blade (1998)']

[1, 'Species (1995)']

[1, 'Christmas Story, A (1983)']

[1, 'Hot Shots! Part Deux (1993)']

[1, 'Mr. & Mrs. Smith (2005)']

[1, 'Arachnophobia (1990)']

[1, 'Bad Boys (1995)']

[1, 'My Big Fat Greek Wedding (2002)']

[1, 'Intouchables (2011)']

[1, 'Pinocchio (1940)']

[1, 'Ring, The (2002)']

[1, 'Chocolat (2000)']

[1, 'Sling Blade (1996)']

[1, 'Star Wars: Episode VII - The Force Awakens (2015)']

[1, "You've Got Mail (1998)"]

[1, 'Casper (1995)']

[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Spaceballs (1987)']

[1, 'Charlie and the Chocolate Factory (2005)']

[1, 'Legally Blonde (2001)']

[1, 'Phenomenon (1996)']

[1, 'Edge of Tomorrow (2014)']

[1, 'Miss Congeniality (2000)']

[1, 'Field of Dreams (1989)']

[1, 'Tomorrow Never Dies (1997)']

[1, 'Fantasia (1940)']

[1, 'Wallace & Gromit: A Close Shave (1995)']

[1, 'Johnny Mnemonic (1995)']

[1, 'Sabrina (1995)']

[1, 'Goldfinger (1964)']

[1, 'Three Musketeers, The (1993)']

[1, 'Crocodile Dundee (1986)']

[1, 'Dirty Dancing (1987)']

[1, 'Serenity (2005)']

[1, 'Thelma & Louise (1991)']

[1, 'Goonies, The (1985)']

[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, 'Sneakers (1992)']

[1, 'Iron Man 2 (2010)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Wild Wild West (1999)']

[1, 'Rush Hour (1998)']

[1, 'Father of the Bride Part II (1995)']

[1, 'Deep Impact (1998)']

[1, 'Thomas Crown Affair, The (1999)']

[1, 'Rob Roy (1995)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, 'Some Like It Hot (1959)']

[1, 'Cool Hand Luke (1967)']

[1, 'Alien: Resurrection (1997)']

[1, 'Animal House (1978)']

[1, 'Beverly Hills Cop (1984)']

[1, '(500) Days of Summer (2009)']

[1, 'Scary Movie (2000)']

[1, 'Gone in 60 Seconds (2000)']

[1, 'X-Files: Fight the Future, The (1998)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'Crying Game, The (1992)']

[1, 'Crash (2004)']

[1, 'French Kiss (1995)']

[1, 'Taken (2008)']

[1, "Pirates of the Caribbean: At World's End (2007)"]

[1, 'Blazing Saddles (1974)']

[1, 'First Knight (1995)']

[1, 'Executive Decision (1996)']

[1, 'Kung Fu Panda (2008)']

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[2, 'Silence of the Lambs, The (1991)']

[2, 'Usual Suspects, The (1995)']

[2, 'Godfather, The (1972)']

[2, 'Seven (a.k.a. Se7en) (1995)']

[2, 'Memento (2000)']

[2, 'Goodfellas (1990)']

[2, 'Shining, The (1980)']

[2, 'L.A. Confidential (1997)']

[2, 'Departed, The (2006)']

[2, 'Heat (1995)']

[2, 'Get Shorty (1995)']

[2, 'Psycho (1960)']

[2, 'Rear Window (1954)']

[2, 'Lock, Stock & Two Smoking Barrels (1998)']

[2, 'Casino (1995)']

[2, 'Chinatown (1974)']

[2, 'North by Northwest (1959)']

[2, 'Untouchables, The (1987)']

[2, 'Vertigo (1958)']

[2, 'True Romance (1993)']

[2, 'Scarface (1983)']

[2, 'Gone Girl (2014)']

[2, 'Jackie Brown (1997)']

[2, 'Maltese Falcon, The (1941)']

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[3, "Schindler's List (1993)"]

[3, 'Braveheart (1995)']

[3, 'Saving Private Ryan (1998)']

[3, 'Dances with Wolves (1990)']

[3, 'Titanic (1997)']

[3, 'Apocalypse Now (1979)']

[3, 'Full Metal Jacket (1987)']

[3, 'Pianist, The (2002)']

[3, 'Platoon (1986)']

[3, 'Legends of the Fall (1994)']

[3, 'Patriot, The (2000)']

[3, 'Boot, Das (Boat, The) (1981)']

[3, 'Black Hawk Down (2001)']

[3, 'Bridge on the River Kwai, The (1957)']

[3, 'Blood Diamond (2006)']

[3, 'Last of the Mohicans, The (1992)']

[3, 'Three Kings (1999)']

[3, 'Glory (1989)']

[3, 'Hotel Rwanda (2004)']

[3, 'Deer Hunter, The (1978)']

[3, 'Great Escape, The (1963)']

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[4, 'Fargo (1996)']

[4, 'Big Lebowski, The (1998)']

[4, 'Clerks (1994)']

[4, 'O Brother, Where Art Thou? (2000)']

[4, 'Office Space (1999)']

[4, 'Fish Called Wanda, A (1988)']

[4, 'Shaun of the Dead (2004)']

[4, 'Raising Arizona (1987)']

[4, 'Hot Fuzz (2007)']

[4, 'Grosse Pointe Blank (1997)']

[4, 'Zombieland (2009)']

[4, 'Army of Darkness (1993)']

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[5, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[5, 'Harry Potter and the Prisoner of Azkaban (2004)']

[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[6, 'Sixth Sense, The (1999)']

[6, 'Prestige, The (2006)']

[6, 'Shutter Island (2010)']

[6, 'Game, The (1997)']

[6, 'Unbreakable (2000)']

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[7, 'High Fidelity (2000)']

[7, 'Annie Hall (1977)']

[7, 'Royal Tenenbaums, The (2001)']

[7, 'Rushmore (1998)']

[7, 'Election (1999)']

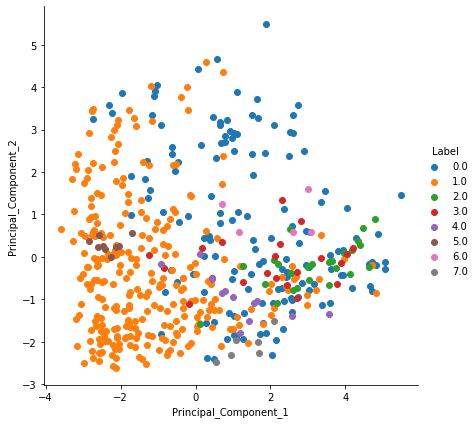
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: -0.016292223522907875

Davies-Bouldin Index: 2.3921266579452056

Calinski-Harabasz Score: 14.831488725347624

Test 46

Test type: DBScan

Parameters: Radius epsilon = 4.300000000000001 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 120

(500,) (500,)

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[0, 'Jurassic Park (1993)']

[0, 'Fight Club (1999)']

[0, 'Terminator 2: Judgment Day (1991)']

[0, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[0, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[0, 'American Beauty (1999)']

[0, 'Lord of the Rings: The Two Towers, The (2002)']

[0, 'Lord of the Rings: The Return of the King, The (2003)']

[0, 'Back to the Future (1985)']

[0, 'Apollo 13 (1995)']

[0, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

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[0, 'Alien (1979)']

[0, 'E.T. the Extra-Terrestrial (1982)']

[0, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[0, 'Godfather: Part II, The (1974)']

[0, 'Kill Bill: Vol. 1 (2003)']

[0, 'Truman Show, The (1998)']

[0, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[0, 'Eternal Sunshine of the Spotless Mind (2004)']

[0, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[0, 'Aliens (1986)']

[0, 'Green Mile, The (1999)']

[0, 'Minority Report (2002)']

[0, 'Being John Malkovich (1999)']

[0, 'Clockwork Orange, A (1971)']

[0, 'Taxi Driver (1976)']

[0, '2001: A Space Odyssey (1968)']

[0, 'Trainspotting (1996)']

[0, 'Kill Bill: Vol. 2 (2004)']

[0, 'Catch Me If You Can (2002)']

[0, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[0, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[0, 'WALL·E (2008)']

[0, 'Donnie Darko (2001)']

[0, 'Casablanca (1942)']

[0, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[0, 'V for Vendetta (2006)']

[0, 'Avatar (2009)']

[0, 'Jaws (1975)']

[0, 'Edward Scissorhands (1990)']

[0, 'Natural Born Killers (1994)']

[0, 'Inglourious Basterds (2009)']

[0, 'Matrix Reloaded, The (2003)']

[0, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[0, 'Interstellar (2014)']

[0, 'Total Recall (1990)']

[0, 'Sin City (2005)']

[0, 'Requiem for a Dream (2000)']

[0, 'Nightmare Before Christmas, The (1993)']

[0, 'Who Framed Roger Rabbit? (1988)']

[0, 'Gattaca (1997)']

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[0, 'Beetlejuice (1988)']

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[0, 'Philadelphia (1993)']

[0, 'City of God (Cidade de Deus) (2002)']

[0, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[0, 'Slumdog Millionaire (2008)']

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[0, 'To Kill a Mockingbird (1962)']

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[0, 'Planet of the Apes (1968)']

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[0, 'Watchmen (2009)']

[0, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[0, 'Illusionist, The (2006)']

[0, 'Terminator 3: Rise of the Machines (2003)']

[0, 'Highlander (1986)']

--------- NEW CLUSTER -----------

[1, 'Shawshank Redemption, The (1994)']

[1, 'Pulp Fiction (1994)']

[1, 'Silence of the Lambs, The (1991)']

[1, 'Star Wars: Episode IV - A New Hope (1977)']

[1, "Schindler's List (1993)"]

[1, 'Braveheart (1995)']

[1, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[1, 'Toy Story (1995)']

[1, 'Usual Suspects, The (1995)']

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[1, 'Austin Powers: International Man of Mystery (1997)']

[1, 'As Good as It Gets (1997)']

[1, 'Cliffhanger (1993)']

[1, 'When Harry Met Sally... (1989)']

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[1, 'Harry Potter and the Prisoner of Azkaban (2004)']

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[1, 'Hunt for Red October, The (1990)']

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[1, 'Casper (1995)']

[1, 'Star Trek IV: The Voyage Home (1986)']

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[1, 'Garden State (2004)']

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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.07612814451213214

Davies-Bouldin Index: 3.9909969886452306

Calinski-Harabasz Score: 23.292547661022617

Test 47

Test type: DBScan

Parameters: Radius epsilon = 4.4 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 89

(500,) (500,)

0 356.0

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[0, 'V for Vendetta (2006)']

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[0, 'Natural Born Killers (1994)']

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[0, 'City of God (Cidade de Deus) (2002)']

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[0, 'Run Lola Run (Lola rennt) (1998)']

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[1, 'Requiem for a Dream (2000)']

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[1, 'Santa Clause, The (1994)']

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[1, 'Raising Arizona (1987)']

[1, 'Enemy of the State (1998)']

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[1, '10 Things I Hate About You (1999)']

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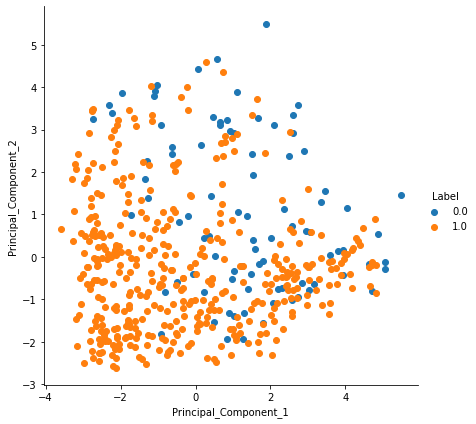
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(500, 170) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.07665891186867345

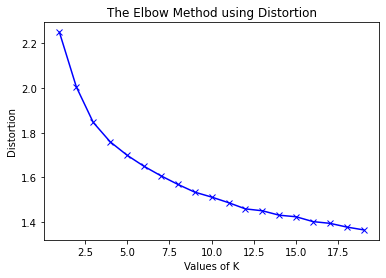
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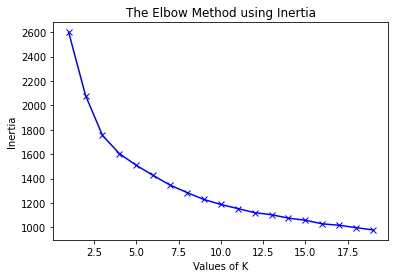
Calinski-Harabasz Score: 17.088964222527114

With Low Variance Reduction

(500, 1128) to (500, 70)

ELBOW GRAPH:





Running regular KMeans on range

Test 48

Test type: KMeans

Parameters: Num Clusters i = 6

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[0, 'Godfather: Part II, The (1974)']

[0, 'Kill Bill: Vol. 1 (2003)']

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[0, 'Full Metal Jacket (1987)']

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[1, 'Sneakers (1992)']

[1, 'Some Like It Hot (1959)']

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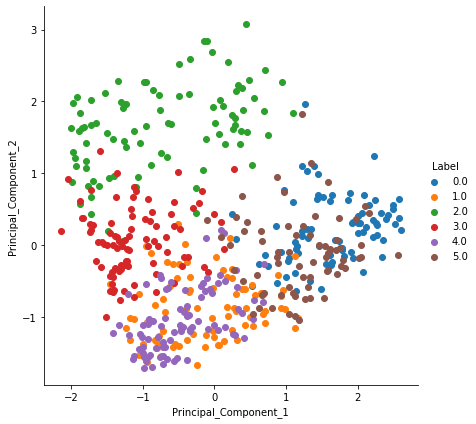
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.14082595751489257

Davies-Bouldin Index: 1.9801346587079494

Calinski-Harabasz Score: 81.10444806531027

Test 49

Test type: KMeans

Parameters: Num Clusters i = 7

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[3, 'Shrek (2001)']

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[6, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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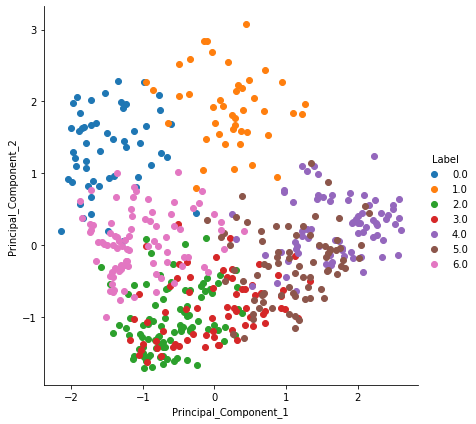
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.147209640092718

Davies-Bouldin Index: 1.9438220337690024

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Test 50

Test type: KMeans

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[3, 'Being John Malkovich (1999)']

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[3, 'Kill Bill: Vol. 2 (2004)']

[3, 'L.A. Confidential (1997)']

[3, 'Donnie Darko (2001)']

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[3, 'Apocalypse Now (1979)']

[3, 'Full Metal Jacket (1987)']

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[3, 'Natural Born Killers (1994)']

[3, 'Inglourious Basterds (2009)']

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[3, 'Sin City (2005)']

[3, 'Psycho (1960)']

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[3, 'Rear Window (1954)']

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[3, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[3, 'Lock, Stock & Two Smoking Barrels (1998)']

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[3, 'Chinatown (1974)']

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[3, 'Platoon (1986)']

[3, '12 Angry Men (1957)']

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[3, 'True Romance (1993)']

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[3, 'Exorcist, The (1973)']

[3, 'Scarface (1983)']

[3, 'Unforgiven (1992)']

[3, 'Boogie Nights (1997)']

[3, 'Black Swan (2010)']

[3, 'Seven Samurai (Shichinin no samurai) (1954)']

[3, 'Princess Mononoke (Mononoke-hime) (1997)']

[3, 'Grand Budapest Hotel, The (2014)']

[3, 'Gone Girl (2014)']

[3, 'Magnolia (1999)']

[3, 'American Psycho (2000)']

[3, 'Mulholland Drive (2001)']

[3, 'Jackie Brown (1997)']

[3, 'Maltese Falcon, The (1941)']

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[3, 'Birds, The (1963)']

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[4, 'Independence Day (a.k.a. ID4) (1996)']

[4, 'Men in Black (a.k.a. MIB) (1997)']

[4, 'Fifth Element, The (1997)']

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[4, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[4, 'Star Wars: Episode I - The Phantom Menace (1999)']

[4, 'Stargate (1994)']

[4, 'Waterworld (1995)']

[4, 'Iron Man (2008)']

[4, 'Star Trek: Generations (1994)']

[4, 'Matrix Reloaded, The (2003)']

[4, 'Back to the Future Part II (1989)']

[4, 'Armageddon (1998)']

[4, 'Total Recall (1990)']

[4, 'Back to the Future Part III (1990)']

[4, 'Contact (1997)']

[4, 'Star Wars: Episode II - Attack of the Clones (2002)']

[4, 'X2: X-Men United (2003)']

[4, 'Star Trek: First Contact (1996)']

[4, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[4, 'Demolition Man (1993)']

[4, 'Matrix Revolutions, The (2003)']

[4, 'Mars Attacks! (1996)']

[4, 'Avengers, The (2012)']

[4, 'I, Robot (2004)']

[4, 'Starship Troopers (1997)']

[4, 'Predator (1987)']

[4, 'Guardians of the Galaxy (2014)']

[4, 'Star Trek (2009)']

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[4, 'The Butterfly Effect (2004)']

[4, 'RoboCop (1987)']

[4, 'Judge Dredd (1995)']

[4, 'Superman (1978)']

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[4, 'A.I. Artificial Intelligence (2001)']

[4, 'Alien³ (a.k.a. Alien 3) (1992)']

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[4, 'The Hunger Games (2012)']

[4, 'Species (1995)']

[4, 'Star Wars: Episode VII - The Force Awakens (2015)']

[4, 'Star Trek IV: The Voyage Home (1986)']

[4, 'Edge of Tomorrow (2014)']

[4, 'Johnny Mnemonic (1995)']

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[4, 'Terminator 3: Rise of the Machines (2003)']

[4, 'Alien: Resurrection (1997)']

[4, 'X-Files: Fight the Future, The (1998)']

[4, 'Highlander (1986)']

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[5, 'Pretty Woman (1990)']

[5, 'Mrs. Doubtfire (1993)']

[5, 'Babe (1995)']

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[5, 'Sleepless in Seattle (1993)']

[5, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[5, 'Four Weddings and a Funeral (1994)']

[5, 'Clueless (1995)']

[5, 'Firm, The (1993)']

[5, 'When Harry Met Sally... (1989)']

[5, 'While You Were Sleeping (1995)']

[5, 'Birdcage, The (1996)']

[5, 'Sense and Sensibility (1995)']

[5, 'Blair Witch Project, The (1999)']

[5, 'Quiz Show (1994)']

[5, "Mr. Holland's Opus (1995)"]

[5, 'Erin Brockovich (2000)']

[5, 'Snow White and the Seven Dwarfs (1937)']

[5, 'Dave (1993)']

[5, 'Addams Family Values (1993)']

[5, "What's Eating Gilbert Grape (1993)"]

[5, 'American President, The (1995)']

[5, 'Grease (1978)']

[5, 'Eyes Wide Shut (1999)']

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[5, 'Sound of Music, The (1965)']

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[5, 'Moulin Rouge (2001)']

[5, 'Wedding Singer, The (1998)']

[5, 'Truth About Cats & Dogs, The (1996)']

[5, 'Talented Mr. Ripley, The (1999)']

[5, '10 Things I Hate About You (1999)']

[5, 'Bowling for Columbine (2002)']

[5, 'Love Actually (2003)']

[5, "The Devil's Advocate (1997)"]

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[5, 'Much Ado About Nothing (1993)']

[5, 'Arachnophobia (1990)']

[5, 'My Big Fat Greek Wedding (2002)']

[5, 'Ring, The (2002)']

[5, 'Chocolat (2000)']

[5, "You've Got Mail (1998)"]

[5, 'Legally Blonde (2001)']

[5, 'Phenomenon (1996)']

[5, 'Miss Congeniality (2000)']

[5, 'Fantasia (1940)']

[5, 'Sabrina (1995)']

[5, 'Dirty Dancing (1987)']

[5, 'Thelma & Louise (1991)']

[5, 'Grumpier Old Men (1995)']

[5, "City Slickers II: The Legend of Curly's Gold (1994)"]

[5, 'Father of the Bride Part II (1995)']

[5, 'Rob Roy (1995)']

[5, 'Disclosure (1994)']

[5, 'What Women Want (2000)']

[5, '(500) Days of Summer (2009)']

[5, 'Crying Game, The (1992)']

[5, 'French Kiss (1995)']

[5, 'First Knight (1995)']

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[6, 'Toy Story (1995)']

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[6, 'Lion King, The (1994)']

[6, 'Shrek (2001)']

[6, 'Princess Bride, The (1987)']

[6, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[6, 'Beauty and the Beast (1991)']

[6, 'Finding Nemo (2003)']

[6, 'Monsters, Inc. (2001)']

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[6, 'Home Alone (1990)']

[6, 'Willy Wonka & the Chocolate Factory (1971)']

[6, 'Toy Story 2 (1999)']

[6, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[6, 'Up (2009)']

[6, 'Wizard of Oz, The (1939)']

[6, 'Jumanji (1995)']

[6, 'Harry Potter and the Prisoner of Azkaban (2004)']

[6, "Bug's Life, A (1998)"]

[6, 'Harry Potter and the Chamber of Secrets (2002)']

[6, 'Nightmare Before Christmas, The (1993)']

[6, 'Who Framed Roger Rabbit? (1988)']

[6, 'Big (1988)']

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[6, 'Ratatouille (2007)']

[6, 'Harry Potter and the Goblet of Fire (2005)']

[6, 'Chicken Run (2000)']

[6, 'Ice Age (2002)']

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[6, 'Harry Potter and the Order of the Phoenix (2007)']

[6, 'Harry Potter and the Half-Blood Prince (2009)']

[6, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[6, 'How to Train Your Dragon (2010)']

[6, 'Dragonheart (1996)']

[6, 'Pleasantville (1998)']

[6, 'Inside Out (2015)']

[6, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[6, 'Pinocchio (1940)']

[6, 'Casper (1995)']

[6, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[6, 'Charlie and the Chocolate Factory (2005)']

[6, 'Goonies, The (1985)']

[6, 'Gremlins (1984)']

[6, 'Kung Fu Panda (2008)']

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[7, 'Forrest Gump (1994)']

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[7, "Schindler's List (1993)"]

[7, 'Braveheart (1995)']

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[7, 'Good Will Hunting (1997)']

[7, 'Titanic (1997)']

[7, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[7, 'Truman Show, The (1998)']

[7, 'Beautiful Mind, A (2001)']

[7, 'Green Mile, The (1999)']

[7, 'Catch Me If You Can (2002)']

[7, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[7, 'Rain Man (1988)']

[7, 'Casablanca (1942)']

[7, 'Cast Away (2000)']

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[7, 'Life Is Beautiful (La Vita è bella) (1997)']

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[7, 'As Good as It Gets (1997)']

[7, 'Jerry Maguire (1996)']

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[7, 'Few Good Men, A (1992)']

[7, 'To Kill a Mockingbird (1962)']

[7, 'Legends of the Fall (1994)']

[7, 'Last Samurai, The (2003)']

[7, 'Ed Wood (1994)']

[7, 'The Imitation Game (2014)']

[7, "It's a Wonderful Life (1946)"]

[7, 'English Patient, The (1996)']

[7, 'Gone with the Wind (1939)']

[7, "King's Speech, The (2010)"]

[7, 'Million Dollar Baby (2004)']

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[7, 'Boot, Das (Boat, The) (1981)']

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[7, 'Gran Torino (2008)']

[7, 'Others, The (2001)']

[7, 'Lawrence of Arabia (1962)']

[7, 'Intouchables (2011)']

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[7, 'Bridge on the River Kwai, The (1957)']

[7, 'Field of Dreams (1989)']

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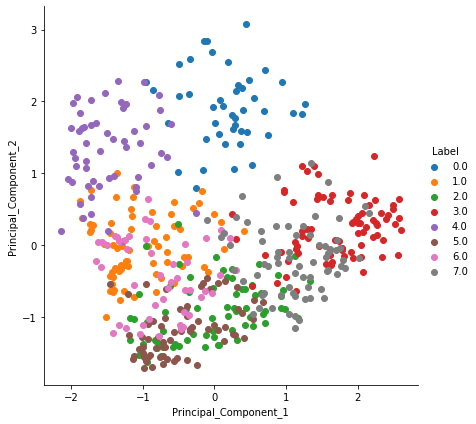
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(500, 70) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.150851837190955

Davies-Bouldin Index: 1.877758086707042

Calinski-Harabasz Score: 72.0455396987367

Test 51

Test type: KMeans

Parameters: Num Clusters i = 9

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[1, 'Mask, The (1994)']

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[1, 'Sleepless in Seattle (1993)']

[1, 'Four Weddings and a Funeral (1994)']

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[1, 'Firm, The (1993)']

[1, 'When Harry Met Sally... (1989)']

[1, 'While You Were Sleeping (1995)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Birdcage, The (1996)']

[1, 'Meet the Parents (2000)']

[1, 'Sense and Sensibility (1995)']

[1, 'Blair Witch Project, The (1999)']

[1, 'Happy Gilmore (1996)']

[1, 'Nutty Professor, The (1996)']

[1, 'Liar Liar (1997)']

[1, "Mr. Holland's Opus (1995)"]

[1, 'Dave (1993)']

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[1, "What's Eating Gilbert Grape (1993)"]

[1, 'American President, The (1995)']

[1, 'Scream (1996)']

[1, 'Grease (1978)']

[1, 'Sound of Music, The (1965)']

[1, 'Bruce Almighty (2003)']

[1, "Bridget Jones's Diary (2001)"]

[1, 'Full Monty, The (1997)']

[1, 'Client, The (1994)']

[1, 'Cable Guy, The (1996)']

[1, 'Notting Hill (1999)']

[1, 'Robin Hood: Men in Tights (1993)']

[1, 'School of Rock (2003)']

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[1, 'Naked Gun 33 1/3: The Final Insult (1994)']

[1, 'Beverly Hills Cop III (1994)']

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[1, 'Love Actually (2003)']

[1, 'Pocahontas (1995)']

[1, 'Rocky Horror Picture Show, The (1975)']

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[1, 'Miss Congeniality (2000)']

[1, 'Sabrina (1995)']

[1, 'Dirty Dancing (1987)']

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[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Father of the Bride Part II (1995)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, 'Scary Movie (2000)']

[1, 'So I Married an Axe Murderer (1993)']

[1, 'Crying Game, The (1992)']

[1, 'French Kiss (1995)']

[1, 'First Knight (1995)']

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[2, 'Fugitive, The (1993)']

[2, 'Batman (1989)']

[2, 'True Lies (1994)']

[2, 'Speed (1994)']

[2, 'Indiana Jones and the Last Crusade (1989)']

[2, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[2, 'Mission: Impossible (1996)']

[2, 'Die Hard (1988)']

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[2, "Ocean's Eleven (2001)"]

[2, 'Batman Forever (1995)']

[2, 'Twister (1996)']

[2, 'Spider-Man (2002)']

[2, 'Bourne Identity, The (2002)']

[2, 'GoldenEye (1995)']

[2, 'Clear and Present Danger (1994)']

[2, 'Outbreak (1995)']

[2, 'Indiana Jones and the Temple of Doom (1984)']

[2, 'Cliffhanger (1993)']

[2, 'Net, The (1995)']

[2, 'Crimson Tide (1995)']

[2, 'Hunt for Red October, The (1990)']

[2, 'Spider-Man 2 (2004)']

[2, 'Broken Arrow (1996)']

[2, 'Bourne Ultimatum, The (2007)']

[2, 'Casino Royale (2006)']

[2, 'Top Gun (1986)']

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[2, 'Lethal Weapon (1987)']

[2, 'Mission: Impossible II (2000)']

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[2, "Charlie's Angels (2000)"]

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[2, 'Blade (1998)']

[2, 'Mr. & Mrs. Smith (2005)']

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[2, 'Three Musketeers, The (1993)']

[2, 'Crocodile Dundee (1986)']

[2, 'Sneakers (1992)']

[2, 'Rush Hour (1998)']

[2, 'Thomas Crown Affair, The (1999)']

[2, 'Beverly Hills Cop (1984)']

[2, 'Gone in 60 Seconds (2000)']

[2, 'Taken (2008)']

[2, "Pirates of the Caribbean: At World's End (2007)"]

[2, 'Executive Decision (1996)']

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[3, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[3, 'Truman Show, The (1998)']

[3, 'Eternal Sunshine of the Spotless Mind (2004)']

[3, 'Being John Malkovich (1999)']

[3, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[3, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[3, 'Donnie Darko (2001)']

[3, 'Edward Scissorhands (1990)']

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[3, 'Ed Wood (1994)']

[3, 'Sleepy Hollow (1999)']

[3, 'Moulin Rouge (2001)']

[3, 'Social Network, The (2010)']

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[3, 'Princess Mononoke (Mononoke-hime) (1997)']

[3, 'Grand Budapest Hotel, The (2014)']

[3, 'Magnolia (1999)']

[3, 'Ring, The (2002)']

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[3, 'Fantasia (1940)']

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[3, 'Birds, The (1963)']

[3, '(500) Days of Summer (2009)']

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[4, 'Matrix, The (1999)']

[4, 'Star Wars: Episode IV - A New Hope (1977)']

[4, 'Jurassic Park (1993)']

[4, 'Terminator 2: Judgment Day (1991)']

[4, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[4, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[4, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[4, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[4, 'Lord of the Rings: The Two Towers, The (2002)']

[4, 'Lord of the Rings: The Return of the King, The (2003)']

[4, 'Back to the Future (1985)']

[4, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[4, 'Gladiator (2000)']

[4, 'Dark Knight, The (2008)']

[4, 'Inception (2010)']

[4, 'Terminator, The (1984)']

[4, 'Blade Runner (1982)']

[4, 'Alien (1979)']

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[4, 'Batman Begins (2005)']

[4, 'Minority Report (2002)']

[4, '2001: A Space Odyssey (1968)']

[4, 'WALL·E (2008)']

[4, 'V for Vendetta (2006)']

[4, 'Avatar (2009)']

[4, 'Interstellar (2014)']

[4, 'Gattaca (1997)']

[4, 'Dark Knight Rises, The (2012)']

[4, '300 (2007)']

[4, 'District 9 (2009)']

[4, 'Abyss, The (1989)']

[4, 'The Martian (2015)']

[4, 'Brazil (1985)']

[4, 'Children of Men (2006)']

[4, 'Close Encounters of the Third Kind (1977)']

[4, 'Mad Max: Fury Road (2015)']

[4, 'Planet of the Apes (1968)']

[4, 'Ex Machina (2015)']

[4, 'Gravity (2013)']

[4, 'Dark City (1998)']

[4, 'Watchmen (2009)']

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[5, 'Pulp Fiction (1994)']

[5, 'Silence of the Lambs, The (1991)']

[5, 'Fight Club (1999)']

[5, 'Usual Suspects, The (1995)']

[5, 'American Beauty (1999)']

[5, 'Godfather, The (1972)']

[5, 'Seven (a.k.a. Se7en) (1995)']

[5, 'Fargo (1996)']

[5, 'Memento (2000)']

[5, "One Flew Over the Cuckoo's Nest (1975)"]

[5, 'Reservoir Dogs (1992)']

[5, 'Godfather: Part II, The (1974)']

[5, 'Kill Bill: Vol. 1 (2003)']

[5, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[5, 'Goodfellas (1990)']

[5, 'American History X (1998)']

[5, 'Shining, The (1980)']

[5, 'Clockwork Orange, A (1971)']

[5, 'Taxi Driver (1976)']

[5, 'Trainspotting (1996)']

[5, 'Kill Bill: Vol. 2 (2004)']

[5, 'L.A. Confidential (1997)']

[5, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[5, 'Apocalypse Now (1979)']

[5, 'Full Metal Jacket (1987)']

[5, 'Departed, The (2006)']

[5, 'Snatch (2000)']

[5, 'Heat (1995)']

[5, 'Jaws (1975)']

[5, 'Inglourious Basterds (2009)']

[5, 'Sin City (2005)']

[5, 'Psycho (1960)']

[5, 'Requiem for a Dream (2000)']

[5, 'Django Unchained (2012)']

[5, 'Rear Window (1954)']

[5, 'City of God (Cidade de Deus) (2002)']

[5, 'Graduate, The (1967)']

[5, 'No Country for Old Men (2007)']

[5, 'Casino (1995)']

[5, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[5, 'Chinatown (1974)']

[5, 'North by Northwest (1959)']

[5, 'Platoon (1986)']

[5, '12 Angry Men (1957)']

[5, 'Untouchables, The (1987)']

[5, 'Vertigo (1958)']

[5, 'Wolf of Wall Street, The (2013)']

[5, 'Sting, The (1973)']

[5, 'True Romance (1993)']

[5, 'Butch Cassidy and the Sundance Kid (1969)']

[5, 'Exorcist, The (1973)']

[5, 'Scarface (1983)']

[5, 'Unforgiven (1992)']

[5, 'Black Swan (2010)']

[5, 'Seven Samurai (Shichinin no samurai) (1954)']

[5, 'Gone Girl (2014)']

[5, 'Jackie Brown (1997)']

[5, 'Maltese Falcon, The (1941)']

[5, 'Old Boy (2003)']

[5, 'Mystic River (2003)']

[5, 'Cool Hand Luke (1967)']

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[6, 'Princess Bride, The (1987)']

[6, 'Monty Python and the Holy Grail (1975)']

[6, 'Groundhog Day (1993)']

[6, 'Ace Ventura: Pet Detective (1994)']

[6, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[6, 'Big Lebowski, The (1998)']

[6, "Ferris Bueller's Day Off (1986)"]

[6, "There's Something About Mary (1998)"]

[6, 'Austin Powers: The Spy Who Shagged Me (1999)']

[6, 'American Pie (1999)']

[6, 'Breakfast Club, The (1985)']

[6, 'Clerks (1994)']

[6, 'O Brother, Where Art Thou? (2000)']

[6, 'Austin Powers: International Man of Mystery (1997)']

[6, 'Office Space (1999)']

[6, "Monty Python's Life of Brian (1979)"]

[6, 'Get Shorty (1995)']

[6, 'Beetlejuice (1988)']

[6, 'Airplane! (1980)']

[6, 'Blues Brothers, The (1980)']

[6, 'Fish Called Wanda, A (1988)']

[6, 'Shaun of the Dead (2004)']

[6, 'Lock, Stock & Two Smoking Barrels (1998)']

[6, 'Little Miss Sunshine (2006)']

[6, 'Juno (2007)']

[6, 'South Park: Bigger, Longer and Uncut (1999)']

[6, 'Dogma (1999)']

[6, 'High Fidelity (2000)']

[6, 'This Is Spinal Tap (1984)']

[6, 'Hangover, The (2009)']

[6, 'Annie Hall (1977)']

[6, 'Royal Tenenbaums, The (2001)']

[6, 'Young Frankenstein (1974)']

[6, 'Raising Arizona (1987)']

[6, 'Wallace & Gromit: The Wrong Trousers (1993)']

[6, '40-Year-Old Virgin, The (2005)']

[6, 'Rushmore (1998)']

[6, 'Hot Fuzz (2007)']

[6, "Wayne's World (1992)"]

[6, 'Grosse Pointe Blank (1997)']

[6, 'Deadpool (2016)']

[6, 'My Cousin Vinny (1992)']

[6, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[6, 'Zombieland (2009)']

[6, 'Chasing Amy (1997)']

[6, 'Election (1999)']

[6, 'Superbad (2007)']

[6, 'Christmas Story, A (1983)']

[6, 'Spaceballs (1987)']

[6, 'Army of Darkness (1993)']

[6, 'Wallace & Gromit: A Close Shave (1995)']

[6, 'Good Morning, Vietnam (1987)']

[6, 'Three Kings (1999)']

[6, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[6, 'Some Like It Hot (1959)']

[6, 'Animal House (1978)']

[6, 'Blazing Saddles (1974)']

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[7, 'Toy Story (1995)']

[7, 'Aladdin (1992)']

[7, 'Lion King, The (1994)']

[7, 'Shrek (2001)']

[7, 'Beauty and the Beast (1991)']

[7, 'Finding Nemo (2003)']

[7, 'E.T. the Extra-Terrestrial (1982)']

[7, 'Monsters, Inc. (2001)']

[7, 'Babe (1995)']

[7, 'Incredibles, The (2004)']

[7, 'Home Alone (1990)']

[7, 'Willy Wonka & the Chocolate Factory (1971)']

[7, 'Toy Story 2 (1999)']

[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Up (2009)']

[7, 'Wizard of Oz, The (1939)']

[7, 'Jumanji (1995)']

[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, "Bug's Life, A (1998)"]

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Who Framed Roger Rabbit? (1988)']

[7, 'Big (1988)']

[7, 'Shrek 2 (2004)']

[7, 'Ratatouille (2007)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Chicken Run (2000)']

[7, 'Ice Age (2002)']

[7, 'Snow White and the Seven Dwarfs (1937)']

[7, 'Honey, I Shrunk the Kids (1989)']

[7, 'Santa Clause, The (1994)']

[7, 'Little Mermaid, The (1989)']

[7, 'Mary Poppins (1964)']

[7, 'Toy Story 3 (2010)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'How to Train Your Dragon (2010)']

[7, 'Dragonheart (1996)']

[7, 'Inside Out (2015)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Pinocchio (1940)']

[7, 'Casper (1995)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Charlie and the Chocolate Factory (2005)']

[7, 'Goonies, The (1985)']

[7, 'Gremlins (1984)']

[7, 'Kung Fu Panda (2008)']

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[8, 'Independence Day (a.k.a. ID4) (1996)']

[8, 'Men in Black (a.k.a. MIB) (1997)']

[8, 'Fifth Element, The (1997)']

[8, 'X-Men (2000)']

[8, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[8, 'Star Wars: Episode I - The Phantom Menace (1999)']

[8, 'Stargate (1994)']

[8, 'Waterworld (1995)']

[8, 'Iron Man (2008)']

[8, 'Star Trek: Generations (1994)']

[8, 'Matrix Reloaded, The (2003)']

[8, 'Back to the Future Part II (1989)']

[8, 'Armageddon (1998)']

[8, 'Total Recall (1990)']

[8, 'Back to the Future Part III (1990)']

[8, 'Contact (1997)']

[8, 'Star Wars: Episode II - Attack of the Clones (2002)']

[8, 'X2: X-Men United (2003)']

[8, 'Star Trek: First Contact (1996)']

[8, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[8, 'Demolition Man (1993)']

[8, 'Matrix Revolutions, The (2003)']

[8, 'Mars Attacks! (1996)']

[8, 'Avengers, The (2012)']

[8, 'I, Robot (2004)']

[8, 'Starship Troopers (1997)']

[8, 'Predator (1987)']

[8, 'Guardians of the Galaxy (2014)']

[8, 'Star Trek (2009)']

[8, 'Star Trek II: The Wrath of Khan (1982)']

[8, 'RoboCop (1987)']

[8, 'Judge Dredd (1995)']

[8, 'Superman (1978)']

[8, 'Galaxy Quest (1999)']

[8, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[8, 'I Am Legend (2007)']

[8, 'A.I. Artificial Intelligence (2001)']

[8, 'Alien³ (a.k.a. Alien 3) (1992)']

[8, 'Signs (2002)']

[8, 'The Hunger Games (2012)']

[8, 'Species (1995)']

[8, 'Star Wars: Episode VII - The Force Awakens (2015)']

[8, 'Star Trek IV: The Voyage Home (1986)']

[8, 'Edge of Tomorrow (2014)']

[8, 'Johnny Mnemonic (1995)']

[8, 'Serenity (2005)']

[8, 'Iron Man 2 (2010)']

[8, 'Wild Wild West (1999)']

[8, 'Deep Impact (1998)']

[8, 'Terminator 3: Rise of the Machines (2003)']

[8, 'Alien: Resurrection (1997)']

[8, 'X-Files: Fight the Future, The (1998)']

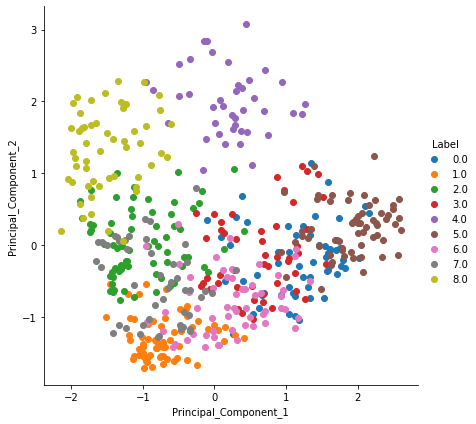
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.15376467038629954

Davies-Bouldin Index: 1.7972558090303583

Calinski-Harabasz Score: 68.43787591579742

Test 52

Test type: KMeans

Parameters: Num Clusters i = 10

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[0, 'Mad Max: Fury Road (2015)']

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[1, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[1, 'Being John Malkovich (1999)']

[1, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[1, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[1, 'Edward Scissorhands (1990)']

[1, 'Natural Born Killers (1994)']

[1, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[1, 'Nightmare Before Christmas, The (1993)']

[1, 'Lost in Translation (2003)']

[1, 'Leaving Las Vegas (1995)']

[1, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[1, 'Run Lola Run (Lola rennt) (1998)']

[1, 'Shutter Island (2010)']

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[1, 'Eyes Wide Shut (1999)']

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[1, 'Vertigo (1958)']

[1, 'Ed Wood (1994)']

[1, 'Sleepy Hollow (1999)']

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[1, 'Social Network, The (2010)']

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[1, 'Bowling for Columbine (2002)']

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[1, 'Watchmen (2009)']

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[1, 'Birds, The (1963)']

[1, '(500) Days of Summer (2009)']

[1, 'Garden State (2004)']

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[2, 'Pretty Woman (1990)']

[2, 'Ghost (1990)']

[2, 'Sleepless in Seattle (1993)']

[2, 'Four Weddings and a Funeral (1994)']

[2, 'Clueless (1995)']

[2, 'Outbreak (1995)']

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[2, 'When Harry Met Sally... (1989)']

[2, 'While You Were Sleeping (1995)']

[2, 'Birdcage, The (1996)']

[2, 'Sense and Sensibility (1995)']

[2, 'Blair Witch Project, The (1999)']

[2, 'Quiz Show (1994)']

[2, "Mr. Holland's Opus (1995)"]

[2, 'Erin Brockovich (2000)']

[2, 'Snow White and the Seven Dwarfs (1937)']

[2, 'Dave (1993)']

[2, 'Addams Family Values (1993)']

[2, "What's Eating Gilbert Grape (1993)"]

[2, 'American President, The (1995)']

[2, 'Grease (1978)']

[2, 'Sound of Music, The (1965)']

[2, 'Little Mermaid, The (1989)']

[2, "Bridget Jones's Diary (2001)"]

[2, 'Client, The (1994)']

[2, 'Notting Hill (1999)']

[2, 'Wedding Singer, The (1998)']

[2, 'Truth About Cats & Dogs, The (1996)']

[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, "The Devil's Advocate (1997)"]

[2, 'Pocahontas (1995)']

[2, 'Rocky Horror Picture Show, The (1975)']

[2, 'Coneheads (1993)']

[2, 'Much Ado About Nothing (1993)']

[2, 'Arachnophobia (1990)']

[2, 'My Big Fat Greek Wedding (2002)']

[2, 'Chocolat (2000)']

[2, "You've Got Mail (1998)"]

[2, 'Legally Blonde (2001)']

[2, 'Phenomenon (1996)']

[2, 'Miss Congeniality (2000)']

[2, 'Sabrina (1995)']

[2, 'Dirty Dancing (1987)']

[2, 'Thelma & Louise (1991)']

[2, 'Grumpier Old Men (1995)']

[2, "City Slickers II: The Legend of Curly's Gold (1994)"]

[2, 'Father of the Bride Part II (1995)']

[2, 'Rob Roy (1995)']

[2, 'Disclosure (1994)']

[2, 'What Women Want (2000)']

[2, 'Crying Game, The (1992)']

[2, 'French Kiss (1995)']

[2, 'First Knight (1995)']

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[3, 'Fugitive, The (1993)']

[3, 'Batman (1989)']

[3, 'True Lies (1994)']

[3, 'Speed (1994)']

[3, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[3, 'Mission: Impossible (1996)']

[3, 'Die Hard: With a Vengeance (1995)']

[3, 'Rock, The (1996)']

[3, "Ocean's Eleven (2001)"]

[3, 'Batman Forever (1995)']

[3, 'Twister (1996)']

[3, 'Spider-Man (2002)']

[3, 'Bourne Identity, The (2002)']

[3, 'GoldenEye (1995)']

[3, 'Clear and Present Danger (1994)']

[3, 'Indiana Jones and the Temple of Doom (1984)']

[3, 'Cliffhanger (1993)']

[3, 'Net, The (1995)']

[3, 'Crimson Tide (1995)']

[3, 'Hunt for Red October, The (1990)']

[3, 'Spider-Man 2 (2004)']

[3, 'Broken Arrow (1996)']

[3, 'Bourne Ultimatum, The (2007)']

[3, 'Casino Royale (2006)']

[3, 'Top Gun (1986)']

[3, 'Face/Off (1997)']

[3, 'Bourne Supremacy, The (2004)']

[3, 'Mummy, The (1999)']

[3, 'Lethal Weapon (1987)']

[3, 'Mission: Impossible II (2000)']

[3, 'In the Line of Fire (1993)']

[3, "Charlie's Angels (2000)"]

[3, 'Die Hard 2 (1990)']

[3, 'Maverick (1994)']

[3, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[3, 'Lost World: Jurassic Park, The (1997)']

[3, 'Enemy of the State (1998)']

[3, 'Eraser (1996)']

[3, 'Patriot, The (2000)']

[3, 'Con Air (1997)']

[3, 'Air Force One (1997)']

[3, 'Sherlock Holmes (2009)']

[3, 'Tombstone (1993)']

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[3, 'From Dusk Till Dawn (1996)']

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[3, 'Deadpool (2016)']

[3, 'Congo (1995)']

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[3, 'Ransom (1996)']

[3, 'Dragonheart (1996)']

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[3, 'Batman Returns (1992)']

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[3, 'Blade (1998)']

[3, 'Mr. & Mrs. Smith (2005)']

[3, 'Bad Boys (1995)']

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[3, 'Crocodile Dundee (1986)']

[3, 'Sneakers (1992)']

[3, 'Rush Hour (1998)']

[3, 'Thomas Crown Affair, The (1999)']

[3, 'Beverly Hills Cop (1984)']

[3, 'Gone in 60 Seconds (2000)']

[3, 'Taken (2008)']

[3, "Pirates of the Caribbean: At World's End (2007)"]

[3, 'Executive Decision (1996)']

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[4, 'Forrest Gump (1994)']

[4, 'Shawshank Redemption, The (1994)']

[4, "Schindler's List (1993)"]

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[4, 'Apollo 13 (1995)']

[4, 'Saving Private Ryan (1998)']

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[4, 'Green Mile, The (1999)']

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[4, 'Cast Away (2000)']

[4, 'Dead Poets Society (1989)']

[4, 'Jaws (1975)']

[4, 'Shakespeare in Love (1998)']

[4, 'Life Is Beautiful (La Vita è bella) (1997)']

[4, 'As Good as It Gets (1997)']

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[4, 'Stand by Me (1986)']

[4, 'Amadeus (1984)']

[4, 'Philadelphia (1993)']

[4, 'Almost Famous (2000)']

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[4, 'Pianist, The (2002)']

[4, 'Traffic (2000)']

[4, 'Rocky (1976)']

[4, 'Platoon (1986)']

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[4, 'Few Good Men, A (1992)']

[4, 'To Kill a Mockingbird (1962)']

[4, 'Legends of the Fall (1994)']

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[4, 'The Imitation Game (2014)']

[4, "It's a Wonderful Life (1946)"]

[4, 'English Patient, The (1996)']

[4, 'Gone with the Wind (1939)']

[4, "King's Speech, The (2010)"]

[4, 'Million Dollar Baby (2004)']

[4, 'Boot, Das (Boat, The) (1981)']

[4, 'Black Hawk Down (2001)']

[4, 'Gran Torino (2008)']

[4, 'Lawrence of Arabia (1962)']

[4, 'Intouchables (2011)']

[4, 'Sling Blade (1996)']

[4, 'Bridge on the River Kwai, The (1957)']

[4, 'Field of Dreams (1989)']

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[4, 'Last of the Mohicans, The (1992)']

[4, 'Glory (1989)']

[4, 'Hotel Rwanda (2004)']

[4, 'Crash (2004)']

[4, 'Deer Hunter, The (1978)']

[4, 'Great Escape, The (1963)']

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[5, 'Monty Python and the Holy Grail (1975)']

[5, 'Groundhog Day (1993)']

[5, 'Ace Ventura: Pet Detective (1994)']

[5, 'Mask, The (1994)']

[5, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[5, 'Big Lebowski, The (1998)']

[5, "Ferris Bueller's Day Off (1986)"]

[5, "There's Something About Mary (1998)"]

[5, 'Austin Powers: The Spy Who Shagged Me (1999)']

[5, 'American Pie (1999)']

[5, 'Breakfast Club, The (1985)']

[5, 'Clerks (1994)']

[5, 'O Brother, Where Art Thou? (2000)']

[5, 'Austin Powers: International Man of Mystery (1997)']

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[5, 'Beetlejuice (1988)']

[5, 'Airplane! (1980)']

[5, 'Blues Brothers, The (1980)']

[5, 'Meet the Parents (2000)']

[5, 'Fish Called Wanda, A (1988)']

[5, 'Shaun of the Dead (2004)']

[5, 'Happy Gilmore (1996)']

[5, 'Nutty Professor, The (1996)']

[5, 'Little Miss Sunshine (2006)']

[5, 'Liar Liar (1997)']

[5, 'Juno (2007)']

[5, 'South Park: Bigger, Longer and Uncut (1999)']

[5, 'Dogma (1999)']

[5, 'High Fidelity (2000)']

[5, 'Scream (1996)']

[5, 'This Is Spinal Tap (1984)']

[5, 'Hangover, The (2009)']

[5, 'Annie Hall (1977)']

[5, 'Royal Tenenbaums, The (2001)']

[5, 'Young Frankenstein (1974)']

[5, 'Raising Arizona (1987)']

[5, 'Wallace & Gromit: The Wrong Trousers (1993)']

[5, 'Bruce Almighty (2003)']

[5, 'Full Monty, The (1997)']

[5, '40-Year-Old Virgin, The (2005)']

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[5, 'Hot Fuzz (2007)']

[5, 'Robin Hood: Men in Tights (1993)']

[5, 'School of Rock (2003)']

[5, "Wayne's World (1992)"]

[5, 'Naked Gun 33 1/3: The Final Insult (1994)']

[5, 'Grosse Pointe Blank (1997)']

[5, 'My Cousin Vinny (1992)']

[5, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[5, 'Zombieland (2009)']

[5, 'Chasing Amy (1997)']

[5, 'Election (1999)']

[5, 'Superbad (2007)']

[5, 'Christmas Story, A (1983)']

[5, 'Hot Shots! Part Deux (1993)']

[5, 'Spaceballs (1987)']

[5, 'Army of Darkness (1993)']

[5, 'Wallace & Gromit: A Close Shave (1995)']

[5, 'Good Morning, Vietnam (1987)']

[5, 'Three Kings (1999)']

[5, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[5, 'Some Like It Hot (1959)']

[5, 'Animal House (1978)']

[5, 'Scary Movie (2000)']

[5, 'So I Married an Axe Murderer (1993)']

[5, 'Blazing Saddles (1974)']

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[6, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[6, 'Inception (2010)']

[6, 'Blade Runner (1982)']

[6, 'E.T. the Extra-Terrestrial (1982)']

[6, 'Truman Show, The (1998)']

[6, 'Eternal Sunshine of the Spotless Mind (2004)']

[6, 'Minority Report (2002)']

[6, '2001: A Space Odyssey (1968)']

[6, 'WALL·E (2008)']

[6, 'Donnie Darko (2001)']

[6, 'V for Vendetta (2006)']

[6, 'Prestige, The (2006)']

[6, 'Interstellar (2014)']

[6, 'Gattaca (1997)']

[6, 'Contact (1997)']

[6, 'District 9 (2009)']

[6, 'Abyss, The (1989)']

[6, 'The Martian (2015)']

[6, 'The Butterfly Effect (2004)']

[6, 'Brazil (1985)']

[6, 'Children of Men (2006)']

[6, 'Close Encounters of the Third Kind (1977)']

[6, 'A.I. Artificial Intelligence (2001)']

[6, 'Planet of the Apes (1968)']

[6, 'Ex Machina (2015)']

[6, 'Gravity (2013)']

[6, 'Dark City (1998)']

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[7, 'Toy Story (1995)']

[7, 'Aladdin (1992)']

[7, 'Lion King, The (1994)']

[7, 'Shrek (2001)']

[7, 'Princess Bride, The (1987)']

[7, 'Beauty and the Beast (1991)']

[7, 'Finding Nemo (2003)']

[7, 'Monsters, Inc. (2001)']

[7, 'Mrs. Doubtfire (1993)']

[7, 'Babe (1995)']

[7, 'Incredibles, The (2004)']

[7, 'Home Alone (1990)']

[7, 'Willy Wonka & the Chocolate Factory (1971)']

[7, 'Toy Story 2 (1999)']

[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

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[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Who Framed Roger Rabbit? (1988)']

[7, 'Big (1988)']

[7, 'Shrek 2 (2004)']

[7, 'Ratatouille (2007)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Chicken Run (2000)']

[7, 'Ice Age (2002)']

[7, 'Honey, I Shrunk the Kids (1989)']

[7, 'Santa Clause, The (1994)']

[7, 'Mary Poppins (1964)']

[7, 'Toy Story 3 (2010)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'How to Train Your Dragon (2010)']

[7, 'Inside Out (2015)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Pinocchio (1940)']

[7, 'Casper (1995)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Charlie and the Chocolate Factory (2005)']

[7, 'Goonies, The (1985)']

[7, 'Gremlins (1984)']

[7, 'Kung Fu Panda (2008)']

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[8, 'Independence Day (a.k.a. ID4) (1996)']

[8, 'Men in Black (a.k.a. MIB) (1997)']

[8, 'Fifth Element, The (1997)']

[8, 'X-Men (2000)']

[8, 'Star Wars: Episode I - The Phantom Menace (1999)']

[8, 'Stargate (1994)']

[8, 'Waterworld (1995)']

[8, 'Iron Man (2008)']

[8, 'Star Trek: Generations (1994)']

[8, 'Avatar (2009)']

[8, 'Matrix Reloaded, The (2003)']

[8, 'Back to the Future Part II (1989)']

[8, 'Armageddon (1998)']

[8, 'Total Recall (1990)']

[8, 'Back to the Future Part III (1990)']

[8, 'Star Wars: Episode II - Attack of the Clones (2002)']

[8, 'X2: X-Men United (2003)']

[8, 'Star Trek: First Contact (1996)']

[8, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[8, 'Demolition Man (1993)']

[8, 'Matrix Revolutions, The (2003)']

[8, 'Mars Attacks! (1996)']

[8, 'Avengers, The (2012)']

[8, 'I, Robot (2004)']

[8, 'Starship Troopers (1997)']

[8, 'Guardians of the Galaxy (2014)']

[8, 'Star Trek (2009)']

[8, 'Star Trek II: The Wrath of Khan (1982)']

[8, 'Judge Dredd (1995)']

[8, 'Superman (1978)']

[8, 'Galaxy Quest (1999)']

[8, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[8, 'I Am Legend (2007)']

[8, 'Alien³ (a.k.a. Alien 3) (1992)']

[8, 'Signs (2002)']

[8, 'The Hunger Games (2012)']

[8, 'Species (1995)']

[8, 'Star Wars: Episode VII - The Force Awakens (2015)']

[8, 'Star Trek IV: The Voyage Home (1986)']

[8, 'Edge of Tomorrow (2014)']

[8, 'Johnny Mnemonic (1995)']

[8, 'Serenity (2005)']

[8, 'Iron Man 2 (2010)']

[8, 'Wild Wild West (1999)']

[8, 'Deep Impact (1998)']

[8, 'Terminator 3: Rise of the Machines (2003)']

[8, 'Alien: Resurrection (1997)']

[8, 'X-Files: Fight the Future, The (1998)']

[8, 'Highlander (1986)']

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[9, 'Pulp Fiction (1994)']

[9, 'Silence of the Lambs, The (1991)']

[9, 'Fight Club (1999)']

[9, 'Usual Suspects, The (1995)']

[9, 'American Beauty (1999)']

[9, 'Godfather, The (1972)']

[9, 'Seven (a.k.a. Se7en) (1995)']

[9, 'Fargo (1996)']

[9, 'Memento (2000)']

[9, "One Flew Over the Cuckoo's Nest (1975)"]

[9, 'Reservoir Dogs (1992)']

[9, 'Godfather: Part II, The (1974)']

[9, 'Kill Bill: Vol. 1 (2003)']

[9, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[9, 'Goodfellas (1990)']

[9, 'American History X (1998)']

[9, 'Shining, The (1980)']

[9, 'Clockwork Orange, A (1971)']

[9, 'Taxi Driver (1976)']

[9, 'Trainspotting (1996)']

[9, 'Kill Bill: Vol. 2 (2004)']

[9, 'L.A. Confidential (1997)']

[9, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[9, 'Apocalypse Now (1979)']

[9, 'Full Metal Jacket (1987)']

[9, 'Departed, The (2006)']

[9, 'Snatch (2000)']

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[9, 'Inglourious Basterds (2009)']

[9, 'Sin City (2005)']

[9, 'Psycho (1960)']

[9, 'Requiem for a Dream (2000)']

[9, 'Django Unchained (2012)']

[9, 'Rear Window (1954)']

[9, 'City of God (Cidade de Deus) (2002)']

[9, 'Lock, Stock & Two Smoking Barrels (1998)']

[9, 'No Country for Old Men (2007)']

[9, 'Casino (1995)']

[9, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[9, 'Chinatown (1974)']

[9, 'North by Northwest (1959)']

[9, 'Untouchables, The (1987)']

[9, 'Wolf of Wall Street, The (2013)']

[9, 'Sting, The (1973)']

[9, 'True Romance (1993)']

[9, 'Butch Cassidy and the Sundance Kid (1969)']

[9, 'Exorcist, The (1973)']

[9, 'Scarface (1983)']

[9, 'Unforgiven (1992)']

[9, 'Black Swan (2010)']

[9, 'Seven Samurai (Shichinin no samurai) (1954)']

[9, 'Gone Girl (2014)']

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[9, 'Mystic River (2003)']

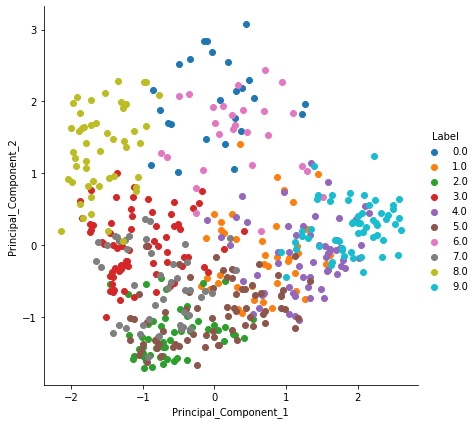
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1582409626061166

Davies-Bouldin Index: 1.7232016313554142

Calinski-Harabasz Score: 64.55916989671474

Test 53

Test type: KMeans

Parameters: Num Clusters i = 11

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--------- NEW CLUSTER -----------

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[1, 'Silence of the Lambs, The (1991)']

[1, 'Fight Club (1999)']

[1, 'Usual Suspects, The (1995)']

[1, 'American Beauty (1999)']

[1, 'Godfather, The (1972)']

[1, 'Seven (a.k.a. Se7en) (1995)']

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[1, 'Memento (2000)']

[1, "One Flew Over the Cuckoo's Nest (1975)"]

[1, 'Reservoir Dogs (1992)']

[1, 'Godfather: Part II, The (1974)']

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[1, 'American History X (1998)']

[1, 'Shining, The (1980)']

[1, 'Clockwork Orange, A (1971)']

[1, 'Taxi Driver (1976)']

[1, 'Trainspotting (1996)']

[1, 'Kill Bill: Vol. 2 (2004)']

[1, 'L.A. Confidential (1997)']

[1, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[1, 'Apocalypse Now (1979)']

[1, 'Full Metal Jacket (1987)']

[1, 'Departed, The (2006)']

[1, 'Snatch (2000)']

[1, 'Heat (1995)']

[1, 'Jaws (1975)']

[1, 'Inglourious Basterds (2009)']

[1, 'Sin City (2005)']

[1, 'Psycho (1960)']

[1, 'Requiem for a Dream (2000)']

[1, 'Django Unchained (2012)']

[1, 'Rear Window (1954)']

[1, 'City of God (Cidade de Deus) (2002)']

[1, 'Lock, Stock & Two Smoking Barrels (1998)']

[1, 'No Country for Old Men (2007)']

[1, 'Casino (1995)']

[1, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[1, 'Chinatown (1974)']

[1, 'North by Northwest (1959)']

[1, 'Platoon (1986)']

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[1, 'Wolf of Wall Street, The (2013)']

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[1, 'True Romance (1993)']

[1, 'Butch Cassidy and the Sundance Kid (1969)']

[1, 'Exorcist, The (1973)']

[1, 'Scarface (1983)']

[1, 'Unforgiven (1992)']

[1, 'Seven Samurai (Shichinin no samurai) (1954)']

[1, 'Gone Girl (2014)']

[1, 'Jackie Brown (1997)']

[1, 'Maltese Falcon, The (1941)']

[1, 'Old Boy (2003)']

[1, 'Mystic River (2003)']

[1, 'Cool Hand Luke (1967)']

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[2, 'Independence Day (a.k.a. ID4) (1996)']

[2, 'Men in Black (a.k.a. MIB) (1997)']

[2, 'Fifth Element, The (1997)']

[2, 'X-Men (2000)']

[2, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[2, 'Star Wars: Episode I - The Phantom Menace (1999)']

[2, 'Stargate (1994)']

[2, 'Waterworld (1995)']

[2, 'Iron Man (2008)']

[2, 'Star Trek: Generations (1994)']

[2, 'Avatar (2009)']

[2, 'Matrix Reloaded, The (2003)']

[2, 'Back to the Future Part II (1989)']

[2, 'Armageddon (1998)']

[2, 'Total Recall (1990)']

[2, 'Back to the Future Part III (1990)']

[2, 'Star Wars: Episode II - Attack of the Clones (2002)']

[2, 'X2: X-Men United (2003)']

[2, 'Star Trek: First Contact (1996)']

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[2, 'Avengers, The (2012)']

[2, 'I, Robot (2004)']

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[2, 'Predator (1987)']

[2, 'Guardians of the Galaxy (2014)']

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[2, 'Galaxy Quest (1999)']

[2, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[2, 'I Am Legend (2007)']

[2, 'Alien³ (a.k.a. Alien 3) (1992)']

[2, 'Signs (2002)']

[2, 'Species (1995)']

[2, 'Star Wars: Episode VII - The Force Awakens (2015)']

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[3, 'Pretty Woman (1990)']

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[3, 'When Harry Met Sally... (1989)']

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[3, 'Ace Ventura: When Nature Calls (1995)']

[3, 'Birdcage, The (1996)']

[3, 'Meet the Parents (2000)']

[3, 'Sense and Sensibility (1995)']

[3, 'Blair Witch Project, The (1999)']

[3, 'Nutty Professor, The (1996)']

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[3, 'Liar Liar (1997)']

[3, "Mr. Holland's Opus (1995)"]

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[3, 'Dave (1993)']

[3, 'Addams Family Values (1993)']

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[3, 'Bruce Almighty (2003)']

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[3, 'Naked Gun 33 1/3: The Final Insult (1994)']

[3, 'Truth About Cats & Dogs, The (1996)']

[3, '10 Things I Hate About You (1999)']

[3, 'Love Actually (2003)']

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[3, 'My Big Fat Greek Wedding (2002)']

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[3, 'Sabrina (1995)']

[3, 'Dirty Dancing (1987)']

[3, 'Thelma & Louise (1991)']

[3, 'Grumpier Old Men (1995)']

[3, "City Slickers II: The Legend of Curly's Gold (1994)"]

[3, 'Father of the Bride Part II (1995)']

[3, 'Rob Roy (1995)']

[3, 'Disclosure (1994)']

[3, 'What Women Want (2000)']

[3, 'Crying Game, The (1992)']

[3, 'French Kiss (1995)']

[3, 'First Knight (1995)']

--------- NEW CLUSTER -----------

[4, 'Princess Bride, The (1987)']

[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Mask, The (1994)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, 'Big Lebowski, The (1998)']

[4, "Ferris Bueller's Day Off (1986)"]

[4, "There's Something About Mary (1998)"]

[4, 'Austin Powers: The Spy Who Shagged Me (1999)']

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[7, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

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[8, 'Jurassic Park (1993)']

[8, 'Terminator 2: Judgment Day (1991)']

[8, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[8, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[8, 'Lord of the Rings: The Two Towers, The (2002)']

[8, 'Lord of the Rings: The Return of the King, The (2003)']

[8, 'Back to the Future (1985)']

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[8, 'Indiana Jones and the Last Crusade (1989)']

[8, 'Die Hard (1988)']

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[8, 'Dark Knight Rises, The (2012)']

[8, '300 (2007)']

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[9, 'Gone with the Wind (1939)']

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[9, 'Million Dollar Baby (2004)']

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[9, 'Black Hawk Down (2001)']

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[9, 'Intouchables (2011)']

[9, 'Sling Blade (1996)']

[9, 'Bridge on the River Kwai, The (1957)']

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[9, 'Blood Diamond (2006)']

[9, 'Last of the Mohicans, The (1992)']

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[9, 'Deer Hunter, The (1978)']

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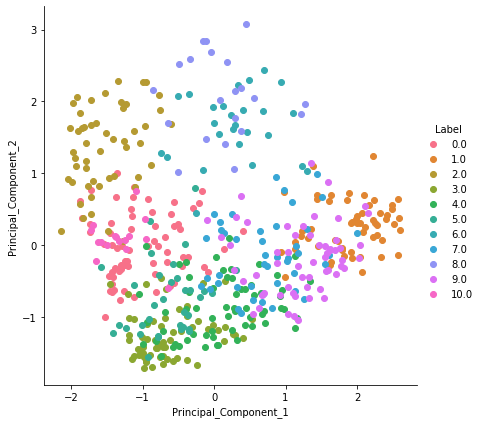
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1643198164509668

Davies-Bouldin Index: 1.6823726963411838

Calinski-Harabasz Score: 61.601302269833496

Test 54

Test type: KMeans

Parameters: Num Clusters i = 12

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[4, 'Iron Man (2008)']

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[6, 'Reservoir Dogs (1992)']

[6, 'Godfather: Part II, The (1974)']

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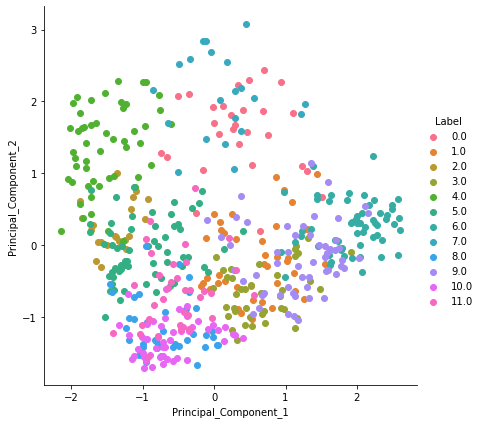
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.15216863348596535

Davies-Bouldin Index: 1.6858903848934659

Calinski-Harabasz Score: 58.66885321471929

Running regular GMM on range

Test 55

Test type: GMM

Parameters: Num Components i = 6

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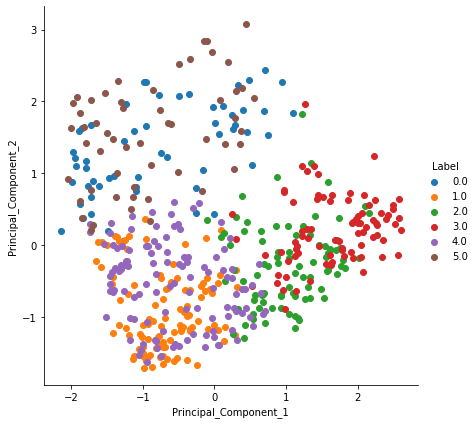
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.11667361833527787

Davies-Bouldin Index: 2.4019082369172406

Calinski-Harabasz Score: 71.40064457930464

Test 56

Test type: GMM

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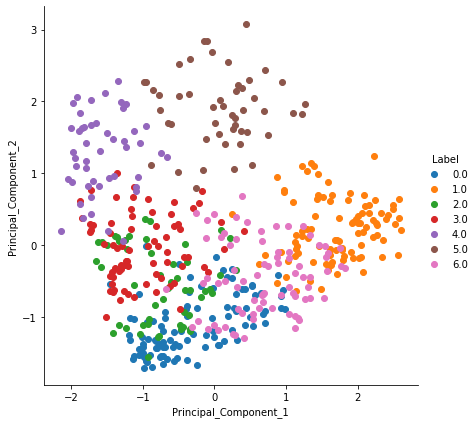
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warnings.warn(msg, UserWarning)



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Calinski-Harabasz Score: 74.1488901513276

Test 57

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[5, 'Starship Troopers (1997)']

[5, 'Predator (1987)']

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[5, 'Star Trek (2009)']

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[5, 'Alien: Resurrection (1997)']

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[5, 'Highlander (1986)']

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[6, 'Crow, The (1994)']

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[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

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[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Honey, I Shrunk the Kids (1989)']

[7, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[7, 'Sleepy Hollow (1999)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'How to Train Your Dragon (2010)']

[7, 'The Hunger Games (2012)']

[7, 'Dragonheart (1996)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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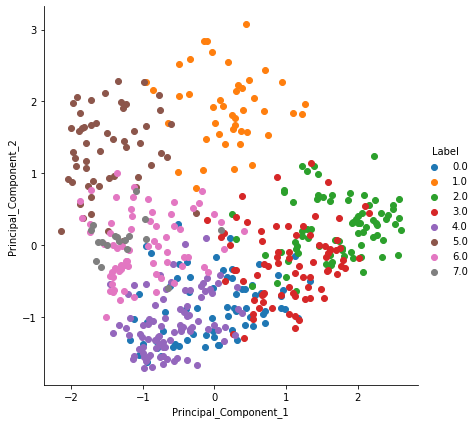
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1546546684377515

Davies-Bouldin Index: 1.861849283698083

Calinski-Harabasz Score: 70.66809623385618

Test 58

Test type: GMM

Parameters: Num Components i = 9

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[1, 'Piano, The (1993)']

[1, 'To Kill a Mockingbird (1962)']

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[3, 'Finding Nemo (2003)']

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[3, 'Sleepless in Seattle (1993)']

[3, 'Willy Wonka & the Chocolate Factory (1971)']

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[3, 'Four Weddings and a Funeral (1994)']

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[3, 'Up (2009)']

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[3, 'French Kiss (1995)']

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[4, 'Shining, The (1980)']

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[4, 'Citizen Kane (1941)']

[4, 'Graduate, The (1967)']

[4, 'No Country for Old Men (2007)']

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[4, 'Scarface (1983)']

[4, 'Unforgiven (1992)']

[4, 'Boot, Das (Boat, The) (1981)']

[4, 'Gran Torino (2008)']

[4, 'Seven Samurai (Shichinin no samurai) (1954)']

[4, 'Lawrence of Arabia (1962)']

[4, 'Sling Blade (1996)']

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[4, 'Maltese Falcon, The (1941)']

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[5, 'Star Wars: Episode VII - The Force Awakens (2015)']

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[5, 'Alien: Resurrection (1997)']

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[6, 'Matrix, The (1999)']

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[6, 'Jurassic Park (1993)']

[6, 'Terminator 2: Judgment Day (1991)']

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[6, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[6, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[6, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[6, 'Lord of the Rings: The Two Towers, The (2002)']

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[7, 'Princess Bride, The (1987)']

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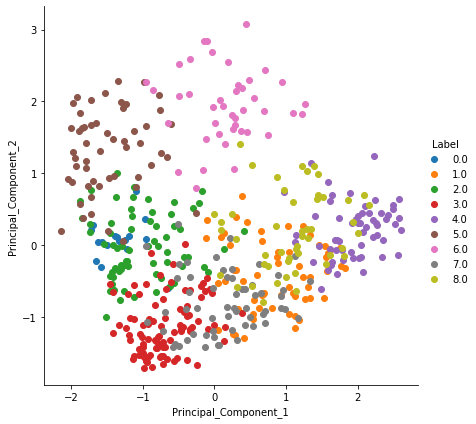
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.14797558603385072

Davies-Bouldin Index: 1.841337230358081

Calinski-Harabasz Score: 65.89261110821982

Test 59

Test type: GMM

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[4, 'Men in Black (a.k.a. MIB) (1997)']

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[4, 'Star Trek: Generations (1994)']

[4, 'Avatar (2009)']

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[4, 'Star Wars: Episode II - Attack of the Clones (2002)']

[4, 'X2: X-Men United (2003)']

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[4, 'Demolition Man (1993)']

[4, 'Matrix Revolutions, The (2003)']

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[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

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[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

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[8, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

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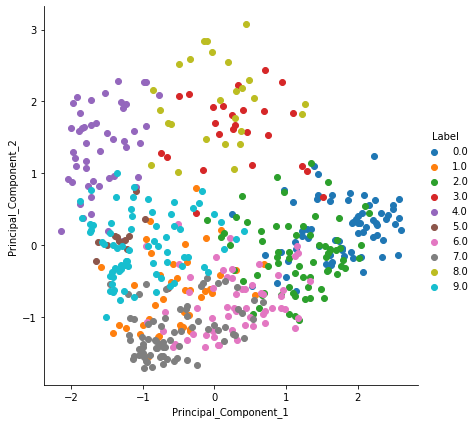
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warnings.warn(msg, UserWarning)



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Davies-Bouldin Index: 1.755734659967508

Calinski-Harabasz Score: 63.07885857836502

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[7, 'Mission: Impossible II (2000)']

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[8, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

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[9, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

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[10, 'Butch Cassidy and the Sundance Kid (1969)']

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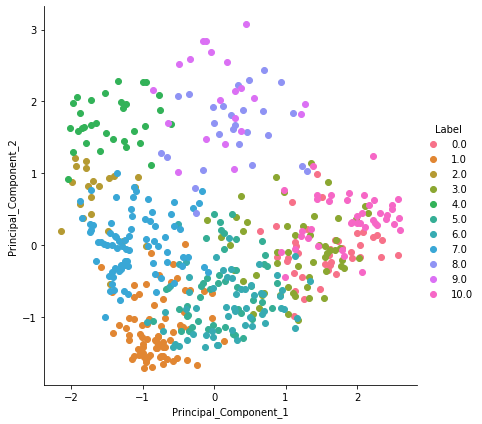
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.12963183361855526

Davies-Bouldin Index: 2.01021367886019

Calinski-Harabasz Score: 56.65284385130539

Test 61

Test type: GMM

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[1, 'Austin Powers: International Man of Mystery (1997)']

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[1, 'Ace Ventura: When Nature Calls (1995)']

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[1, 'Beverly Hills Cop (1984)']

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[1, 'So I Married an Axe Murderer (1993)']

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[7, "One Flew Over the Cuckoo's Nest (1975)"]

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[7, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

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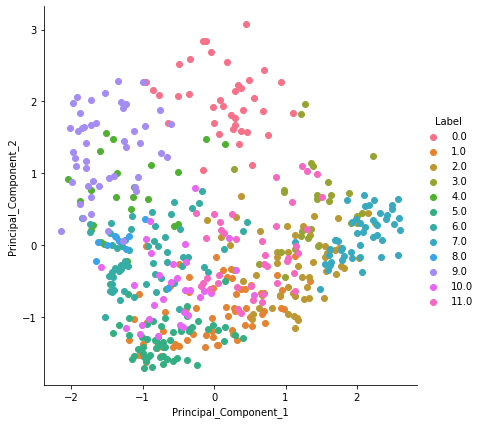
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.14438505264252546

Davies-Bouldin Index: 1.833814949463151

Calinski-Harabasz Score: 55.92747964565021

Test 62

Test type: DBScan

Parameters: Radius epsilon = 3.5 Min samples n = 5

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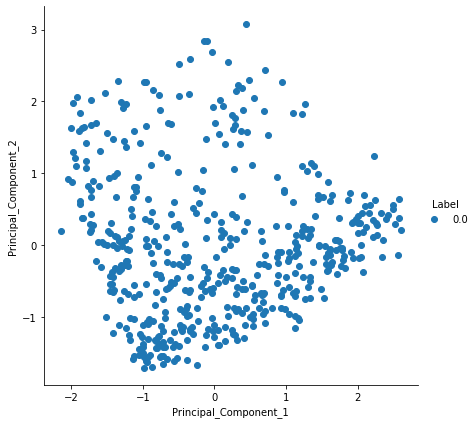
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warnings.warn(msg, UserWarning)



Test 63

Test type: DBScan

Parameters: Radius epsilon = 3.6 Min samples n = 5

Estimated number of clusters: 1

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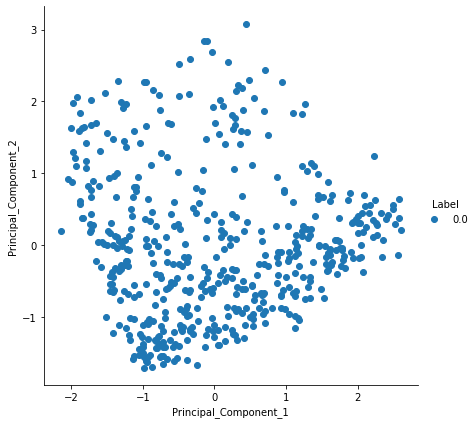
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warnings.warn(msg, UserWarning)



Test 64

Test type: DBScan

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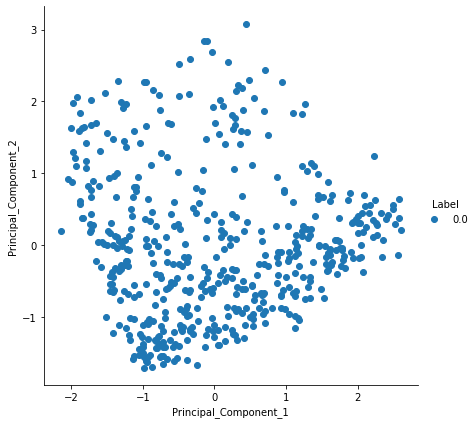
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warnings.warn(msg, UserWarning)



Test 65

Test type: DBScan

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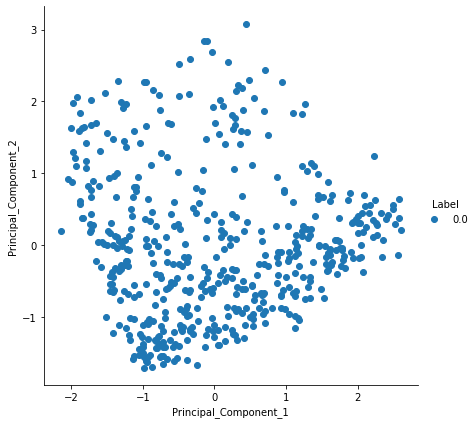
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warnings.warn(msg, UserWarning)



Test 66

Test type: DBScan

Parameters: Radius epsilon = 3.9000000000000004 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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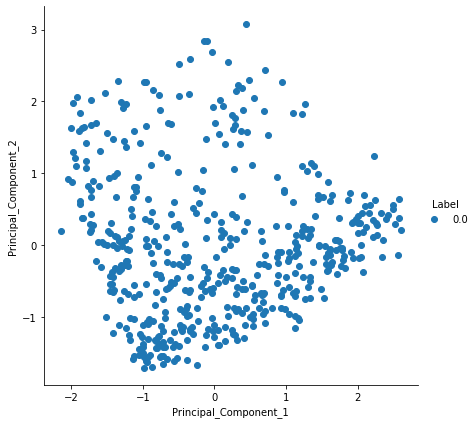
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warnings.warn(msg, UserWarning)



Test 67

Test type: DBScan

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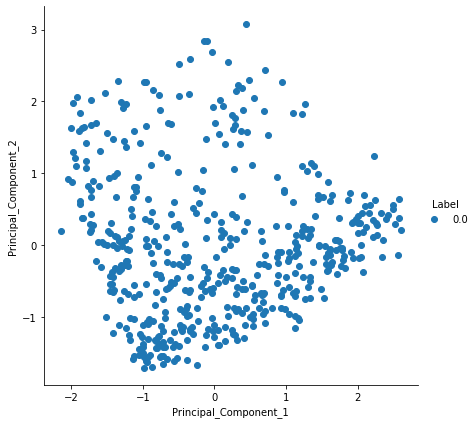
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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Test 68

Test type: DBScan

Parameters: Radius epsilon = 4.1000000000000005 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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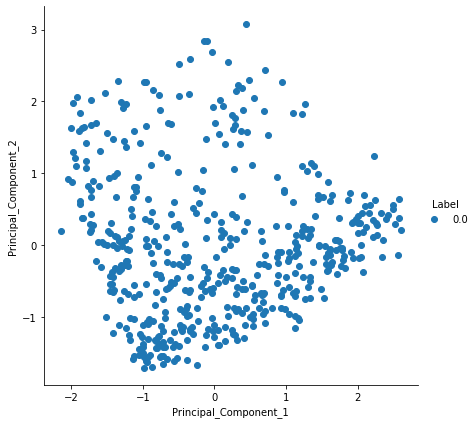
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(500, 70) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Test 69

Test type: DBScan

Parameters: Radius epsilon = 4.200000000000001 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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0 356.0

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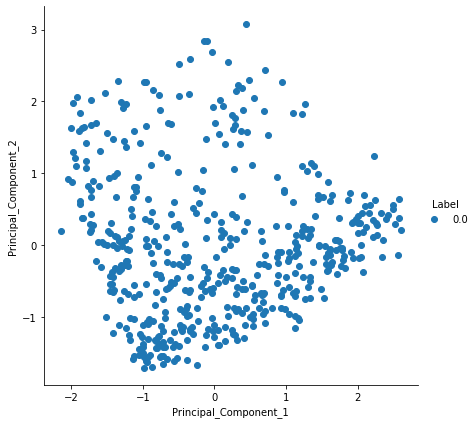
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warnings.warn(msg, UserWarning)



Test 70

Test type: DBScan

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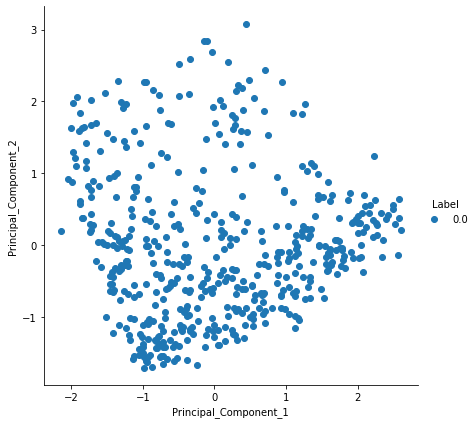
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warnings.warn(msg, UserWarning)



Test 71

Test type: DBScan

Parameters: Radius epsilon = 4.4 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

(500,) (500,)

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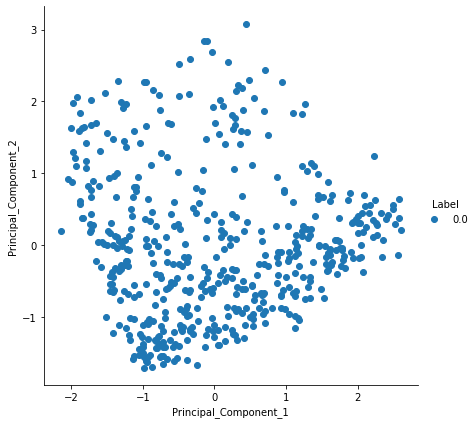
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warnings.warn(msg, UserWarning)

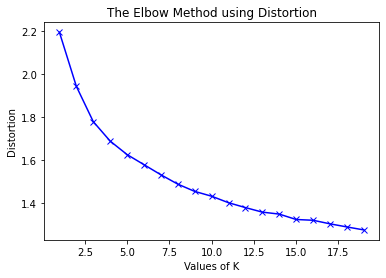


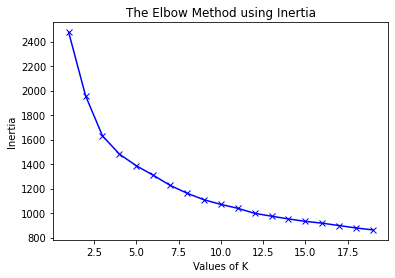
With Both

(500, 1128) to (500, 70)

(500, 70) to (500, 28)

ELBOW GRAPH:





Running regular KMeans on range

Test 72

Test type: KMeans

Parameters: Num Clusters i = 6

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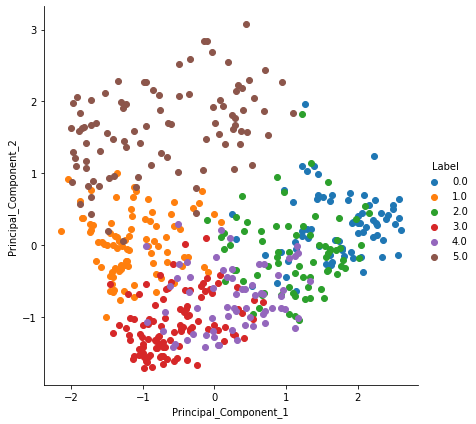
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1536517924664596

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Test 73

Test type: KMeans

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[1, 'Willy Wonka & the Chocolate Factory (1971)']

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[1, 'Four Weddings and a Funeral (1994)']

[1, 'Toy Story 2 (1999)']

[1, 'Clueless (1995)']

[1, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[1, 'Up (2009)']

[1, 'Wizard of Oz, The (1939)']

[1, 'Jumanji (1995)']

[1, 'Firm, The (1993)']

[1, 'Harry Potter and the Prisoner of Azkaban (2004)']

[1, "Bug's Life, A (1998)"]

[1, 'While You Were Sleeping (1995)']

[1, 'Harry Potter and the Chamber of Secrets (2002)']

[1, 'Nightmare Before Christmas, The (1993)']

[1, 'Big (1988)']

[1, 'Shrek 2 (2004)']

[1, 'Sense and Sensibility (1995)']

[1, 'Blair Witch Project, The (1999)']

[1, 'Ratatouille (2007)']

[1, 'Harry Potter and the Goblet of Fire (2005)']

[1, 'Chicken Run (2000)']

[1, "Mr. Holland's Opus (1995)"]

[1, 'Ice Age (2002)']

[1, 'Snow White and the Seven Dwarfs (1937)']

[1, 'Dave (1993)']

[1, 'Addams Family Values (1993)']

[1, 'American President, The (1995)']

[1, 'Grease (1978)']

[1, 'Eyes Wide Shut (1999)']

[1, 'Honey, I Shrunk the Kids (1989)']

[1, 'Santa Clause, The (1994)']

[1, 'Sound of Music, The (1965)']

[1, 'Bruce Almighty (2003)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, "Bridget Jones's Diary (2001)"]

[1, 'Client, The (1994)']

[1, 'Sleepy Hollow (1999)']

[1, 'Toy Story 3 (2010)']

[1, 'Harry Potter and the Order of the Phoenix (2007)']

[1, 'Notting Hill (1999)']

[1, 'Moulin Rouge (2001)']

[1, 'Harry Potter and the Half-Blood Prince (2009)']

[1, 'School of Rock (2003)']

[1, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[1, 'Wedding Singer, The (1998)']

[1, 'Truth About Cats & Dogs, The (1996)']

[1, 'How to Train Your Dragon (2010)']

[1, '10 Things I Hate About You (1999)']

[1, 'Dragonheart (1996)']

[1, 'Bowling for Columbine (2002)']

[1, 'Pleasantville (1998)']

[1, 'Love Actually (2003)']

[1, 'Inside Out (2015)']

[1, "The Devil's Advocate (1997)"]

[1, 'Pocahontas (1995)']

[1, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[1, 'Rocky Horror Picture Show, The (1975)']

[1, 'Coneheads (1993)']

[1, 'Much Ado About Nothing (1993)']

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[1, 'My Big Fat Greek Wedding (2002)']

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[1, 'Ring, The (2002)']

[1, 'Chocolat (2000)']

[1, "You've Got Mail (1998)"]

[1, 'Casper (1995)']

[1, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[1, 'Charlie and the Chocolate Factory (2005)']

[1, 'Legally Blonde (2001)']

[1, 'Phenomenon (1996)']

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[1, 'Grumpier Old Men (1995)']

[1, 'Gremlins (1984)']

[1, "City Slickers II: The Legend of Curly's Gold (1994)"]

[1, 'Father of the Bride Part II (1995)']

[1, 'Disclosure (1994)']

[1, 'What Women Want (2000)']

[1, '(500) Days of Summer (2009)']

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[2, 'Stargate (1994)']

[2, 'Waterworld (1995)']

[2, 'Iron Man (2008)']

[2, 'Star Trek: Generations (1994)']

[2, 'Matrix Reloaded, The (2003)']

[2, 'Back to the Future Part II (1989)']

[2, 'Armageddon (1998)']

[2, 'Total Recall (1990)']

[2, 'Back to the Future Part III (1990)']

[2, 'Contact (1997)']

[2, 'Star Wars: Episode II - Attack of the Clones (2002)']

[2, 'X2: X-Men United (2003)']

[2, 'Star Trek: First Contact (1996)']

[2, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[2, 'Demolition Man (1993)']

[2, 'Matrix Revolutions, The (2003)']

[2, 'Mars Attacks! (1996)']

[2, 'Avengers, The (2012)']

[2, 'I, Robot (2004)']

[2, 'Starship Troopers (1997)']

[2, 'Predator (1987)']

[2, 'Guardians of the Galaxy (2014)']

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[2, 'Superman (1978)']

[2, 'Galaxy Quest (1999)']

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[2, 'A.I. Artificial Intelligence (2001)']

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[2, 'Species (1995)']

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[2, 'Star Trek IV: The Voyage Home (1986)']

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[2, 'Serenity (2005)']

[2, 'Iron Man 2 (2010)']

[2, 'Wild Wild West (1999)']

[2, 'Deep Impact (1998)']

[2, 'Terminator 3: Rise of the Machines (2003)']

[2, 'Alien: Resurrection (1997)']

[2, 'X-Files: Fight the Future, The (1998)']

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[3, 'Shrek (2001)']

[3, 'Princess Bride, The (1987)']

[3, 'Monty Python and the Holy Grail (1975)']

[3, 'Groundhog Day (1993)']

[3, 'Ace Ventura: Pet Detective (1994)']

[3, 'Mask, The (1994)']

[3, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[3, 'Big Lebowski, The (1998)']

[3, "Ferris Bueller's Day Off (1986)"]

[3, "There's Something About Mary (1998)"]

[3, 'Austin Powers: The Spy Who Shagged Me (1999)']

[3, 'American Pie (1999)']

[3, 'Breakfast Club, The (1985)']

[3, 'Clerks (1994)']

[3, 'O Brother, Where Art Thou? (2000)']

[3, 'Austin Powers: International Man of Mystery (1997)']

[3, 'When Harry Met Sally... (1989)']

[3, 'Office Space (1999)']

[3, "Monty Python's Life of Brian (1979)"]

[3, 'Get Shorty (1995)']

[3, 'Who Framed Roger Rabbit? (1988)']

[3, 'Ace Ventura: When Nature Calls (1995)']

[3, 'Beetlejuice (1988)']

[3, 'Birdcage, The (1996)']

[3, 'Airplane! (1980)']

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[3, 'Meet the Parents (2000)']

[3, 'Fish Called Wanda, A (1988)']

[3, 'Shaun of the Dead (2004)']

[3, 'Happy Gilmore (1996)']

[3, 'Nutty Professor, The (1996)']

[3, 'Liar Liar (1997)']

[3, 'Juno (2007)']

[3, 'South Park: Bigger, Longer and Uncut (1999)']

[3, 'Dogma (1999)']

[3, 'High Fidelity (2000)']

[3, 'Scream (1996)']

[3, 'This Is Spinal Tap (1984)']

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[3, 'Royal Tenenbaums, The (2001)']

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[3, 'Raising Arizona (1987)']

[3, 'Wallace & Gromit: The Wrong Trousers (1993)']

[3, 'Full Monty, The (1997)']

[3, '40-Year-Old Virgin, The (2005)']

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[3, 'Cable Guy, The (1996)']

[3, 'Hot Fuzz (2007)']

[3, 'Robin Hood: Men in Tights (1993)']

[3, "Wayne's World (1992)"]

[3, 'Naked Gun 33 1/3: The Final Insult (1994)']

[3, 'Grosse Pointe Blank (1997)']

[3, 'My Cousin Vinny (1992)']

[3, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[3, 'Zombieland (2009)']

[3, 'Chasing Amy (1997)']

[3, 'Election (1999)']

[3, 'Superbad (2007)']

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[3, 'Hot Shots! Part Deux (1993)']

[3, 'Spaceballs (1987)']

[3, 'Army of Darkness (1993)']

[3, 'Wallace & Gromit: A Close Shave (1995)']

[3, 'Good Morning, Vietnam (1987)']

[3, 'Three Kings (1999)']

[3, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[3, 'Some Like It Hot (1959)']

[3, 'Animal House (1978)']

[3, 'Scary Movie (2000)']

[3, 'So I Married an Axe Murderer (1993)']

[3, 'Blazing Saddles (1974)']

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[4, 'Batman (1989)']

[4, 'True Lies (1994)']

[4, 'Speed (1994)']

[4, 'Indiana Jones and the Last Crusade (1989)']

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[4, 'Mission: Impossible (1996)']

[4, 'Die Hard (1988)']

[4, 'Die Hard: With a Vengeance (1995)']

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[4, 'Clear and Present Danger (1994)']

[4, 'Outbreak (1995)']

[4, 'Indiana Jones and the Temple of Doom (1984)']

[4, 'Cliffhanger (1993)']

[4, 'Net, The (1995)']

[4, 'Crimson Tide (1995)']

[4, 'Hunt for Red October, The (1990)']

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[4, 'Crow, The (1994)']

[4, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

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[4, 'Enemy of the State (1998)']

[4, 'Eraser (1996)']

[4, 'Patriot, The (2000)']

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[4, 'Air Force One (1997)']

[4, 'Sherlock Holmes (2009)']

[4, 'Tombstone (1993)']

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[4, 'From Dusk Till Dawn (1996)']

[4, 'Beverly Hills Cop III (1994)']

[4, 'Deadpool (2016)']

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[4, 'Tomorrow Never Dies (1997)']

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[4, 'Three Musketeers, The (1993)']

[4, 'Crocodile Dundee (1986)']

[4, 'Sneakers (1992)']

[4, 'Rush Hour (1998)']

[4, 'Thomas Crown Affair, The (1999)']

[4, 'Beverly Hills Cop (1984)']

[4, 'Gone in 60 Seconds (2000)']

[4, 'Taken (2008)']

[4, "Pirates of the Caribbean: At World's End (2007)"]

[4, 'Executive Decision (1996)']

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[5, 'Matrix, The (1999)']

[5, 'Star Wars: Episode IV - A New Hope (1977)']

[5, 'Jurassic Park (1993)']

[5, 'Terminator 2: Judgment Day (1991)']

[5, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[5, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[5, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[5, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[5, 'Lord of the Rings: The Two Towers, The (2002)']

[5, 'Lord of the Rings: The Return of the King, The (2003)']

[5, 'Back to the Future (1985)']

[5, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[5, 'Gladiator (2000)']

[5, 'Dark Knight, The (2008)']

[5, 'Inception (2010)']

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[5, 'Blade Runner (1982)']

[5, 'Alien (1979)']

[5, 'E.T. the Extra-Terrestrial (1982)']

[5, 'Aliens (1986)']

[5, 'Batman Begins (2005)']

[5, 'Minority Report (2002)']

[5, '2001: A Space Odyssey (1968)']

[5, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[5, 'WALL·E (2008)']

[5, 'V for Vendetta (2006)']

[5, 'Avatar (2009)']

[5, 'Interstellar (2014)']

[5, 'Gattaca (1997)']

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[5, 'District 9 (2009)']

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[5, 'The Martian (2015)']

[5, 'Brazil (1985)']

[5, 'Children of Men (2006)']

[5, 'Close Encounters of the Third Kind (1977)']

[5, 'Mad Max: Fury Road (2015)']

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[5, 'Ex Machina (2015)']

[5, 'Gravity (2013)']

[5, 'Dark City (1998)']

[5, 'Watchmen (2009)']

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[6, 'Pulp Fiction (1994)']

[6, 'Silence of the Lambs, The (1991)']

[6, 'Fight Club (1999)']

[6, 'Usual Suspects, The (1995)']

[6, 'American Beauty (1999)']

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[6, 'Seven (a.k.a. Se7en) (1995)']

[6, 'Fargo (1996)']

[6, 'Memento (2000)']

[6, "One Flew Over the Cuckoo's Nest (1975)"]

[6, 'Reservoir Dogs (1992)']

[6, 'Godfather: Part II, The (1974)']

[6, 'Kill Bill: Vol. 1 (2003)']

[6, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[6, 'Eternal Sunshine of the Spotless Mind (2004)']

[6, 'Goodfellas (1990)']

[6, 'American History X (1998)']

[6, 'Being John Malkovich (1999)']

[6, 'Shining, The (1980)']

[6, 'Clockwork Orange, A (1971)']

[6, 'Taxi Driver (1976)']

[6, 'Trainspotting (1996)']

[6, 'Kill Bill: Vol. 2 (2004)']

[6, 'L.A. Confidential (1997)']

[6, 'Donnie Darko (2001)']

[6, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[6, 'Apocalypse Now (1979)']

[6, 'Full Metal Jacket (1987)']

[6, 'Departed, The (2006)']

[6, 'Snatch (2000)']

[6, 'Heat (1995)']

[6, 'Jaws (1975)']

[6, 'Natural Born Killers (1994)']

[6, 'Inglourious Basterds (2009)']

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[6, 'City of God (Cidade de Deus) (2002)']

[6, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[6, 'Lock, Stock & Two Smoking Barrels (1998)']

[6, 'Run Lola Run (Lola rennt) (1998)']

[6, 'Shutter Island (2010)']

[6, 'Game, The (1997)']

[6, 'No Country for Old Men (2007)']

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[6, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[6, 'Chinatown (1974)']

[6, 'North by Northwest (1959)']

[6, 'Platoon (1986)']

[6, '28 Days Later (2002)']

[6, 'Untouchables, The (1987)']

[6, 'Vertigo (1958)']

[6, 'Wolf of Wall Street, The (2013)']

[6, 'Sting, The (1973)']

[6, 'True Romance (1993)']

[6, 'Butch Cassidy and the Sundance Kid (1969)']

[6, 'Exorcist, The (1973)']

[6, 'Scarface (1983)']

[6, 'Unforgiven (1992)']

[6, 'Boogie Nights (1997)']

[6, 'Black Swan (2010)']

[6, 'Seven Samurai (Shichinin no samurai) (1954)']

[6, 'Princess Mononoke (Mononoke-hime) (1997)']

[6, 'Grand Budapest Hotel, The (2014)']

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[6, 'Mystic River (2003)']

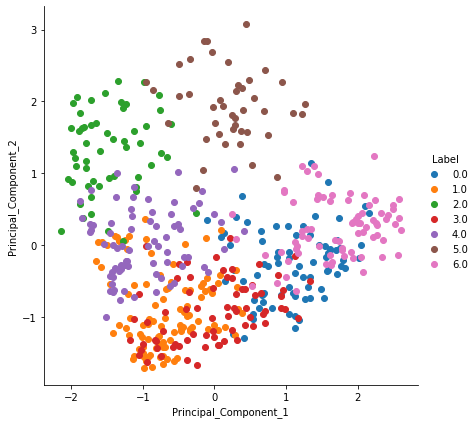
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1612611665148423

Davies-Bouldin Index: 1.852372640335377

Calinski-Harabasz Score: 83.61315000639442

Test 74

Test type: KMeans

Parameters: Num Clusters i = 8

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[0, 'Eternal Sunshine of the Spotless Mind (2004)']

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[1, 'Fugitive, The (1993)']

[1, 'Apollo 13 (1995)']

[1, 'Saving Private Ryan (1998)']

[1, 'Sixth Sense, The (1999)']

[1, 'Dances with Wolves (1990)']

[1, 'Good Will Hunting (1997)']

[1, 'Titanic (1997)']

[1, 'Beautiful Mind, A (2001)']

[1, 'Green Mile, The (1999)']

[1, 'Catch Me If You Can (2002)']

[1, 'Rain Man (1988)']

[1, 'Casablanca (1942)']

[1, 'Cast Away (2000)']

[1, 'Dead Poets Society (1989)']

[1, 'Wizard of Oz, The (1939)']

[1, 'Shakespeare in Love (1998)']

[1, 'Life Is Beautiful (La Vita è bella) (1997)']

[1, 'As Good as It Gets (1997)']

[1, 'Jerry Maguire (1996)']

[1, 'Stand by Me (1986)']

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[1, 'Philadelphia (1993)']

[1, 'Almost Famous (2000)']

[1, 'Dead Man Walking (1995)']

[1, 'Citizen Kane (1941)']

[1, 'Slumdog Millionaire (2008)']

[1, 'Graduate, The (1967)']

[1, 'Erin Brockovich (2000)']

[1, "What's Eating Gilbert Grape (1993)"]

[1, 'Pianist, The (2002)']

[1, 'Traffic (2000)']

[1, 'Rocky (1976)']

[1, 'Few Good Men, A (1992)']

[1, 'To Kill a Mockingbird (1962)']

[1, 'Legends of the Fall (1994)']

[1, 'Last Samurai, The (2003)']

[1, 'The Imitation Game (2014)']

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[1, 'English Patient, The (1996)']

[1, 'Gone with the Wind (1939)']

[1, "King's Speech, The (2010)"]

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[1, 'Boot, Das (Boat, The) (1981)']

[1, 'Black Hawk Down (2001)']

[1, 'Gran Torino (2008)']

[1, 'Lawrence of Arabia (1962)']

[1, 'Intouchables (2011)']

[1, 'Sling Blade (1996)']

[1, 'Bridge on the River Kwai, The (1957)']

[1, 'Field of Dreams (1989)']

[1, 'Blood Diamond (2006)']

[1, 'Last of the Mohicans, The (1992)']

[1, 'Glory (1989)']

[1, 'Rob Roy (1995)']

[1, 'Hotel Rwanda (2004)']

[1, 'Crash (2004)']

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[2, 'Toy Story (1995)']

[2, 'Aladdin (1992)']

[2, 'Lion King, The (1994)']

[2, 'Beauty and the Beast (1991)']

[2, 'Finding Nemo (2003)']

[2, 'Mask, The (1994)']

[2, 'Monsters, Inc. (2001)']

[2, 'Pretty Woman (1990)']

[2, 'Mrs. Doubtfire (1993)']

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[2, 'Willy Wonka & the Chocolate Factory (1971)']

[2, 'Four Weddings and a Funeral (1994)']

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[2, 'Birdcage, The (1996)']

[2, 'Big (1988)']

[2, 'Shrek 2 (2004)']

[2, 'Meet the Parents (2000)']

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[2, "Mr. Holland's Opus (1995)"]

[2, 'Ice Age (2002)']

[2, 'Snow White and the Seven Dwarfs (1937)']

[2, 'Dave (1993)']

[2, 'Addams Family Values (1993)']

[2, 'American President, The (1995)']

[2, 'Grease (1978)']

[2, 'Honey, I Shrunk the Kids (1989)']

[2, 'Santa Clause, The (1994)']

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[2, 'Mary Poppins (1964)']

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[2, 'School of Rock (2003)']

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[2, 'Naked Gun 33 1/3: The Final Insult (1994)']

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[2, '10 Things I Hate About You (1999)']

[2, 'Love Actually (2003)']

[2, 'Inside Out (2015)']

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[2, 'Gremlins (1984)']

[2, "City Slickers II: The Legend of Curly's Gold (1994)"]

[2, 'Father of the Bride Part II (1995)']

[2, 'Disclosure (1994)']

[2, 'What Women Want (2000)']

[2, 'Scary Movie (2000)']

[2, 'So I Married an Axe Murderer (1993)']

[2, 'French Kiss (1995)']

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[3, 'Independence Day (a.k.a. ID4) (1996)']

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[3, 'Fifth Element, The (1997)']

[3, 'X-Men (2000)']

[3, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[3, 'Star Wars: Episode I - The Phantom Menace (1999)']

[3, 'Stargate (1994)']

[3, 'Waterworld (1995)']

[3, 'Iron Man (2008)']

[3, 'Star Trek: Generations (1994)']

[3, 'Matrix Reloaded, The (2003)']

[3, 'Back to the Future Part II (1989)']

[3, 'Armageddon (1998)']

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[3, 'Back to the Future Part III (1990)']

[3, 'Contact (1997)']

[3, 'Star Wars: Episode II - Attack of the Clones (2002)']

[3, 'X2: X-Men United (2003)']

[3, 'Star Trek: First Contact (1996)']

[3, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[3, 'Demolition Man (1993)']

[3, 'Matrix Revolutions, The (2003)']

[3, 'Mars Attacks! (1996)']

[3, 'Avengers, The (2012)']

[3, 'I, Robot (2004)']

[3, 'Starship Troopers (1997)']

[3, 'Predator (1987)']

[3, 'Guardians of the Galaxy (2014)']

[3, 'Star Trek (2009)']

[3, 'Star Trek II: The Wrath of Khan (1982)']

[3, 'RoboCop (1987)']

[3, 'Judge Dredd (1995)']

[3, 'Superman (1978)']

[3, 'Galaxy Quest (1999)']

[3, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[3, 'I Am Legend (2007)']

[3, 'A.I. Artificial Intelligence (2001)']

[3, 'Alien³ (a.k.a. Alien 3) (1992)']

[3, 'Signs (2002)']

[3, 'Species (1995)']

[3, 'Star Wars: Episode VII - The Force Awakens (2015)']

[3, 'Star Trek IV: The Voyage Home (1986)']

[3, 'Edge of Tomorrow (2014)']

[3, 'Johnny Mnemonic (1995)']

[3, 'Serenity (2005)']

[3, 'Iron Man 2 (2010)']

[3, 'Wild Wild West (1999)']

[3, 'Deep Impact (1998)']

[3, 'Terminator 3: Rise of the Machines (2003)']

[3, 'Alien: Resurrection (1997)']

[3, 'X-Files: Fight the Future, The (1998)']

[3, 'Highlander (1986)']

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[4, 'Matrix, The (1999)']

[4, 'Star Wars: Episode IV - A New Hope (1977)']

[4, 'Jurassic Park (1993)']

[4, 'Terminator 2: Judgment Day (1991)']

[4, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[4, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[4, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[4, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[4, 'Lord of the Rings: The Two Towers, The (2002)']

[4, 'Lord of the Rings: The Return of the King, The (2003)']

[4, 'Back to the Future (1985)']

[4, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[4, 'Gladiator (2000)']

[4, 'Dark Knight, The (2008)']

[4, 'Inception (2010)']

[4, 'Terminator, The (1984)']

[4, 'Die Hard (1988)']

[4, 'Blade Runner (1982)']

[4, 'Alien (1979)']

[4, 'E.T. the Extra-Terrestrial (1982)']

[4, 'Aliens (1986)']

[4, 'Batman Begins (2005)']

[4, 'Minority Report (2002)']

[4, '2001: A Space Odyssey (1968)']

[4, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[4, 'WALL·E (2008)']

[4, 'V for Vendetta (2006)']

[4, 'Avatar (2009)']

[4, 'Interstellar (2014)']

[4, 'Gattaca (1997)']

[4, 'Dark Knight Rises, The (2012)']

[4, '300 (2007)']

[4, 'District 9 (2009)']

[4, 'Abyss, The (1989)']

[4, 'The Martian (2015)']

[4, 'Brazil (1985)']

[4, 'Children of Men (2006)']

[4, 'Close Encounters of the Third Kind (1977)']

[4, 'Mad Max: Fury Road (2015)']

[4, 'Planet of the Apes (1968)']

[4, 'Ex Machina (2015)']

[4, 'Gravity (2013)']

[4, 'Dark City (1998)']

[4, 'Watchmen (2009)']

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[5, 'Shrek (2001)']

[5, 'Princess Bride, The (1987)']

[5, 'Monty Python and the Holy Grail (1975)']

[5, 'Groundhog Day (1993)']

[5, 'Ace Ventura: Pet Detective (1994)']

[5, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[5, 'Big Lebowski, The (1998)']

[5, "Ferris Bueller's Day Off (1986)"]

[5, "There's Something About Mary (1998)"]

[5, 'Austin Powers: The Spy Who Shagged Me (1999)']

[5, 'American Pie (1999)']

[5, 'Breakfast Club, The (1985)']

[5, 'Clerks (1994)']

[5, 'O Brother, Where Art Thou? (2000)']

[5, 'Austin Powers: International Man of Mystery (1997)']

[5, 'Office Space (1999)']

[5, "Monty Python's Life of Brian (1979)"]

[5, 'Get Shorty (1995)']

[5, 'Who Framed Roger Rabbit? (1988)']

[5, 'Beetlejuice (1988)']

[5, 'Airplane! (1980)']

[5, 'Blues Brothers, The (1980)']

[5, 'Fish Called Wanda, A (1988)']

[5, 'Shaun of the Dead (2004)']

[5, 'Lock, Stock & Two Smoking Barrels (1998)']

[5, 'Little Miss Sunshine (2006)']

[5, 'Juno (2007)']

[5, 'South Park: Bigger, Longer and Uncut (1999)']

[5, 'Dogma (1999)']

[5, 'High Fidelity (2000)']

[5, 'Scream (1996)']

[5, 'This Is Spinal Tap (1984)']

[5, 'Hangover, The (2009)']

[5, 'Annie Hall (1977)']

[5, 'Royal Tenenbaums, The (2001)']

[5, 'Young Frankenstein (1974)']

[5, 'Raising Arizona (1987)']

[5, 'Wallace & Gromit: The Wrong Trousers (1993)']

[5, '40-Year-Old Virgin, The (2005)']

[5, 'Rushmore (1998)']

[5, 'Cable Guy, The (1996)']

[5, 'Hot Fuzz (2007)']

[5, "Wayne's World (1992)"]

[5, 'Grosse Pointe Blank (1997)']

[5, 'Deadpool (2016)']

[5, 'My Cousin Vinny (1992)']

[5, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[5, 'Zombieland (2009)']

[5, 'Chasing Amy (1997)']

[5, 'Election (1999)']

[5, 'Superbad (2007)']

[5, 'Christmas Story, A (1983)']

[5, 'Spaceballs (1987)']

[5, 'Army of Darkness (1993)']

[5, 'Wallace & Gromit: A Close Shave (1995)']

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[5, 'Beverly Hills Cop (1984)']

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[6, 'Memento (2000)']

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[6, 'Reservoir Dogs (1992)']

[6, 'Godfather: Part II, The (1974)']

[6, 'Kill Bill: Vol. 1 (2003)']

[6, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

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[6, 'Clockwork Orange, A (1971)']

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[6, 'Trainspotting (1996)']

[6, 'Kill Bill: Vol. 2 (2004)']

[6, 'L.A. Confidential (1997)']

[6, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[6, 'Apocalypse Now (1979)']

[6, 'Full Metal Jacket (1987)']

[6, 'Departed, The (2006)']

[6, 'Snatch (2000)']

[6, 'Heat (1995)']

[6, 'Jaws (1975)']

[6, 'Inglourious Basterds (2009)']

[6, 'Sin City (2005)']

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[6, 'Requiem for a Dream (2000)']

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[6, 'Rear Window (1954)']

[6, 'City of God (Cidade de Deus) (2002)']

[6, 'No Country for Old Men (2007)']

[6, 'Casino (1995)']

[6, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[6, 'Chinatown (1974)']

[6, 'North by Northwest (1959)']

[6, 'Platoon (1986)']

[6, '12 Angry Men (1957)']

[6, 'Untouchables, The (1987)']

[6, 'Vertigo (1958)']

[6, 'Wolf of Wall Street, The (2013)']

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[6, 'True Romance (1993)']

[6, 'Butch Cassidy and the Sundance Kid (1969)']

[6, 'Exorcist, The (1973)']

[6, 'Scarface (1983)']

[6, 'Unforgiven (1992)']

[6, 'Black Swan (2010)']

[6, 'Seven Samurai (Shichinin no samurai) (1954)']

[6, 'Gone Girl (2014)']

[6, 'Maltese Falcon, The (1941)']

[6, 'Old Boy (2003)']

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[6, 'Cool Hand Luke (1967)']

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[7, 'Batman (1989)']

[7, 'True Lies (1994)']

[7, 'Speed (1994)']

[7, 'Indiana Jones and the Last Crusade (1989)']

[7, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[7, 'Mission: Impossible (1996)']

[7, 'Die Hard: With a Vengeance (1995)']

[7, 'Rock, The (1996)']

[7, "Ocean's Eleven (2001)"]

[7, 'Batman Forever (1995)']

[7, 'Twister (1996)']

[7, 'Incredibles, The (2004)']

[7, 'Spider-Man (2002)']

[7, 'Bourne Identity, The (2002)']

[7, 'GoldenEye (1995)']

[7, 'Clear and Present Danger (1994)']

[7, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[7, 'Outbreak (1995)']

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[7, 'Jumanji (1995)']

[7, 'Firm, The (1993)']

[7, 'Cliffhanger (1993)']

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[7, 'Harry Potter and the Prisoner of Azkaban (2004)']

[7, 'Crimson Tide (1995)']

[7, 'Hunt for Red October, The (1990)']

[7, 'Harry Potter and the Chamber of Secrets (2002)']

[7, 'Spider-Man 2 (2004)']

[7, 'Broken Arrow (1996)']

[7, 'Bourne Ultimatum, The (2007)']

[7, 'Casino Royale (2006)']

[7, 'Top Gun (1986)']

[7, 'Face/Off (1997)']

[7, 'Bourne Supremacy, The (2004)']

[7, 'Mummy, The (1999)']

[7, 'Lethal Weapon (1987)']

[7, 'Harry Potter and the Goblet of Fire (2005)']

[7, 'Mission: Impossible II (2000)']

[7, 'In the Line of Fire (1993)']

[7, "Charlie's Angels (2000)"]

[7, 'Die Hard 2 (1990)']

[7, 'Maverick (1994)']

[7, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[7, 'Lost World: Jurassic Park, The (1997)']

[7, 'Enemy of the State (1998)']

[7, 'Eraser (1996)']

[7, 'Patriot, The (2000)']

[7, 'Con Air (1997)']

[7, 'Air Force One (1997)']

[7, 'Sherlock Holmes (2009)']

[7, 'Harry Potter and the Order of the Phoenix (2007)']

[7, 'Tombstone (1993)']

[7, 'Desperado (1995)']

[7, 'Harry Potter and the Half-Blood Prince (2009)']

[7, 'From Dusk Till Dawn (1996)']

[7, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[7, 'Beverly Hills Cop III (1994)']

[7, 'Congo (1995)']

[7, 'Mask of Zorro, The (1998)']

[7, 'Ransom (1996)']

[7, 'How to Train Your Dragon (2010)']

[7, 'The Hunger Games (2012)']

[7, 'Dragonheart (1996)']

[7, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[7, 'Italian Job, The (2003)']

[7, 'Batman Returns (1992)']

[7, 'Lethal Weapon 2 (1989)']

[7, 'Romancing the Stone (1984)']

[7, 'Last Action Hero (1993)']

[7, 'Blade (1998)']

[7, 'Mr. & Mrs. Smith (2005)']

[7, 'Bad Boys (1995)']

[7, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[7, 'Tomorrow Never Dies (1997)']

[7, 'Goldfinger (1964)']

[7, 'Three Musketeers, The (1993)']

[7, 'Crocodile Dundee (1986)']

[7, 'Sneakers (1992)']

[7, 'Rush Hour (1998)']

[7, 'Thomas Crown Affair, The (1999)']

[7, 'Gone in 60 Seconds (2000)']

[7, 'Taken (2008)']

[7, "Pirates of the Caribbean: At World's End (2007)"]

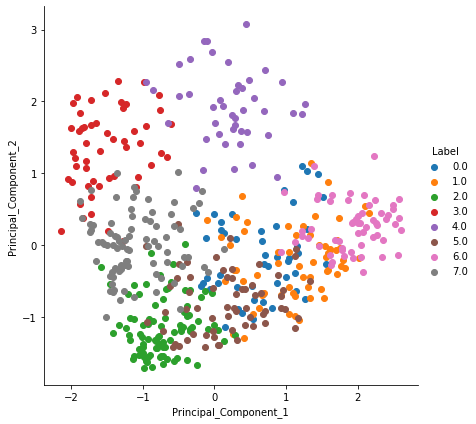
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.16447502603227615

Davies-Bouldin Index: 1.7631386131804223

Calinski-Harabasz Score: 78.68026841157716

Test 75

Test type: KMeans

Parameters: Num Clusters i = 9

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[0, 'Eternal Sunshine of the Spotless Mind (2004)']

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[0, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[0, 'Interview with the Vampire: The Vampire Chronicles (1994)']

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[0, 'Edward Scissorhands (1990)']

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[0, 'Ed Wood (1994)']

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[0, 'Moulin Rouge (2001)']

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[0, 'Boogie Nights (1997)']

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[0, 'Bowling for Columbine (2002)']

[0, 'Pleasantville (1998)']

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[1, 'Toy Story (1995)']

[1, 'Aladdin (1992)']

[1, 'Lion King, The (1994)']

[1, 'Shrek (2001)']

[1, 'Pirates of the Caribbean: The Curse of the Black Pearl (2003)']

[1, 'Beauty and the Beast (1991)']

[1, 'Finding Nemo (2003)']

[1, 'E.T. the Extra-Terrestrial (1982)']

[1, 'Monsters, Inc. (2001)']

[1, 'Babe (1995)']

[1, 'Incredibles, The (2004)']

[1, 'Home Alone (1990)']

[1, 'Willy Wonka & the Chocolate Factory (1971)']

[1, 'Toy Story 2 (1999)']

[1, "Harry Potter and the Sorcerer's Stone (a.k.a. Harry Potter and the Philosopher's Stone) (2001)"]

[1, 'Up (2009)']

[1, 'Wizard of Oz, The (1939)']

[1, 'Jumanji (1995)']

[1, 'Harry Potter and the Prisoner of Azkaban (2004)']

[1, "Bug's Life, A (1998)"]

[1, 'Harry Potter and the Chamber of Secrets (2002)']

[1, 'Big (1988)']

[1, 'Shrek 2 (2004)']

[1, 'Ratatouille (2007)']

[1, 'Harry Potter and the Goblet of Fire (2005)']

[1, 'Chicken Run (2000)']

[1, 'Ice Age (2002)']

[1, 'Honey, I Shrunk the Kids (1989)']

[1, 'Santa Clause, The (1994)']

[1, 'Little Mermaid, The (1989)']

[1, 'Mary Poppins (1964)']

[1, 'Toy Story 3 (2010)']

[1, 'Harry Potter and the Order of the Phoenix (2007)']

[1, 'Harry Potter and the Half-Blood Prince (2009)']

[1, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[1, 'How to Train Your Dragon (2010)']

[1, 'Dragonheart (1996)']

[1, 'Inside Out (2015)']

[1, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[1, 'Pinocchio (1940)']

[1, 'Casper (1995)']

[1, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[1, 'Charlie and the Chocolate Factory (2005)']

[1, 'Goonies, The (1985)']

[1, 'Gremlins (1984)']

[1, 'Kung Fu Panda (2008)']

--------- NEW CLUSTER -----------

[2, 'Matrix, The (1999)']

[2, 'Star Wars: Episode IV - A New Hope (1977)']

[2, 'Jurassic Park (1993)']

[2, 'Terminator 2: Judgment Day (1991)']

[2, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[2, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[2, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[2, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[2, 'Lord of the Rings: The Two Towers, The (2002)']

[2, 'Lord of the Rings: The Return of the King, The (2003)']

[2, 'Back to the Future (1985)']

[2, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[2, 'Gladiator (2000)']

[2, 'Dark Knight, The (2008)']

[2, 'Inception (2010)']

[2, 'Terminator, The (1984)']

[2, 'Indiana Jones and the Last Crusade (1989)']

[2, 'Die Hard (1988)']

[2, 'Blade Runner (1982)']

[2, 'Alien (1979)']

[2, 'Aliens (1986)']

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[5, 'Serenity (2005)']

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[5, 'Alien: Resurrection (1997)']

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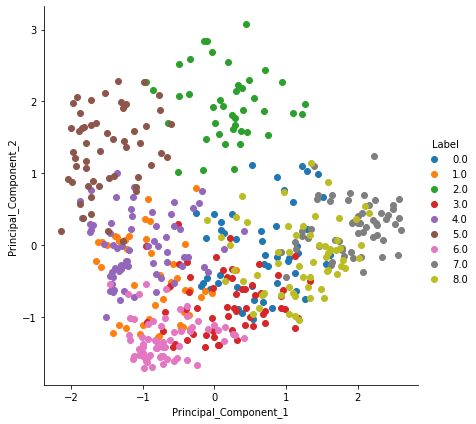
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1676007882444032

Davies-Bouldin Index: 1.7086750194005849

Calinski-Harabasz Score: 75.83769154389195

Test 76

Test type: KMeans

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[2, 'Lord of the Rings: The Return of the King, The (2003)']

[2, 'Fugitive, The (1993)']

[2, 'Saving Private Ryan (1998)']

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[2, 'Indiana Jones and the Last Crusade (1989)']

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[2, 'Jaws (1975)']

[2, 'Hunt for Red October, The (1990)']

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[2, 'Black Hawk Down (2001)']

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[3, 'Taken (2008)']

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[4, 'Men in Black (a.k.a. MIB) (1997)']

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[5, 'Zombieland (2009)']

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[6, 'Ed Wood (1994)']

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[7, 'Jurassic Park (1993)']

[7, 'Terminator 2: Judgment Day (1991)']

[7, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[7, 'Star Wars: Episode VI - Return of the Jedi (1983)']

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[7, 'Avatar (2009)']

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[7, 'Children of Men (2006)']

[7, 'Close Encounters of the Third Kind (1977)']

[7, 'A.I. Artificial Intelligence (2001)']

[7, 'Mad Max: Fury Road (2015)']

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[7, 'Edge of Tomorrow (2014)']

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[8, 'Finding Nemo (2003)']

[8, 'Monsters, Inc. (2001)']

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[8, 'Harry Potter and the Order of the Phoenix (2007)']

[8, 'Harry Potter and the Half-Blood Prince (2009)']

[8, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[8, 'How to Train Your Dragon (2010)']

[8, 'Inside Out (2015)']

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[8, 'Casper (1995)']

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[9, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[9, 'Truman Show, The (1998)']

[9, 'Eternal Sunshine of the Spotless Mind (2004)']

[9, 'Being John Malkovich (1999)']

[9, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[9, 'Donnie Darko (2001)']

[9, 'Edward Scissorhands (1990)']

[9, 'Natural Born Killers (1994)']

[9, 'Prestige, The (2006)']

[9, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

[9, 'Nightmare Before Christmas, The (1993)']

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[9, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

[9, 'Run Lola Run (Lola rennt) (1998)']

[9, 'Shutter Island (2010)']

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[9, 'Princess Mononoke (Mononoke-hime) (1997)']

[9, 'Grand Budapest Hotel, The (2014)']

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[9, 'Fantasia (1940)']

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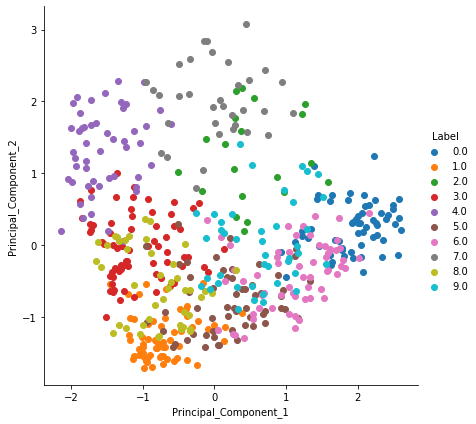
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.17043527105714176

Davies-Bouldin Index: 1.6637898341443378

Calinski-Harabasz Score: 71.47665017590047

Test 77

Test type: KMeans

Parameters: Num Clusters i = 11

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[1, 'Clueless (1995)']

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[1, 'When Harry Met Sally... (1989)']

[1, 'While You Were Sleeping (1995)']

[1, 'Ace Ventura: When Nature Calls (1995)']

[1, 'Birdcage, The (1996)']

[1, 'Meet the Parents (2000)']

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[2, 'Intouchables (2011)']

[2, 'Sling Blade (1996)']

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[3, 'Fugitive, The (1993)']

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[3, 'Mask of Zorro, The (1998)']

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[3, 'Lethal Weapon 2 (1989)']

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[3, 'Sneakers (1992)']

[3, 'Rush Hour (1998)']

[3, 'Thomas Crown Affair, The (1999)']

[3, 'Beverly Hills Cop (1984)']

[3, 'Gone in 60 Seconds (2000)']

[3, 'Taken (2008)']

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[4, 'Shawshank Redemption, The (1994)']

[4, 'Pulp Fiction (1994)']

[4, 'Silence of the Lambs, The (1991)']

[4, 'Fight Club (1999)']

[4, 'Usual Suspects, The (1995)']

[4, 'American Beauty (1999)']

[4, 'Godfather, The (1972)']

[4, 'Seven (a.k.a. Se7en) (1995)']

[4, 'Fargo (1996)']

[4, 'Memento (2000)']

[4, "One Flew Over the Cuckoo's Nest (1975)"]

[4, 'Reservoir Dogs (1992)']

[4, 'Godfather: Part II, The (1974)']

[4, 'Kill Bill: Vol. 1 (2003)']

[4, 'Léon: The Professional (a.k.a. The Professional) (Léon) (1994)']

[4, 'Goodfellas (1990)']

[4, 'American History X (1998)']

[4, 'Shining, The (1980)']

[4, 'Clockwork Orange, A (1971)']

[4, 'Taxi Driver (1976)']

[4, 'Trainspotting (1996)']

[4, 'Kill Bill: Vol. 2 (2004)']

[4, 'L.A. Confidential (1997)']

[4, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[4, 'Apocalypse Now (1979)']

[4, 'Full Metal Jacket (1987)']

[4, 'Departed, The (2006)']

[4, 'Snatch (2000)']

[4, 'Heat (1995)']

[4, 'Jaws (1975)']

[4, 'Inglourious Basterds (2009)']

[4, 'Sin City (2005)']

[4, 'Psycho (1960)']

[4, 'Requiem for a Dream (2000)']

[4, 'Django Unchained (2012)']

[4, 'Rear Window (1954)']

[4, 'City of God (Cidade de Deus) (2002)']

[4, 'No Country for Old Men (2007)']

[4, 'Casino (1995)']

[4, 'Good, the Bad and the Ugly, The (Buono, il brutto, il cattivo, Il) (1966)']

[4, 'Chinatown (1974)']

[4, 'North by Northwest (1959)']

[4, 'Platoon (1986)']

[4, '12 Angry Men (1957)']

[4, 'Untouchables, The (1987)']

[4, 'Wolf of Wall Street, The (2013)']

[4, 'Sting, The (1973)']

[4, 'True Romance (1993)']

[4, 'Butch Cassidy and the Sundance Kid (1969)']

[4, 'Exorcist, The (1973)']

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[4, 'Unforgiven (1992)']

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[4, 'Seven Samurai (Shichinin no samurai) (1954)']

[4, 'Gone Girl (2014)']

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[5, 'Harry Potter and the Prisoner of Azkaban (2004)']

[5, 'Harry Potter and the Chamber of Secrets (2002)']

[5, 'Spider-Man 2 (2004)']

[5, 'Mummy, The (1999)']

[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[5, 'Lost World: Jurassic Park, The (1997)']

[5, 'Sherlock Holmes (2009)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

[5, 'Harry Potter and the Half-Blood Prince (2009)']

[5, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[5, 'The Hunger Games (2012)']

[5, 'Dragonheart (1996)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, "Pirates of the Caribbean: At World's End (2007)"]

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[6, 'Princess Bride, The (1987)']

[6, 'Monty Python and the Holy Grail (1975)']

[6, 'Groundhog Day (1993)']

[6, 'Ace Ventura: Pet Detective (1994)']

[6, 'Dumb & Dumber (Dumb and Dumber) (1994)']

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[6, "Ferris Bueller's Day Off (1986)"]

[6, "There's Something About Mary (1998)"]

[6, 'Austin Powers: The Spy Who Shagged Me (1999)']

[6, 'American Pie (1999)']

[6, 'Breakfast Club, The (1985)']

[6, 'Clerks (1994)']

[6, 'O Brother, Where Art Thou? (2000)']

[6, 'Austin Powers: International Man of Mystery (1997)']

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[6, 'Get Shorty (1995)']

[6, 'Who Framed Roger Rabbit? (1988)']

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[6, 'Fish Called Wanda, A (1988)']

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[6, 'Deadpool (2016)']

[6, 'My Cousin Vinny (1992)']

[6, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[6, 'Zombieland (2009)']

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[6, 'Good Morning, Vietnam (1987)']

[6, 'Three Kings (1999)']

[6, 'M\*A\*S\*H (a.k.a. MASH) (1970)']

[6, 'Some Like It Hot (1959)']

[6, 'Animal House (1978)']

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[7, "Amelie (Fabuleux destin d'Amélie Poulain, Le) (2001)"]

[7, 'Eternal Sunshine of the Spotless Mind (2004)']

[7, 'Being John Malkovich (1999)']

[7, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

[7, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[7, 'Donnie Darko (2001)']

[7, 'Edward Scissorhands (1990)']

[7, 'Natural Born Killers (1994)']

[7, 'Prestige, The (2006)']

[7, 'Spirited Away (Sen to Chihiro no kamikakushi) (2001)']

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[7, 'Pleasantville (1998)']

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[7, 'Birds, The (1963)']

[7, '(500) Days of Summer (2009)']

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[8, 'Matrix, The (1999)']

[8, 'Star Wars: Episode IV - A New Hope (1977)']

[8, 'Jurassic Park (1993)']

[8, 'Braveheart (1995)']

[8, 'Terminator 2: Judgment Day (1991)']

[8, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[8, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[8, 'Lord of the Rings: The Two Towers, The (2002)']

[8, 'Lord of the Rings: The Return of the King, The (2003)']

[8, 'Back to the Future (1985)']

[8, 'Gladiator (2000)']

[8, 'Dark Knight, The (2008)']

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[8, 'Indiana Jones and the Last Crusade (1989)']

[8, 'Die Hard (1988)']

[8, 'Aliens (1986)']

[8, 'Batman Begins (2005)']

[8, 'Dark Knight Rises, The (2012)']

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[9, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[9, 'Inception (2010)']

[9, 'Blade Runner (1982)']

[9, 'Alien (1979)']

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[9, '2001: A Space Odyssey (1968)']

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[9, 'Avatar (2009)']

[9, 'Interstellar (2014)']

[9, 'Gattaca (1997)']

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[9, 'District 9 (2009)']

[9, 'Abyss, The (1989)']

[9, 'The Martian (2015)']

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[9, 'Ex Machina (2015)']

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[10, 'Finding Nemo (2003)']

[10, 'E.T. the Extra-Terrestrial (1982)']

[10, 'Monsters, Inc. (2001)']

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[10, 'Willy Wonka & the Chocolate Factory (1971)']

[10, 'Toy Story 2 (1999)']

[10, 'Up (2009)']

[10, 'Wizard of Oz, The (1939)']

[10, "Bug's Life, A (1998)"]

[10, 'Big (1988)']

[10, 'Shrek 2 (2004)']

[10, 'Ratatouille (2007)']

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[10, 'Ice Age (2002)']

[10, 'Snow White and the Seven Dwarfs (1937)']

[10, 'Honey, I Shrunk the Kids (1989)']

[10, 'Santa Clause, The (1994)']

[10, 'Sound of Music, The (1965)']

[10, 'Little Mermaid, The (1989)']

[10, 'Mary Poppins (1964)']

[10, 'Toy Story 3 (2010)']

[10, 'How to Train Your Dragon (2010)']

[10, 'Inside Out (2015)']

[10, 'Christmas Story, A (1983)']

[10, 'Pinocchio (1940)']

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[10, 'Charlie and the Chocolate Factory (2005)']

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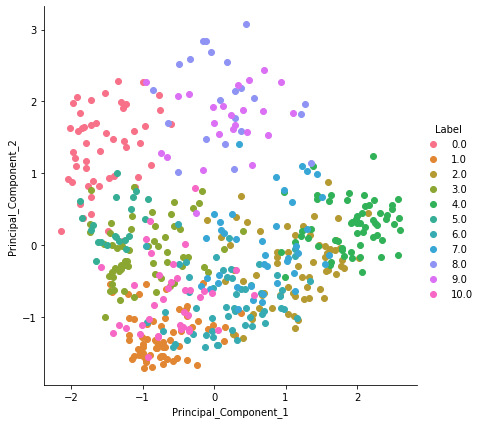
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1755256688231634

Davies-Bouldin Index: 1.6250612969949474

Calinski-Harabasz Score: 68.55418992639721

Test 78

Test type: KMeans

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[1, 'Independence Day (a.k.a. ID4) (1996)']

[1, 'Men in Black (a.k.a. MIB) (1997)']

[1, 'Fifth Element, The (1997)']

[1, 'X-Men (2000)']

[1, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[1, 'Star Wars: Episode I - The Phantom Menace (1999)']

[1, 'Stargate (1994)']

[1, 'Waterworld (1995)']

[1, 'Iron Man (2008)']

[1, 'Star Trek: Generations (1994)']

[1, 'Matrix Reloaded, The (2003)']

[1, 'Back to the Future Part II (1989)']

[1, 'Armageddon (1998)']

[1, 'Total Recall (1990)']

[1, 'Back to the Future Part III (1990)']

[1, 'Star Wars: Episode II - Attack of the Clones (2002)']

[1, 'X2: X-Men United (2003)']

[1, 'Star Trek: First Contact (1996)']

[1, 'Star Wars: Episode III - Revenge of the Sith (2005)']

[1, 'Demolition Man (1993)']

[1, 'Matrix Revolutions, The (2003)']

[1, 'Mars Attacks! (1996)']

[1, 'Avengers, The (2012)']

[1, 'I, Robot (2004)']

[1, 'Starship Troopers (1997)']

[1, 'Predator (1987)']

[1, 'Guardians of the Galaxy (2014)']

[1, 'Star Trek (2009)']

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[1, 'RoboCop (1987)']

[1, 'Judge Dredd (1995)']

[1, 'Superman (1978)']

[1, 'Galaxy Quest (1999)']

[1, 'Men in Black II (a.k.a. MIIB) (a.k.a. MIB 2) (2002)']

[1, 'I Am Legend (2007)']

[1, 'Alien³ (a.k.a. Alien 3) (1992)']

[1, 'Signs (2002)']

[1, 'Species (1995)']

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[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Johnny Mnemonic (1995)']

[1, 'Serenity (2005)']

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[1, 'Wild Wild West (1999)']

[1, 'Deep Impact (1998)']

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[1, 'Alien: Resurrection (1997)']

[1, 'X-Files: Fight the Future, The (1998)']

[1, 'Highlander (1986)']

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[2, 'Truman Show, The (1998)']

[2, 'Eternal Sunshine of the Spotless Mind (2004)']

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[2, 'Edward Scissorhands (1990)']

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[2, "Pan's Labyrinth (Laberinto del fauno, El) (2006)"]

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[3, 'Casino Royale (2006)']

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[3, 'Die Hard 2 (1990)']

[3, 'Enemy of the State (1998)']

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[5, 'Father of the Bride Part II (1995)']

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[6, 'Dark Knight, The (2008)']

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[6, 'Die Hard (1988)']

[6, 'Batman Begins (2005)']

[6, 'Crouching Tiger, Hidden Dragon (Wo hu cang long) (2000)']

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[6, 'Last Samurai, The (2003)']

[6, 'Black Hawk Down (2001)']

[6, 'Last of the Mohicans, The (1992)']

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[7, 'Ace Ventura: Pet Detective (1994)']

[7, 'Mask, The (1994)']

[7, 'Dumb & Dumber (Dumb and Dumber) (1994)']

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[7, 'Austin Powers: The Spy Who Shagged Me (1999)']

[7, 'American Pie (1999)']

[7, 'Austin Powers: International Man of Mystery (1997)']

[7, 'Ace Ventura: When Nature Calls (1995)']

[7, 'Beetlejuice (1988)']

[7, 'Meet the Parents (2000)']

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[7, 'Nutty Professor, The (1996)']

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[7, 'Dogma (1999)']

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[7, 'Robin Hood: Men in Tights (1993)']

[7, 'School of Rock (2003)']

[7, "Wayne's World (1992)"]

[7, 'Naked Gun 33 1/3: The Final Insult (1994)']

[7, 'Deadpool (2016)']

[7, 'My Cousin Vinny (1992)']

[7, 'Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan (2006)']

[7, 'Election (1999)']

[7, 'Coneheads (1993)']

[7, 'Superbad (2007)']

[7, 'Hot Shots! Part Deux (1993)']

[7, 'Spaceballs (1987)']

[7, 'Army of Darkness (1993)']

[7, 'Crocodile Dundee (1986)']

[7, 'Beverly Hills Cop (1984)']

[7, 'Scary Movie (2000)']

[7, 'So I Married an Axe Murderer (1993)']

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[8, 'Matrix, The (1999)']

[8, 'Star Wars: Episode IV - A New Hope (1977)']

[8, 'Jurassic Park (1993)']

[8, 'Terminator 2: Judgment Day (1991)']

[8, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[8, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[8, 'Back to the Future (1985)']

[8, 'Twelve Monkeys (a.k.a. 12 Monkeys) (1995)']

[8, 'Inception (2010)']

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[8, 'Blade Runner (1982)']

[8, 'Alien (1979)']

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[8, 'Minority Report (2002)']

[8, '2001: A Space Odyssey (1968)']

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[8, 'V for Vendetta (2006)']

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[8, 'Edge of Tomorrow (2014)']

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[9, 'Mummy, The (1999)']

[9, 'Harry Potter and the Goblet of Fire (2005)']

[9, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

[9, 'Lost World: Jurassic Park, The (1997)']

[9, 'Harry Potter and the Order of the Phoenix (2007)']

[9, 'Harry Potter and the Half-Blood Prince (2009)']

[9, 'Harry Potter and the Deathly Hallows: Part 1 (2010)']

[9, 'How to Train Your Dragon (2010)']

[9, 'The Hunger Games (2012)']

[9, 'Dragonheart (1996)']

[9, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[9, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[9, "Pirates of the Caribbean: At World's End (2007)"]

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[11, 'Untouchables, The (1987)']

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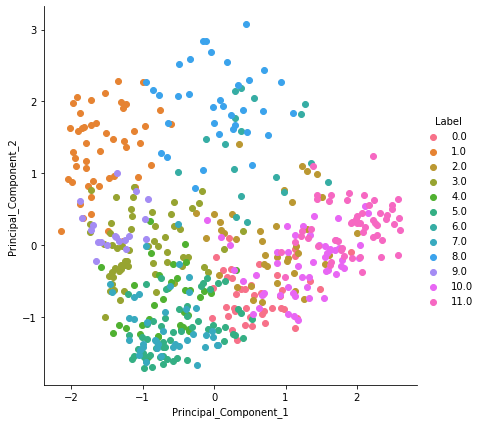
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/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.16612760792968362

Davies-Bouldin Index: 1.6398083744317684

Calinski-Harabasz Score: 65.10094675945244

Running regular GMM on range

Test 79

Test type: GMM

Parameters: Num Components i = 6

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[0, 'Deer Hunter, The (1978)']

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[1, 'Matrix, The (1999)']

[1, 'Star Wars: Episode IV - A New Hope (1977)']

[1, 'Jurassic Park (1993)']

[1, 'Terminator 2: Judgment Day (1991)']

[1, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[1, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[1, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[1, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[1, 'Lord of the Rings: The Two Towers, The (2002)']

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[1, 'Back to the Future (1985)']

[1, 'Independence Day (a.k.a. ID4) (1996)']

[1, 'Men in Black (a.k.a. MIB) (1997)']

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[1, 'Indiana Jones and the Last Crusade (1989)']

[1, 'Alien (1979)']

[1, 'E.T. the Extra-Terrestrial (1982)']

[1, 'Fifth Element, The (1997)']

[1, 'X-Men (2000)']

[1, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

[1, 'Star Wars: Episode I - The Phantom Menace (1999)']

[1, 'Aliens (1986)']

[1, 'Stargate (1994)']

[1, 'Batman Begins (2005)']

[1, 'Minority Report (2002)']

[1, 'Waterworld (1995)']

[1, 'WALL·E (2008)']

[1, 'V for Vendetta (2006)']

[1, 'Iron Man (2008)']

[1, 'Star Trek: Generations (1994)']

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[1, 'Matrix Reloaded, The (2003)']

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[1, '300 (2007)']

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[1, 'Demolition Man (1993)']

[1, 'Matrix Revolutions, The (2003)']

[1, 'District 9 (2009)']

[1, 'Avengers, The (2012)']

[1, 'Abyss, The (1989)']

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[1, 'Starship Troopers (1997)']

[1, 'Predator (1987)']

[1, 'The Martian (2015)']

[1, 'Guardians of the Galaxy (2014)']

[1, 'Star Trek (2009)']

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[1, 'RoboCop (1987)']

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[1, 'Judge Dredd (1995)']

[1, 'Superman (1978)']

[1, 'Galaxy Quest (1999)']

[1, 'I Am Legend (2007)']

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[1, 'Star Trek IV: The Voyage Home (1986)']

[1, 'Edge of Tomorrow (2014)']

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[1, 'X-Files: Fight the Future, The (1998)']

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[2, 'Finding Nemo (2003)']

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[2, 'Monsters, Inc. (2001)']

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[2, 'Willy Wonka & the Chocolate Factory (1971)']

[2, 'Interview with the Vampire: The Vampire Chronicles (1994)']

[2, "Ferris Bueller's Day Off (1986)"]

[2, 'Four Weddings and a Funeral (1994)']

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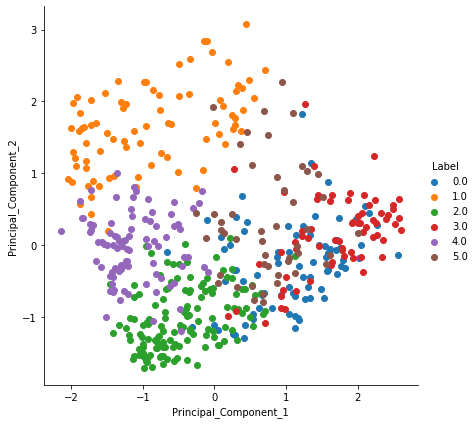
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.15241257769507843

Davies-Bouldin Index: 1.8798325075321534

Calinski-Harabasz Score: 82.05569058826876

Test 80

Test type: GMM

Parameters: Num Components i = 7

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[4, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

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[4, 'Lord of the Rings: The Two Towers, The (2002)']

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[5, 'Harry Potter and the Goblet of Fire (2005)']

[5, 'Honey, I Shrunk the Kids (1989)']

[5, 'Harry Potter and the Order of the Phoenix (2007)']

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[5, 'How to Train Your Dragon (2010)']

[5, 'Dragonheart (1996)']

[5, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[5, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[5, 'Charlie and the Chocolate Factory (2005)']

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[5, "Pirates of the Caribbean: At World's End (2007)"]

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[6, 'X-Files: Fight the Future, The (1998)']

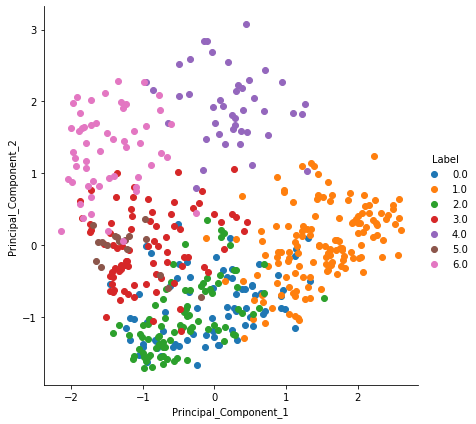
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(500, 28) to (500, 2)

/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:316: UserWarning: The `size` parameter has been renamed to `height`; please update your code.

warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.169697831548006

Davies-Bouldin Index: 1.697150081128724

Calinski-Harabasz Score: 76.82033494898747

Test 81

Test type: GMM

Parameters: Num Components i = 8

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[1, 'Princess Bride, The (1987)']

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[1, 'Dumb & Dumber (Dumb and Dumber) (1994)']

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[1, "There's Something About Mary (1998)"]

[1, 'Austin Powers: The Spy Who Shagged Me (1999)']

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[1, 'Breakfast Club, The (1985)']

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[1, 'Three Kings (1999)']

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[5, 'Exorcist, The (1973)']

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[6, 'Minority Report (2002)']

[6, '2001: A Space Odyssey (1968)']

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[6, 'Donnie Darko (2001)']

[6, 'V for Vendetta (2006)']

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[6, 'Gravity (2013)']

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[7, 'Star Wars: Episode IV - A New Hope (1977)']

[7, 'Jurassic Park (1993)']

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[7, 'Terminator 2: Judgment Day (1991)']

[7, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

[7, 'Lord of the Rings: The Fellowship of the Ring, The (2001)']

[7, 'Star Wars: Episode VI - Return of the Jedi (1983)']

[7, 'Raiders of the Lost Ark (Indiana Jones and the Raiders of the Lost Ark) (1981)']

[7, 'Lord of the Rings: The Two Towers, The (2002)']

[7, 'Lord of the Rings: The Return of the King, The (2003)']

[7, 'Back to the Future (1985)']

[7, 'Gladiator (2000)']

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[7, 'Terminator, The (1984)']

[7, 'Indiana Jones and the Last Crusade (1989)']

[7, 'Die Hard (1988)']

[7, 'Ghostbusters (a.k.a. Ghost Busters) (1984)']

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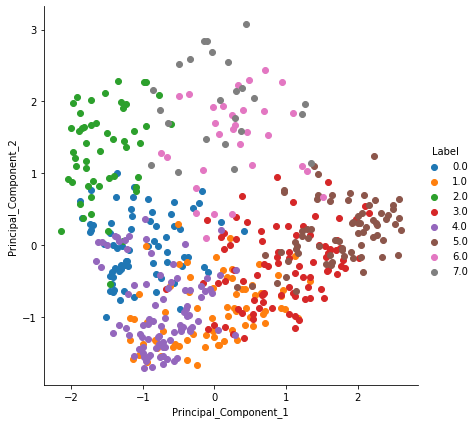
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.16318065734896903

Davies-Bouldin Index: 1.77136460140256

Calinski-Harabasz Score: 75.45640535423966

Test 82

Test type: GMM

Parameters: Num Components i = 9

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[2, 'Jumanji (1995)']

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[2, 'Cliffhanger (1993)']

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[2, 'Casino Royale (2006)']

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[2, 'Face/Off (1997)']

[2, 'Bourne Supremacy, The (2004)']

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[2, 'Mission: Impossible II (2000)']

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[2, 'Maverick (1994)']

[2, 'Honey, I Shrunk the Kids (1989)']

[2, "Pirates of the Caribbean: Dead Man's Chest (2006)"]

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[3, 'Jurassic Park (1993)']

[3, 'Terminator 2: Judgment Day (1991)']

[3, 'Star Wars: Episode V - The Empire Strikes Back (1980)']

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[3, 'Back to the Future (1985)']

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[4, 'Princess Bride, The (1987)']

[4, 'Monty Python and the Holy Grail (1975)']

[4, 'Groundhog Day (1993)']

[4, 'Ace Ventura: Pet Detective (1994)']

[4, 'Mask, The (1994)']

[4, 'Dumb & Dumber (Dumb and Dumber) (1994)']

[4, 'Big Lebowski, The (1998)']

[4, "Ferris Bueller's Day Off (1986)"]

[4, "There's Something About Mary (1998)"]

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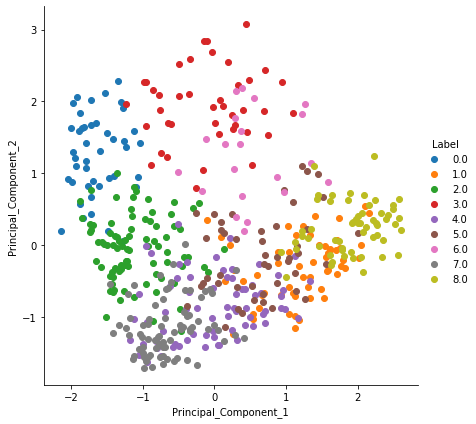
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1647122177815308

Davies-Bouldin Index: 1.7354991029526454

Calinski-Harabasz Score: 72.72617710025166

Test 83

Test type: GMM

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[3, 'Terminator 2: Judgment Day (1991)']

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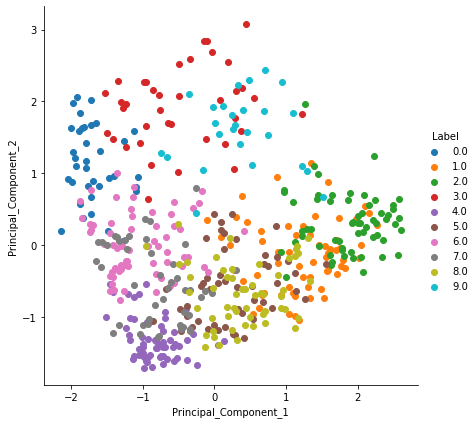
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1622443642035883

Davies-Bouldin Index: 1.692311526741229

Calinski-Harabasz Score: 70.64735066489665

Test 84

Test type: GMM

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[6, 'Harry Potter and the Goblet of Fire (2005)']

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[6, 'Harry Potter and the Order of the Phoenix (2007)']

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[6, 'Harry Potter and the Deathly Hallows: Part 2 (2011)']

[6, 'Chronicles of Narnia: The Lion, the Witch and the Wardrobe, The (2005)']

[6, 'Charlie and the Chocolate Factory (2005)']

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[7, 'Ace Ventura: Pet Detective (1994)']

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[7, 'Ace Ventura: When Nature Calls (1995)']

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[7, 'Robin Hood: Men in Tights (1993)']

[7, 'School of Rock (2003)']

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[7, 'Beverly Hills Cop III (1994)']

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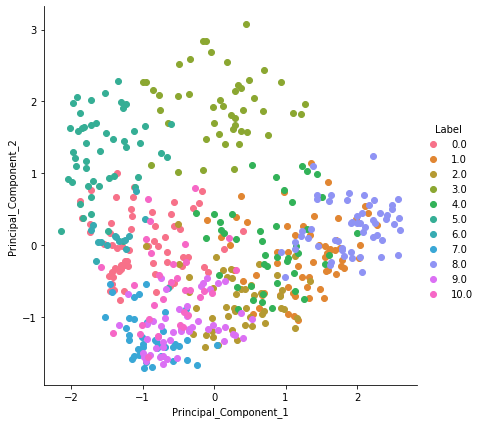
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warnings.warn(msg, UserWarning)



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Davies-Bouldin Index: 1.6234749904398988

Calinski-Harabasz Score: 67.40008683371933

Test 85

Test type: GMM

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[3, 'Mission: Impossible II (2000)']

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[3, 'Air Force One (1997)']

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[3, 'From Dusk Till Dawn (1996)']

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[3, 'Crocodile Dundee (1986)']

[3, 'Sneakers (1992)']

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[3, 'Gone in 60 Seconds (2000)']

[3, 'Taken (2008)']

[3, "Pirates of the Caribbean: At World's End (2007)"]

[3, 'Executive Decision (1996)']

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[4, 'Groundhog Day (1993)']

[4, 'Being John Malkovich (1999)']

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[4, 'Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)']

[4, 'Snatch (2000)']

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[4, 'Clerks (1994)']

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[4, 'Office Space (1999)']

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[4, 'Royal Tenenbaums, The (2001)']

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[4, 'Raising Arizona (1987)']

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[4, 'Rushmore (1998)']

[4, 'Hot Fuzz (2007)']

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[4, 'Blazing Saddles (1974)']

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[5, 'Independence Day (a.k.a. ID4) (1996)']

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[5, 'Matrix Revolutions, The (2003)']

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[6, 'How to Train Your Dragon (2010)']

[6, 'Inside Out (2015)']

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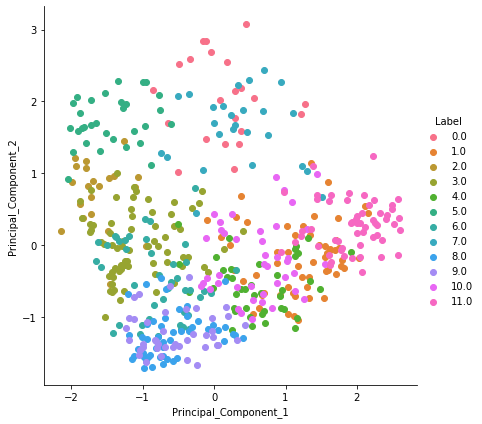
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warnings.warn(msg, UserWarning)



Silhouette Coefficient: 0.1532247268329794

Davies-Bouldin Index: 1.6830118628904167

Calinski-Harabasz Score: 64.33950617275109

Test 86

Test type: DBScan

Parameters: Radius epsilon = 3.5 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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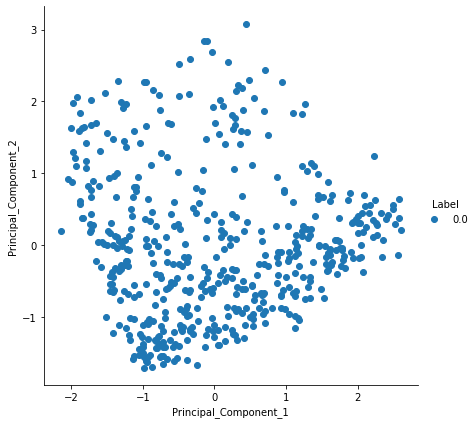
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warnings.warn(msg, UserWarning)



Test 87

Test type: DBScan

Parameters: Radius epsilon = 3.6 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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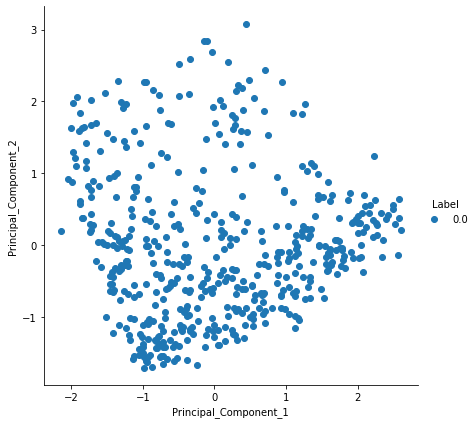
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warnings.warn(msg, UserWarning)



Test 88

Test type: DBScan

Parameters: Radius epsilon = 3.7 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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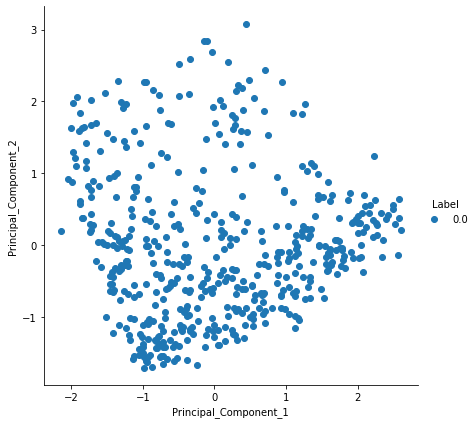
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warnings.warn(msg, UserWarning)



Test 89

Test type: DBScan

Parameters: Radius epsilon = 3.8000000000000003 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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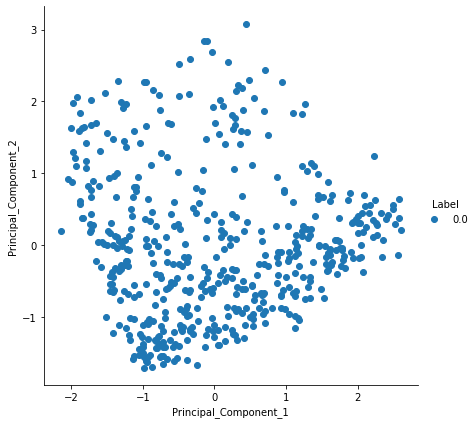
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warnings.warn(msg, UserWarning)



Test 90

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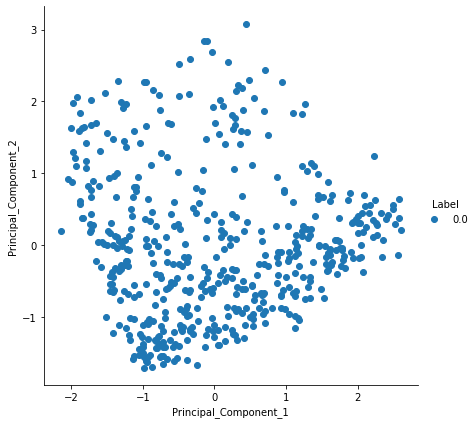
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warnings.warn(msg, UserWarning)



Test 91

Test type: DBScan

Parameters: Radius epsilon = 4.0 Min samples n = 5

Estimated number of clusters: 1

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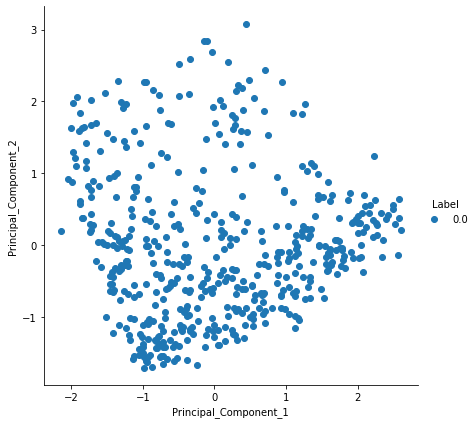
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warnings.warn(msg, UserWarning)



Test 92

Test type: DBScan

Parameters: Radius epsilon = 4.1000000000000005 Min samples n = 5

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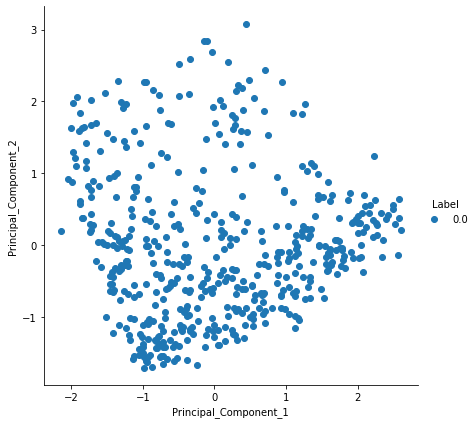
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warnings.warn(msg, UserWarning)



Test 93

Test type: DBScan

Parameters: Radius epsilon = 4.200000000000001 Min samples n = 5

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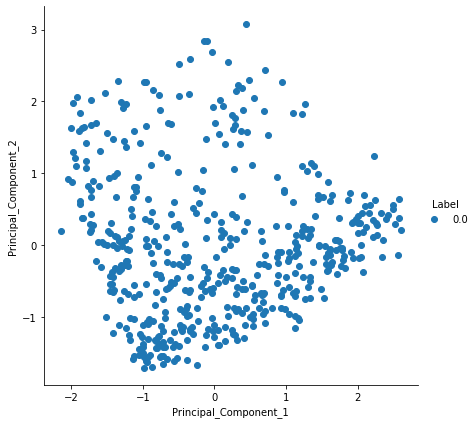
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warnings.warn(msg, UserWarning)



Test 94

Test type: DBScan

Parameters: Radius epsilon = 4.300000000000001 Min samples n = 5

Estimated number of clusters: 1

Estimated number of noise points: 0

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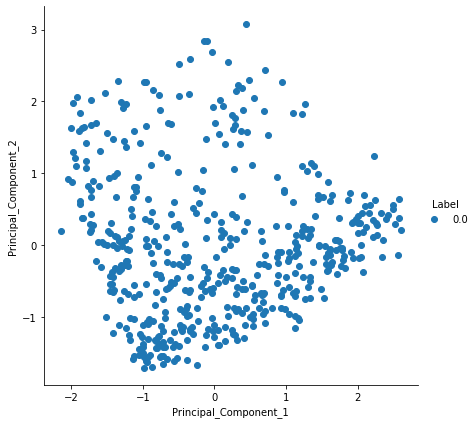
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warnings.warn(msg, UserWarning)



Test 95

Test type: DBScan

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warnings.warn(msg, UserWarning)

