



Content Analysis of American & Indian Comics on Instagram Using Machine Learning

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Abstract

Instagram is currently the third most popular social network used by Indian college students. This study draws a parallel between Indian and American-origin comics on Instagram to study the new age pop culture art in the two countries. The research was conducted by reviewing the content based on the parameters like several followers, likes, comments, and analyzing the content being generated in the two cultures by studying the type of characters, issues raised, and the primary color palette used. Content analysis using machine learning was used as the method for the research. The content is generated in India and the US. Virtual Comic culture in America seems to be more popular than the one in India. Indian comic artists take time to make comics on the social issues prevalent in society, contrary to the latter. American comic artists dedicate a significant amount of time drawing about their love life. Indian comic artists like more use of colors than the American ones. Certain similarities include Comics from both the countries, They focus majorly on their issues, that is, the artists draw about their personal lives and their everyday incidents like their difficulty of waking up in the morning, shopping, gaming, their lousy mood days, etc. Female characters tend to take the lead in the case of Instagram comics, which is proof of the changing society. Representation of political issues is almost none in the virtual comics.

Keywords: Virtual Comics, Instagram, Indian comics, American comics, Content Analysis.

Introduction

Rapid urbanization and modernization have led to a shift from traditional means of communication to the new age digital form of exchanging messages in almost every sphere of life. The coming up of new media has witnessed the death of many old school modes, with an interactive and more dynamic space to offer for everyday conversations.

A similar trend can be observed in the world of comics as well. Comics have been a part of pop culture for over 70 years now. They derive their stories from the society itself, hence reflecting the community in some ways. Comics, in their traditional form, the hardcopy books, are a significant part of pop culture. Manga comics, DC, Marvel, Archie Comics all are a rage in the society to date. As popular as these traditional comics are, many comic artists are coming out on the virtual platform to share their art. With the growing popularity of the new media, these artists find a haven in social networking to connect to millions of users and spread their art instantly.

“Gone are the days when one used to wait for the Sunday comics on the breakfast table, quickly replaced by the mighty Internet. Now digital comics are just a click away- you can read them anywhere, anytime.” (Hatfield, 2011). A survey done in late 2012 by the Pew Research Center’s Internet & American Life Project shows that young adults are more likely than others to use major social media. However, at the same time, other groups are interested in different sites and services. This means that young adults are the active users of Instagram on today’s date. “Instagram is one of the fastest growing online photo social web services, where users share their life images with other users. However, academic research related to this media is limited.” (Sheldon & Bryant, 2012).

With a platform dedicated solely to visual content, Instagram empowered photographers and video artists to share their work with a broad community. One of the most welcome surprises of this social media app was it’s enabling of comic artists who had, for far too long, struggled to get their work the attention it deserved. Countless cartoonists have taken social media to share their comics one strip at a time to their vast, eager audiences. Instagram, especially, has become a platform where these cartoonists regularly release their works. With the coming up of virtual comics, the traditional comic books and strips are disappearing or are being replaced with the virtual doodles available on the screen of a smartphone.

The comics available on social media sites like Instagram are very similar to traditional comics. However, there are no periodicals or book formats, preferably a strip about a particular incident, like the ones in the newspaper. The medium is different, of course, with the internet being a more interactive medium where the audience can like and comment on their feedback. With Instagram being a free platform, anyone can become a cartoonist and make comic strips. The platform is a blessing for many cartoonists who found it hard to keep pace with the changing times.

Though there are many researchers regarding comic books and Instagram, particular research about Instagram comics was not found. Thus, the study opens new horizons for the researchers to conduct more studies in this direction.

Based on this area of study, the following research questions were formulated:

1. What are the various issues raised by Instagram comic artists?
2. Are there any differences between Indian and American comics?

Review

Instagram performs like a social media channel where individuals, companies, vendors, and interest groups can quickly join in, photos or pictures uploaded from any of them can be posted again, thus speeding up dissemination of information (Chante et al., 2014). Consequently, many traditional offline organizations have slowly incorporated social networking services into their businesses to reach and communicate with their actual and potential consumers more efficiently.

J. Modern in April 2014 said that when it became possible to have photo sets on Instagram, you suddenly had this new aspect where you could have a narrative and where you, as a viewer, always have to decide if you want to read further or not. It's a very effective way of learning things. "This explains the reason why a considerable number of comic artists are coming up on Instagram to share their art. These comics reflect a lot about their surroundings, personal choices, fears, and decisions. Social media is helping comic artists become entrepreneurs." (Pillai & Phadnis, 2014).

The shift from traditional to new age comics was not smooth, though. Kelly Dougher from Crixeo says that many adults have fond memories of asking their parents for the comics section of the newspaper on sleepy Sunday mornings. Now, however, most people get their news online, and comics are being consumed digitally. With more than 200k Instagram posts tagged with the hashtag #comicstrip, it's never been easier to get your daily dose of art combined with comedy.

So what exactly is a comic? While defining comics, David Kunzle says that a comic strip consists of "a sequence of separate images" with "a preponderance of image over text" that appears (and was initially intended to appear) in "a mass medium" and tells "a story which is both moral and topical" (Meskin, 2011).

As Hayman and Pratt characterization of comics goes, comics are primarily pictorial and sequential. Although comics may (but need not) include words, it seems that they must consist of pictures. Moreover, the graphic condition

seems to distinguish comics from related forms of art such as literature, works of which must consist of words and may (but need not) include pictures. (Meskin, 2011).

These pictorial representations often reflect what is there in the present in society. Bjorn Saemann, in his book *How comics reflect Society*, hypothesizes that superhero comics change over time to stay relevant and that the observant reader can make conclusions about the time during which a comic was written by analyzing it. Hence, one can derive cultural differences by analyzing cartoons from different cultures.

“Open a comic book, and you can see America in the pages — its people, values, culture, and how it’s changed.” (Hutshell, 2012).

Comics, and popular culture in general, now account for being a growing area of academic study for what they reveal about our society. Many researchers have used the Library’s comics collection to explore such topics as the changing roles of women and evolving perspectives on

Race and ethnicity. There are a lot of differences that can be noted in the Indian and American Culture. According to Listaka’s article “10 Differences between Indian and American culture”, these are the significant differences.

- In the US, Sixteen is taken as the age when you ‘grow-up.’ In India, however, they have no such period. The grown-up age is different for every kid in every family of every culture in every religion.
- Significantly, the average rate of divorce in the west is 40% approximately, and in India, it is 8 in every 1000 weddings. The number says it all..
- One significant fact is that the people of the west are open to working at any level to earn their livelihood or improve it. The same mentality is coming to India but slowly. The society still frowns when you take a job beneath you. The real fight here is not between the level of work and the person; the battle is between the person and society's mentality.

Wright (2008) talks about the color context, which can be understood as color symbolism, whereas the psychological properties of color are associated with people's moods in general. The mental properties of primary colors are as follows:

- **BLACK.**

Positive: Sophistication, glamour, security, emotional safety, efficiency, substance.

Negative: Oppression, coldness, menace, heaviness.

- **WHITE.**

Positive: Clarity, simplicity, Hygiene, sterility, purity, cleanness, sophistication, efficiency.

Negative: Sterility, coldness, barriers, unfriendliness, elitism.

- **GREY.**

Positive: Psychological neutrality.

Negative: Lack of confidence, depression, lack of energy ,dampness, hibernation.

Gap analysis

As the concept of Instagram comics is pretty new and recent, there were no studies available online regarding the same topic. Therefore, there is an inability to refer to previous researches on the same subject for this study.

Also, the lack of time and resources has constricted the sample to 4 Instagram artists only, which cannot give real conclusions. Further studies on the topic should ensure to take up a bigger sample size.

Qualitative research methods can also be taught by interviewing comic artists and studying their perspectives while making a comic.

Due to time constraints, cultural theories were not referred to while conducting this research. Hence the cultural impacts of comics are not included in this research.

Methodology

The method, the term, categorically means a smart way of doing something. In research, the process is a systematic study of a limited and subject matter. Every method has a fixed outlay and follows scheduled steps. It is independent of techniques. The aim of a technique is systematic knowledge of a particular subject- matter. The objective was broader and dominant and included within it the objective of the method. The term, Methodology is defined as “the study of methods by which we gain knowledge.” The techniques by which researchers go about describing, explaining and predicting phenomena are called methodology.

This research studies the Indian and American comics on Instagram. The method used is Content Analysis. The methodology used in this research is as follows:

The Research approach used is a Quantitative Approach. The emphasis of Quantitative methods is on objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research majorly focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon. (Babbie, 2005).

The universe for the study is comics. The population selected is Virtual Comics. A Sample of 4 Instagram Comic artists is selected for the study:

- Catana Comics: Boasting of 1.4m followers on her account, comic artist Catana from New York, makes comics primarily on her relationship with her boyfriend John Freed.
- Cinimomo Comics: Mackenzie,21, the creator of cinimomo comics, has a whopping 80.4K followers on Instagram. Her comics are based on everyday life of a normal girl, daily struggles which are often not talked about.
- Goodbad Comics: Aditi Mali, who hails from Pune, has an Instagram family of 66.3K followers. She makes comics on everyday struggles of a girl.
- Shreya Doodles: Shreya, a 20-yr old girl from Kolkata, makes comics on almost everything that she sees in her everyday life. She has 83.9K followers on Instagram.

The sampling technique used in the study is Expert sampling technique, under non – probability sampling technique, as the comic artists that have been chosen for the research have a very huge number of followers on Instagram, and online sites have stated them to be some of the most popular comic artists on Instagram.

Expert sampling is the type of sampling method where you draw your sample from experts in the field you're studying. The techniques used when we need to know the opinions or assessment of people with a high degree of knowledge about the study area.

Data was collected in a span of 15 days. Data has been presented using MS Word.

The following objectives were formulated in order to seek answers to the research questions as mentioned in chapter 1:

1. To determine the kind of issue raised on every post
2. To determine the use of action and speech words.
3. To determine the primary color palette used by a specific comic artist

And to determine the other things we need to consider the other format as

1. To determine the type of characters (male/female/animal/object)
2. To examine the frequency of posts
3. To find the number of likes and comments on every post

Certain terms were used in the research, which are defined as follows:

1. Comics: Comics are a medium used to express ideas by still images, often combined with text or other visual information. Comics often take the shape of close sequences of panels of pictures.

2. Virtual Comics: Comics that are available on digital platforms.
3. Instagram: It is a photo and video- sharing social networking service owned by Facebook, Inc. It was created by Kevin Systrom and Mike Krieger. The application allows users to upload photos and videos to the service, which can be edited with various filters and organized with tags and location information.
4. Indian Comic Artists: Comic artists that are based in any part of India.
5. American Comic Artists: Comic artists who are based in any part of United States of America.
6. Frequency: The rate of occurrence of an event over particular period of time. (Here) Frequency of posts in a week, is being referred to.
7. Likes: A like is a feature available on the interactive platforms which is used to express approval towards a particular article, post, photograph etc. It is a kind of feedback from the audience.
8. Comment: Another feature of interactive platform where users can give subjective opinions about a particular post, article, photograph etc.
9. Followers: The users who hit the follow button in order to receive regular updates about the account on their wall are called followers.
10. Issue: An important topic of discussion/debate
11. Action words: The words used in a comic (here) to describe a particular action of a character. They are not spoken by the character, but are heard while performing an action.
12. Speech words: The dialogues spoken by a character in the comic universe.

Data Presentation and Analysis

The data was collected in the span of 15 days, from the Instagram handles of 4 comic artists. The data is being presented in a tabular format. The analysis is done in accordance with the research questions. Mean method of measuring central tendency was used to present data, and the units were formulated in order to seek answers to research questions.

Table 1. Types of issues raised by Indian and American comics

	Relationship - based[RB] (in %)	Personal ([P S] %)	Social [S] (in %)	Political [PL] (in %)	Comparisi on	Average (in %)
Catanacomics	75	25	0	0	American	RB: 37.5
Cinimomocomi cs	0	75	25	0		PS: 50 S: 12.5 PL: 0
Goodbadcomics	0	40	60	0	Indian	RB: 0
shreyadoodles	0	10 0	0	0		PS: 70 S: 30 PL: 0
Average (mean)	18.75	60	21.25	0		

The data from Table 1 shows that 60% of the comics analyzed are based on personal issues, whereas only 21.25% and 18.75% cater to the social and relationship- based issues respectively.

When we compare the data between American and Indian comics, the statistics tend to differ. While the majority of comics in both American and Indian scenarios focus on personal issues, a large chunk of comics from America (37.5) are relationship based. Whereas, in the Indian scenario, no comic strip depicted the love life of the artists.

Indian comics are more vocal about the social issues prevalent, with 30% of them making comic strips about the same. Whereas in America, only 12.5% of the comics talked about social issues.

One fact that remains the same in both American and Indian comics on Instagram is that none of the comics talk about the political issues.

Table 2: Average number of Action and Speech Words used

	Action Words used[AW] (approx.)	SpeechWords used[SW] (approx.)		Number
Catanacomics	2	6	American	AW: 3
Cinimomocomics	3	11		SW:9
Goodbadcomics	9	11	Indian	AW: 7
Shreyadoodles	5	11		SW:11
Average (Mean)	5	10		

Average No. of Average No. of Comparison Average

The data from table 2 shows that on an average, comics on Instagram have 5 action words and 10 speech words. As the number of speech words is double than the action words, it is evident that the dialogues of the characters constitute a larger part of the words in the comic strips than explaining the actions through words.

A comparison between American and Indian comics, however, shows that while American comics relied more on the speech words than action words (3), Indian comics use a fairly larger number of action words (7) to depict the action of their characters.

Table 3: Primary color palette used

	Primary colors used	Comparision	Average No. of colors used
Catanacomics	Grey, black, white	American	4
Cinimomocomics	Pastel pink, purple, grey, black, white		
Goodbadcomics	Pink, blue, brown, black, white	Indian	6
shreyadoodles	Pastel yellow, pink, blue, grey, black, white		
Average Number of	5		

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Colors used

The data from table 3 shows that comics on Instagram use majorly 5 different colors, with black, white and grey among the most common colors used.

Comparison between American and Indian comics show that Indian comics use a fairly larger number of colors (6) as compared to the American comics (4).

Table 4: Type of characters in the comics

	No. of Males (in %)	No. of females (in %)	No. of animals (in %)	No. of objects (in %)	Comparison	Average %
Catanacomics	42	57	0	0	American	M:28
Cinimomocomics	14	36	50	0		F:46.5 A:25 O: 0
Goodbadcomics	8	75	0	15	Indian	M: 13
shreyadoodles	18	18	45	18		F:46.5 A:22.5 O:16.5
Average %	20.5	46.5	23.75	8.25		

Table 4 shows that female characters are the most popular among comics on Instagram with 46.5% female characters. Roughly 20.5% and 23.75% of the characters are males or animals whereas objects as characters are least popular (8.25%).

In both American and Indian scenarios, female characters lead with 46.5%. Male representation among American comics (28%) is fairly more than the Indian ones (13%). While there are no objects as characters in the American comics on Instagram, Indian comics have a 16.5% of the total characters as objects.

Table 5: Frequency of posts

	Frequency (posts per week)	Comparison	Average Frequency
Catanacomics	2	American	2
Cinimomocomics	2		
Goodbadcomics	3	Indian	3
shreyadoodles	2		
Average Frequency	2		

Table 5 shows that frequency of posts by Instagram comic artists across the world is 2 posts per week. American comic artists, on an average, post twice a week whereas Indian comic artists post thrice a week.

Table 6: Average Number of Likes and comments

	Average no. of likes	Average no. of comments	Comparison	Average Numbers
Catanacomics	187,914	9959	American	Likes: 119,819
Cinimomocomics	51,724	424		Comments: 5196
Goodbadcomics	5743	85	Indian	Likes: 7579
shreyadoodles	9415	86		Comments: 86
Average Numbers	50,961	2639		

Table 6 shows that on an average, a comic artist on Instagram with the greatest number of followers, gets roughly around 50,961 likes and 2639 comments

There is a stark difference in the numbers between American and Indian comics on Instagram.

American comics are way ahead of Indian comics in terms of popularity, as they receive triple the number of likes and comments as the Indian ones.

Discussions

This chapter describes the findings of the research followed by a discussion about the findings. The findings relate to the research questions as given in the methodology chapter. Data was analyzed to gain an in-depth knowledge about the content of virtual comics on Instagram, and to draw a parallel between the comics originating from USA to the ones from India. Data were obtained through charts, prepared by following a fixed code book.

Out of the 4 Instagram comic handles that were studied in the span of 15 days, 60% of the comics analyzed are based on personal issues like struggle to wake up early or making decisions in life, whereas only 21.25% and 18.75% cater to the social and relationship-based issues respectively. Also, out of the 20 comic strips that were analyzed, none of them discussed about political issues. American comics tend to focus more on the relationship-based content with 37% of the comics on the same. For example: Having a fight with boyfriend or comforting each other on bad days. However out of the 12 comic strips from India that were analyzed, none of them were relationship based. From the social front, Indian comic artists tend to be more vocal about the social issues prevalent in their immediate society, with a major 30% of the comics based on social issues. These social issues include instances of getting judged for being skinny in public or stigma around 'dark-skinned' people. However American comics talk less about their social issues, as only 12.5% are about social issues.

Speech words are more used in a comic strip than the action words. As the number of speech words is double than the action words, it is evident that the dialogues of the characters constitute a larger part of the words in the comic strips than explaining the actions through words. The stats remain the same in American as well as Indian scenario.

Black, grey and white are the most common colors used in a virtual comic strip. Wright (2008) 's study on color psychology gave us the following findings about the major colors used:

- Grey: As grey is the only colour that has no direct psychological properties. It usually indicates a lack of confidence and fear of exposure. Comic artists use grey to portray the same.
- Black: Positively, it communicates absolute clarity, with no fine nuances. It communicates sophistication and uncompromising excellence and it works particularly well with white. Black creates a perception of weight and seriousness. Comic artists use this color to prove strong points or make a statement.
- White: Just as black is total absorption, so white is total reflection. Visually, white gives a heightened perception of space. The negative effect of white on warm colours is to make them look and feel garish. Comic artists play with the color white to create sense of space and cleanliness in their comics, and also to compliment it with black and grey.

Indian comics use a greater number of colors than the American comics.

Female characters are more popular in comics on Instagram than males, animals or objects as characters. In both American and Indian scenarios, female characters lead with 46.5%. Male representation among American comics (28%) is fairly more than the Indian ones (13%). While there are no objects as characters in the American comics on Instagram, Indian comics have a 16.5% of the total characters as objects.

American comic artists, on an average, post twice a week whereas Indian comic artists post thrice a week. Also, the American comics receive triple the amount of audience received by the Indian comics on Instagram evident from the number of followers, likes and comments received.

Recommendations

With a platform dedicated solely to visual content, Instagram has empowered the community of comic artists who had, for far too long, struggled to get their work the attention it deserved. Now, Comics on the social media platform receive a large number of followers, likes and comments.

Content analysis of these virtual comics tells that there are significant differences between the American and Indian origin comics on Instagram. Virtual Comic culture in America seems to be more popular than the one in India currently. Though Indian comic artists are trying to gain more audience by posting more content in a week than their American counterparts. But currently, the number of followers for the American comic artists is way more than that of the Indian comic artists.

Indian comic artists take out time to make comics on the social issues prevalent in the society which is contrary to the latter. American comic artists dedicate a significant amount of time drawing about their love life. They discuss instances from their everyday life, which includes their partners comforting each other on bad days, or random leg pulling. In India however, comic artists take out time to draw about comics related to the society mindsets, which includes instances of people judging a person on the basis of external appearances or misunderstanding people in general. One significant finding is that representation of political issues is almost none in the virtual comics, which is an area of interest, that needs to be researched. Instagram being the most famous app among the youth, is a huge platform for gathering information, and politics related information must be disseminated through the photo sharing platform.

However, comics from both the countries, focus majorly on their personal issues, i.e. the artists draw about their personal lives and their everyday incidents like their difficulty of waking up in the morning, shopping, gaming, their bad mood days etc. This gives us major insight about the comics on the digital platform. Virtual comics are more

about the personal lives of the comic artists, it is basically blogging your everyday life in the form of a comic. Female characters tend to take the lead in case of Instagram comics, is proof of the changing society.

Indian comic artists like more use of colors than the American ones. We can find a minimum of 5 colors in the palette of an Indian comic artist, all in the pastel or nude shades, which is more than that of the latter, where one can find barely three colors in the overall comic. The major colors used are grey, black and white. Grey indicated the lack of exposure or fear, or its use can simply be because of the fact that it blends well with white and black. White gives a sense of space to the comics whereas black is a strong color, used to emphasize on a specific spot.

There are significant differences in the Indian and American comics on Instagram in terms of popularity, colors used, issues being raised. However, artists from both the nations prefer drawing about their personal lives than documenting social or political problems.

Drawbacks

Time constraint was a major limitation for this research. Not much time could be devoted to the data collection and analysis. Lack of resources was another drawback, as the research was done at a student level with zero budget. Lack of knowledge about tools like SPSS, also posed as a limitation for the researcher.

Conclusion

Further studies on the same topic can highlight the following areas of interest, that could not be covered in this research because of the earlier mentioned limitations.

- Political coverage in the form of Instagram comics
- Impact of the virtual comics on the minds of the followers
- Representation of multiple genders in the comics available on Instagram
- A critical analysis of the comments section to know about the audience feedback on the comics
- A cultural study to draw differences in Indian and American cultures, as portrayed by the comics on the digital platform.
- The changing world of comic superheroes: Is self the new-age superhero?

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