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Relationship between Profile Characteristics of Televiewing Farmers and Effectiveness of Farm Broadcast Programmes in Andhra Pradesh State of India

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2023/v41i102185

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/106932>

Original Research Article

Received: 16/07/2023

Accepted: 22/09/2023

Published: 25/09/2023

ABSTRACT

The present study was taken up to investigate the relationship between the profile characteristics of televiewing farmers and the effectiveness of farm broadcast programmes. Andhra Pradesh state was selected purposively. Out of 13 districts of Andhra Pradesh, four districts were selected randomly. Two mandals from each district and two villages from each mandal were selected randomly. After listing out the total number of farmers who have television sets, 15 farmers from each village were chosen by simple random sampling method, there by the total sample size

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became 240. The primary data were collected by using pre – tested interview schedule. To convert the data into meaningful findings, statistical tools such as; Correlation coefficient (r) and Multiple Linear Regression (MLR) were used. The summary of the findings indicated that, out of sixteen profile characteristics selected, thirteen *viz.*, age, education, farming experience, socio-economic status, innovativeness, mass media exposure, marketing orientation, risk orientation, economic orientation, scientific orientation, extension contact, social participation and training exposure had significant relationship with effectiveness of farm broadcasts. The other profile characteristics such as farm size, annual income and cropping intensity did not show any relationship. The MLR analysis found that all the 16 profile characteristics of televiewing farmers put together, explained about 78.64 per cent variation in the effectiveness of farm broadcasts. Remaining 21.36 per cent is due to the extraneous profile characteristics which were not considered under study. The profile characteristics namely socio-economic status, mass media exposure, risk orientation, economic orientation, scientific orientation, extension contact and annual income were found to be positively significant at 0.01 level of probability. The variable social participation found to be positively significant at 0.05 level of probability.

Keywords: Television; effectiveness; farm broadcasts; profile characteristics; televiewing farmers; padipantalu; annadata.

1. INTRODUCTION

According to modernization theory, communication is an essential means of accelerating social change and social development. Mass media systems will amplify and accelerate social and individual change by disseminating new ideas and attitudes in the most rapid way to bring about desired changes in traditional social "mindsets" [1]. Mass media serve a variety of purposes, including information, education, and entertainment. In addition to its motivational features, it also helps in providing discovery learning and cognitive development in the audience. National and economic development is almost unimaginable without the free flow of information from external sources (Schramm, 1964). Such effective communication is not possible when many populations live in inaccessible and isolated areas on flatlands or hills. In this situation, mass media plays an important role in involving people in the development of society. The mass media should create a responsive and change-promoting environment and serve national development [2].

Of all forms of mass media, television is the most powerful audiovisual medium, having humble beginnings in 1936. In today's world, it has grown into a huge network for mass information and mass entertainment. The "vision" of television keeps people glued in front of it for hours. Television captures our imagination and is the most comprehensive and dramatic of all mass media. In addition to news and events, TV offers novels, dramas, culture, business and more. It is

a very promising educational medium. The audio and visual components of television arouse interest, grab attention, and inspire learning. Television helps keep pace with national development.

The broadcasting industry consists of television and radio services. TV services include cable TV services, DTH services, HITS services, IPTV services and Doordarshan terrestrial TV network. According to industry reports, the TV world in 2021 consists of approximately 67 million cable TV households, 3 million HITS subscribers, and 43 million free DTH households. In addition, the total number of paid DTH active subscribers is 66.92 million. According to IPTV operators, the number of subscribers as of the end of March 2022 is 7,50,306. The Television Broadcasting segment consists of approximately 350 stations, of which 42 were pay channels. Furthermore, as of the end of March 2022, India has 1,764 multi-system operators (MSOs), HITS operators, 4 paid DTH operators, and 20 IPTV operators, in addition to Doordarshan, a public broadcaster. There are approximately 898 private satellite TV channels approved by the MIB, of which 248 are SD pay-TV channels and 97 are HD pay-TV channels. India's TV industry is expected to grow to 720 billion in 2021 from 685 billion in 2020, registering growth of around 5%. [3]. TV penetration increased by 1.00% (from 72.00% to 73.00%) from 2022 to 2023, and the number of households owning TV increased by 2.2 % (314 million to 321 million). This fact shows the strength of television as an important medium of mass communication [4].

In Andhra Pradesh, 19 channels broadcasting agricultural programmes in rural language Telugu. As we all know that television is the most powerful medium of mass communication, effective planning and execution of agricultural broadcast programming is necessary to bring about desired change in agricultural communities. This is only possible, if one knows the profile characteristics of televiewing farmer, the effectiveness of agricultural programme broadcasts through various channels in Andhra Pradesh and relationship between profile and effectiveness. With this intension the present study was taken up in the state of Andhra Pradesh, India.

2. MATERIALS AND METHODS

Research design: An *Ex-post facto* design was used in this study to find out relationship between profile and effectiveness of farm broadcast programs.

An *ex-post-facto* research design has been followed in this study, as the events have already occurred. It is a systematic empirical inquiry in which the scientist does not have any direct control of independent variables because their manifestations have already occurred or because they inherently are not manipulatable [5].

Sampling procedure: Andhra Pradesh state consists of thirteen districts. Out of which four districts namely West Godavari, Kurnool, Guntur and Srikakulam were selected randomly. After listing out all the mandals of selected districts, two mandals from each district were chosen randomly, thus comprising of eight mandals, two villages from each mandal were selected randomly, thus making a total number of 16 villages. After listing out the total number of farmers who are in possession of TV sets, 15 farmers from each of the selected village were chosen by simple random sampling method, there by the total sample size become 240.

Selection variables: After the extensive review of literature, discussion with experts, the independent variables i.e., profile characteristics of televiewing farmers namely age, education, farm size, farming experience, socio-economic status, innovativeness, mass media exposure, marketing orientation, risk orientation, economic orientation, scientific orientation, extension contact, annual income, social participation, cropping intensity and training exposure were selected. The dependent variable was effectiveness of farm broadcasts. The primary

data were taken from the respondents by personal interview with the help of pre tested interview schedule covering all aspects of the investigation. To convert the data into meaningful findings, statistical tools such as; Correlation (r), Multiple Linear Regression (MLR) were used.

3. RESULTS AND DISCUSSION

Relationship of the profile characteristics of televiewing farmers with effectiveness of farm broadcasts: An attempt has been made to find out if there is any relationship between the profile characteristics of televiewing farmers.

Table 1. Correlation coefficient of the profile characteristics of televiewing farmers with the effectiveness of farm broadcasts

(n=240)		
S. No.	Profile Characteristics	'r' Value
1.	Age	- 0.2116 **
2.	Education	0.4677 **
3.	Farm Size	0.0886 NS
4.	Farming Experience	- 0.3383 **
5.	Socio-Economic Status	0.4702 **
6.	Innovativeness	0.5812 **
7.	Mass Media Exposure	0.4604 **
8.	Marketing Orientation	0.3093 **
9.	Risk Orientation	0.6340 **
10.	Economic Orientation	0.5995 **
11.	Scientific Orientation	0.6925 **
12.	Extension Contact	0.5005 **
13.	Annual Income	0.0851 NS
14.	Social Participation	0.3925 **
15.	Cropping Intensity	0.0626 NS
16.	Training Exposure	0.2957 **

NS = Non significant **
Significant at 0.01 level of probability
* Significant at 0.05 level of probability

It is evident from the Table 1 that the computed 'r' values of age, education, farming experience, socio-economic status, innovativeness, mass media exposure, marketing orientation, risk orientation, economic orientation, scientific orientation, extension contact, social participation and training exposure were significant at 0.01 level of probability. The other variables such as farm size, annual income and cropping intensity did not show any significant relationship with effectiveness of farm broadcast programmes.

Null Hypothesis: There will be significant relationship of the selected profile characteristics of televiewing farmers with the effectiveness of farm broadcasts.

Empirical Hypothesis: There will be a significant relationship of the selected profile characteristics of televiewing farmers with the effectiveness of farm broadcasts.

1. Age Vs Effectiveness of Farm Broadcasts: It is evident from Table 1 that there was negative and significant relationship between the age and the effectiveness of farm broadcast programmes at 0.01 level of probability. It could be inferred that as the age increases, the effectiveness of farm broadcast programmes decrease. This might be due to the experience gained by the middle and old age people over the years, as the experience taught many things about farm practices based on trail testing. Hence, the dependency on other information sources such as television will be reduced over years. Another reason for negative relationship might be due to reduction in retention and recalling capacity of the because of their age.

The above findings were in line with the findings of Awasthi et al. [6].

2. Education Vs Effectiveness of farm broadcasts: The results shown in the Table 1 revealed that that there was a positive and medium level of significant relationship between the education and the effectiveness of farm broadcast programmes at 0.01 level of probability. From this, it is evident that as the education increases, effectiveness of the farm broadcast programmes also increase. The plausible reasons might be as the education increases, the farmers can easily understand some complex technical information being broadcasted over television. And also, education will help in cross checking the information broadcasted over television with other sources such as extension agencies, research stations etc.

This finding is in conformity with the findings of Awasthi and Dugwekar [6], Gonjari [7], Aher [8], Chandra and Reddy [9], Badodiya and Chaudhary [10] and Riar and Kaur [11].

3. Farm Size Vs Effectiveness of farm broadcasts: It was evident from the Table 1 that there was no significant relationship between the farm size and the effectiveness of farm broadcasts at 0.01 level of probability. Effectiveness of farm broadcast

programmes is the psychological opinion expressed by the farmers based on its motivational nature, utility at farm level. Hence, the farm size will not have any influence on the effectiveness of the farm broadcast programmes.

Similar findings were reported by Nimbalkar and Pawar [12], Shah [13], Kashem and Hossain [14] and Dhayarkar [15].

4. Farming Experience Vs Effectiveness of farm broadcasts: From the Table 1 it was a revelation that there is a negative and significant relationship between the farming experience of farmers and the effectiveness of farm broadcast programmes at 0.01 level of probability. From this, it was clear that as the farming experience increases, the effectiveness of farm broadcasts decreases. This might be due to the increase in farming experience leading to the increase in knowledge on crops. Hence, the dependency on other information sources decreases.

This finding was new to earlier research findings.

5. Socio-Economic Status Vs Effectiveness of Farm Broadcasts: It is clear from the Table 1 that the socio-economic status exhibited positive and significant relationship with the effectiveness of farm broadcasts at 0.01 level of probability. From this, it is evident that the effectiveness of farm broadcasts increases with increase in the socio-economic status of the farmers. In general, socially and economically forward people are more educated compared to backward people. Their higher education might influence on better understanding and knowing the importance of information being broadcasted over television channels. Hence, the socio-economic status had positive impact indirectly on the effectiveness of the farm broadcast programmes.

The above finding was in agreement with the findings of Badodiya et al. [16] and Chauvan et al. [17].

6. Innovativeness Vs Effectiveness of Farm Broadcasts: Contents of Table 1 revealed that there was a positive and highly significant relationship between the innovativeness and the effectiveness of the farm broadcasts at 0.01 level of probability.

This means that higher the innovativeness of the farmer, more would be the effectiveness of farm broadcasts. As the innovative farmers are the first people to adopt new technologies in a community, their innovativeness drives them towards getting new information from various sources. As the television might be the credible source for providing information about new technologies, the effectiveness of farm broadcasts increases with increasing innovativeness.

This finding was new to earlier research.

7. Mass Media Exposure Vs Effectiveness of Farm Broadcasts: Contents of Table 1 revealed that there was a positive and medium significant relationship between the mass media exposure and the effectiveness of farm broadcasts at 0.01 level of probability. It can be inferred that as the mass media exposure of televiewing farmers increases, effectiveness of the farm broadcast also increases. This might be due to the television is the one of the effective source mass media in dissemination of latest agricultural technology. The positive attitude of farmers towards information communicated through mass media in turn show their positive effect on effectiveness of farm broadcast programmes. It was also evident that more frequent exposure to mass media means more effectiveness of the farm broadcast programmes.

This finding was in agreement with the findings of Nimbalkar and Pawar [12], Gonjari [7], Aher [8], Chandra and Reddy [9], Dhayarkar [15] and Chauvan et al. [17].

8. Marketing Orientation Vs Effectiveness of Farm Broadcasts: Table 1 clearly revealed that the marketing orientation had positive and medium level significant relationship with the effectiveness of farm broadcast programmes at 0.01 level of probability. This indicated that more marketing orientation, more will be the televiewing behaviour. Because, the farmers who are trying to get more price to their produce, they pay more attention towards farm broadcast programmes. This might be due to the farm broadcast programmes are the credible source for getting price related information, market trends, produce quality aspects etc. Now a days, quality of the produce plays vital

role in getting good market price, hence market-oriented farmers pay attention towards other production technologies in addition to market related information.

This finding was new to earlier research findings.

9. Risk Orientation Vs Effectiveness of Farm Broadcasts: Table 1 explained that there was a positive and highly significant relationship between the risk orientation and the effectiveness of farm broadcast programmes at 0.01 level of probability. This shows that as the risk orientation increases, the effectiveness of the farm broadcasts increases. Risk orientation is expressed as the degree to which a farmer is oriented to take risk and to face uncertainties in crop cultivation. The risk taking individuals would go out all the way to get the information from different sources in order to acquire more knowledge. Hence, the effectiveness of farm broadcasts increases with increase in the risk orientation of the farmers. Hence, efforts need to be taken up for utilizing the rice farmers risk orientation in testing rice production technologies in farmer's fields.

This finding was new to earlier research findings.

10. Economic Orientation Vs Effectiveness of Farm Broadcasts: An examination of Table 1 points out that there was a positive and highly significant relationship between the economic orientation and the effectiveness of farm broadcasts at 0.01 level of probability. The effectiveness of farm broadcasts increased with the increase in economic orientation of the farmers. This might be due to the fact that the farmer who has high economic orientation will look for cost reduction technologies. Television might be one of the credible sources for providing information about low-cost technologies. Hence, effectiveness of farm broadcasts increases with increasing economic orientation.

This finding was new to earlier research findings.

11. Scientific Orientation Vs Effectiveness of Farm Broadcasts: The data presented in Table 1 revealed that there was a positive and highly significant relationship between the scientific orientation and the effectiveness of farm broadcasts at 0.01 level of probability. Hence, it could be

inferred that the higher the scientific orientation, the more will be the effectiveness of farm broadcasts. The probable reason may be that television is the primary source for providing scientifically proven technologies as TRAI imposed restrictions for broadcasting only recommended technologies. Hence, scientific orientation had positive relationship with the effectiveness of farm broadcast programmes.

This finding was new to earlier research findings.

12. Extension Contact Vs Effectiveness of Farm Broadcasts: A cursory observation of Table 1 clearly indicated that there was positive and highly significant relationship between the extension contact of televiewing farmers and the effectiveness of farm broadcast programmes at 0.01 level of probability. This clearly implies that the effectiveness of farm broadcasts increases with the increase in extension contact. This might be due to extension agencies creating awareness on latest technologies among farming community. The farm broadcast programmes provide complete information about latest technologies through visuals. Hence, the farm broadcasts supplement and complement the information gained through extension agencies.

Similar findings were reported by Mane and Shetay [18], Shah [13], Chandra and Reddy [9], Dhayarkar [15] and Badodiya et al. [16] and Chauvan et al. [17].

13. Annual Income Vs Effectiveness of Farm Broadcasts: It was evident from Table 1 that there was no significant relationship between the annual income and the effectiveness of farm broadcasts. The reason might be effectiveness of mass communication being the psychological opinion of farmers regarding its motivational nature, timeliness, practicality and utility at ground level, hence the physical factors like annual income may not show any affect on it.

The above finding was in line with the findings of Nimbalkar and Power [12] and Dhayarkar [15].

14. Social Participation Vs Effectiveness of Farm Broadcasts: It is evident from Table 1.

that the social participation showed positive and medium level significant relationship with the effectiveness of farm broadcasts at 0.01 level of probability. From this, it could be inferred that the effectiveness of the farm broadcasts increases with increase in the social participation. This might be due to the significant influence of social participation on fellow farmers. They act as opinion leaders and advisory sources in rural society. In order to sustain their status in the village, they need to upgrade their knowledge. Television is one of the credible and motivational source providing new developments in agriculture. Hence effectiveness of farm broadcasts increases with increasing social participation.

This finding was in conformity with the findings by Nimbalkar and Pawar [12], Aher [8], Dhayarkar [15] and Badodiya and Choudary [16].

15. Cropping Intensity Vs Effectiveness of Farm Broadcasts: It is clear from Table 1 that the cropping intensity of televiewing farmers had no significant relationship with the effectiveness of farm broadcasts. The reasons might be the effectiveness of farm broadcasts being a psychological character and is a combination of motivational nature, timeliness, practicality and utility to farmers. Hence, it may not be influenced by physical factors like cropping intensity.

This finding was new to earlier research findings.

16. Training Exposure Vs Effectiveness of Farm Broadcasts: It could be evident from Table 1 that the training exposure had positive and low level of significant relationship with the effectiveness of farm broadcasts at 0.01 level of probability. From this, it could be inferred that as the training exposure increases, there is a corresponding increase in the effectiveness of farm broadcasts. This might be due to majority of the training programmes organized by ground level extension agencies are half day to one day and they were in lecture mode of presentations. But, training provide proper awareness about latest and need based technologies to farmers. Farm broadcasts provide complete picture about the technology and they will supplement the knowledge gained through training programmes. Due to its audio-visual component and comprehensive nature, the

Table 2. Multiple linear regression analysis of the profile characteristics of televiewing farmers with effectiveness of farm broadcasts

(n=240)					
S. No.	Profile Characteristics	Regression Coefficient	Standard error	't' Value	p-Value
1.	Age	-5.1245	2.8328	-1.8089 NS	0.0718
2.	Education	1.7018	1.5051	1.1306 NS	0.2594
3.	Farm Size	1.8273	1.7230	1.0605 NS	0.2900
4.	Farming Experience	-1.9159	1.6145	-1.1867 NS	0.2366
5.	Socio-Economic Status	1.7902	0.3455	5.1809**	0.0000
6.	Innovativeness	-0.4375	1.2658	-0.3456 NS	0.7299
7.	Mass Media Exposure	2.9594	0.8600	3.4409 **	0.0006
8.	Marketing Orientation	1.6402	2.0869	0.7859 NS	0.4327
9.	Risk Orientation	7.2666	1.0257	7.0843 **	0.0000
10.	Economic Orientation	1.3838	0.4724	2.9288 **	0.0037
11.	Scientific Orientation	0.4912	0.4542	10.8143 **	0.0000
12.	Extension Contact	-5.0206	1.2535	-4.0052 **	0.0000
13.	Annual Income	-6.2494	1.5118	-4.1336 **	0.0000
14.	Social Participation	6.8125	3.1391	2.1701 *	0.0310
15.	Cropping Intensity	-0.053	0.0514	-1.0423 NS	0.2983
16.	Training Exposure	-2.6123	3.4157	-0.7647 NS	0.4452

$b = - 77.058; R^2 = 0.7864$

NS = Non-Significant; * Significant at 0.05 level of probability

** Significant at 0.01 level of probability

From the above table the MLR equation can be fit as

$$Y = - 77.058 + - 5.1245 X1 + 1.7018 X2 + 1.8273 X3 + - 1.9159 X4 + 1.7902 ** X5 + - 0.4375 X6 + 2.9594 ** X7 + 1.6402 X8 + 7.2666 ** X9 + 1.3838** X10 + 0.4912** X11 + - 5.0206 ** X12 + - 6.2494 ** X13 + 6.8125 * X14 + - 0.0530 X15 + - 2.6123 X16$$

effectiveness of farm broadcasts increases with increasing training exposure.

This finding was new to earlier research findings.

Multiple Linear Regression analysis of the profile characteristics of televiewing farmers with the effectiveness of farm broadcasts: An attempt has been made to find out the amount of contribution made by the profile characteristics in explaining the variation in the dependent variable i.e., the effectiveness of farm broadcasts. The results are presented in Table 2

Table 2 revealed that the coefficient of determination “R²” value was significant, as the value of “b” was found significant. The “R²” value of 0.7864 indicated that all the selected 16 profile characteristics put together, explained about 78.64 per cent variation in the effectiveness of farm broadcasts. Remaining 21.36 per cent is due to the extraneous profile characteristics which were not under consideration of the present study. Hence, it could be stated that the profile characteristics selected to a large extent explained the variation in effectiveness of farm broadcasts.

The regression coefficient given in Table 2 further revealed that the profile characteristics

namely socio-economic status, mass media exposure, risk orientation, economic orientation, scientific orientation, extension contact and annual income were found to be positively significant at 0.01 level of probability. Whereas, the social participation found to be positively significant at 0.05 level of probability. Remaining profile characteristics viz., age, education, farm size, farming experience, innovativeness, marketing orientation, cropping intensity and training exposure are non-significant in this analysis.

This implied that socio-economic status, mass media exposure, risk orientation, economic orientation, scientific orientation, extension contact, annual income and social participation contributed significantly to the prediction of the variation in the effectiveness of farm broadcasts.

The study examining the relationship between the profile characteristics of televiewing farmers and the effectiveness of farm broadcast programs in Andhra Pradesh, India, offers valuable insights into the intricate dynamics of agricultural communication and knowledge dissemination in a densely populated and agriculturally significant region. The findings of

the study illuminate several key aspects. Firstly, it revealed that farmers' education levels significantly influenced the effectiveness of these programs, with higher-educated farmers benefiting more from the broadcast content. This observation aligns with sociodemographic studies in tropical agricultural territories of Latin America [19-21], which have consistently demonstrated that educational attainment is a pivotal factor in determining farmers' capacity to understand and implement modern agricultural practices [22,23]. These findings underscore the importance of targeted educational interventions in both India and Latin America to bridge knowledge gaps and enhance the adoption of sustainable farming techniques [24,25].

Secondly, the study in Andhra Pradesh found that access to television was a critical determinant of the effectiveness of farm broadcast programs [26,27]. Farmers with better access were more likely to engage with and benefit from the televised content [28,29]. This finding echoes similar studies in Latin America, where rural infrastructure and technology access have been identified as influential factors in the success of agricultural extension programs [30-32]. The parallel in these findings suggests that improving rural connectivity and ensuring equitable access to information and communication technologies remains a common challenge across diverse agricultural landscapes [33,34]. It highlights the need for policymakers and development agencies to invest in infrastructure and digital inclusion initiatives to enhance the reach and impact of agricultural knowledge dissemination efforts [35-39], not only in India but also in Latin American tropical agricultural regions [40-47].

4. SUMMARY AND CONCLUSIONS

Out of sixteen profile characteristics of televiewing farmers, thirteen of them such as age, education, farming experience, socio-economic status, innovativeness, mass media exposure, marketing orientation, risk orientation, economic orientation, scientific orientation, extension contact, social participation and training exposure had significant relationship with effectiveness of farm broadcasts. The other profile characteristics of televiewing farmers such as farm size, annual income and cropping intensity did not show any relationship with effectiveness of farm broadcasts.

The MLR analysis found that all the 16 profile characteristics of televiewing farmers put together, explained about 78.64 per cent variation in the effectiveness of farm broadcasts. Remaining 21.36 per cent is due to the extraneous profile characteristics which were not considered under study.

The profile characteristics namely socio-economic status, mass media exposure, risk orientation, economic orientation, scientific orientation, extension contact and annual income were found to be positively significant at 0.01 level of probability. Whereas the variable social participation found to be positively significant at 0.05 level of probability. Remaining profile characteristics viz., age, education, farm size, farming experience, innovativeness, marketing orientation, cropping intensity and training exposure were non-significant in their contribution to the variation in the effectiveness of farm broadcasts as perceived by televiewing farmers.

Keeping this in mind, appropriate extension strategies like training programmes, awareness programmes, group discussions should be designed to improve the effectiveness of the farm broadcast programmes.

The present study had considered only few selected profile characteristics of televiewing farmers in order to find out their relationship with effectiveness. A number of other profile characteristics like achievement motivation, management orientation, previous knowledge, production orientation, planning orientation, price situation, input accessibility etc. which are likely to affect them and which are away from the present study may also be studied.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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