INSTRUMENT TO MEASURE QUALITY FROM THE TELEVISION NEWS IN PANAMA

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ABSTRACT:
The present investigation, "Instruments to measure the quality of newscasts in Panama," has the objective of providing scientific rigor, a tool to measure the quality of newscasts in Panama, facilitating self-analysis media, and provides information to the population. We apply the analysis of quality communication theories, especially the model of the fundamentalist theory of Communication of Harold Laswell. A sociological analysis of the information is carried out that address's aspects of environmental supervision, correlation-interpretation, and transmission of culture. The theories of effects used on the function of newscasts, the Agenda Setting, and the Communication and Attitude Change Model, by Carl Hovland, are analyzed. Methodologically, the study was evaluated by the Bioethics Committee of the University of Panama and developed two processes of validity and reliability, integrating into the validity analysis, the content and the construct, with its two approaches of individual aggregates and Delphi. To achieve the instrument's reliability, the Internal Consistency Method is used, factor analysis for the construct's validity; the KMO index and Barlett's sphericity test, which measures no correlations between variables and the sample used is adequate. The Crombach Alpha Coefficient is analyzed for the instrument's internal consistency to improve the quality of newscasts.

INTRODUCTION

The population has a constant need and the right to be informed. But at the same time, the newscasts have as their primary responsibility to tell through their contents.

As a society, we do not have scientific criteria to know which newscasts have higher quality; and, based on this, allow the user to decide what content to consume.

For many social interaction fields, the user has the necessary information to make decisions, for example: when shopping for computers or purchasing a cable television service. In the same way, users should have information to help them decide which newscast to consume.

Moreno Espinosa (2000), citing Mar de Fontcuberta, explains that etymologically news comes from the word nova, which means new things. Its purpose is to report a news event promptly; then, the same author, quoting Carl Warren, considers that news may be what the editor of a newsroom is interested in publishing.

Based on the definition presented above, each communication company will determine based on its ethics if it will publish new things or what interests the director. In general, the content compares to that of sizeable foreign television networks, perhaps, on its excellent quality and enriching information for your intellect.

In the absence of a scientifically validated instrument, it leaves the appraisals of the news to subjectivity. This article presents a tool that allows us to measure newscasts' quality in Panama and the world.

Therefore, the results presented focus on the validity of an instrument that guarantees to deal scientifically with newscast quality. For these reasons, we will address these issues to lay the foundation and provide a tool that has the necessary scientific rigor (reliability, reliability, and validity) to measure the quality of television newscasts in Panama.

In Panama, it is widespread to hear, "the news here is bad; that's why I don't see them." The first step to face this problem is to have an instrument that can objectively measure Panamanian news. Starting from the premise that what is not measured cannot be improved.

LITERATURE REVIEW

Within this research arises the need to understand the importance of implementing an instrument that is capable of measuring the quality of the content presented by the media through the newscasts to its audience.

We will use the analysis of some theories of communication that expressed the need for quality communication for the audience.

The functionalist theory of communication was born with Harold Lasswell, who in 1948 raised the aspects that are present in contact, which is: Who? - What does it say? - By what channel? - To who? - With what effect?

With the following image, we will explain in detail what is the object of study to which each question refers:
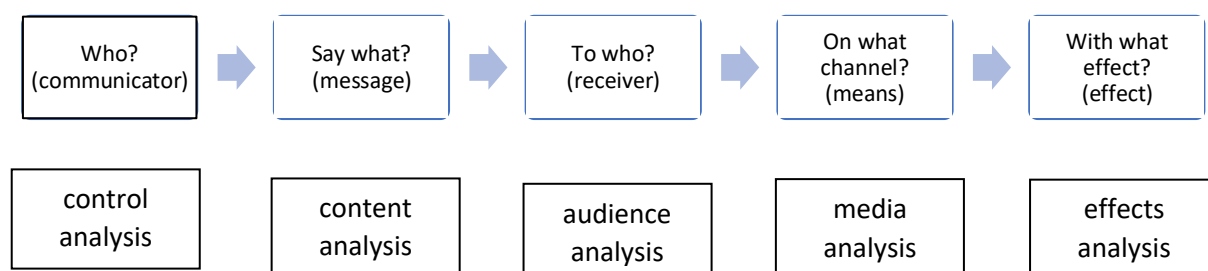
Who? (communicator)	→	Say what? (message)	→	To who? (receiver)	→	On what channel? (means)	→	With what effect? (effect)
control analysis		content analysis		audience analysis		media analysis		effects analysis

Figure 1: Laswell's Communication Model (Rodríguez, 2018)

In this research, we will focus on constructing an instrument that allows us to measure the quality of the information for the analysis of the content of the newscasts.

Another aspect worth highlighting within the sociologist's analysis is that three main functions of communication stand out, which we will see focused instead on the information aspect:

     • Supervision of the environment: These are the events that affect society or occur in the community. In this case, the function is related to the news for its merely informative nature without opinions or personal contributions from the person reporting. It has a neutral and impartial character.

     • Correlation - Interpretation: in this case, it is the information you want to share, and that also offers a coherent interpretation for the help of the audience. Interpret the story and provide a possible way to react. In this case, we could be talking about editorials and opinion pieces.

     • Transmission of culture: in this type of transmission, information is passed from generation to generation to maintain it. Within this aspect, historical documentaries, cultural or artistic sections stand out.
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• Transmission of culture: in this type of transmission, information is passed from generation to generation to maintain it. Within this aspect, historical documentaries, cultural or artistic sections stand out.

For this research, we will focus specifically on the information transmitted thanks to the environment's supervision.

Another theory on which we rely is the Theory of Effects; this theory is in charge of unmasking newscasts' function when they go from merely being a source of information to being a means of persuasion to the masses for decision-making. This theory implied that the media thought more rationally about the information they were going to present to their audiences.

Finally, the Agenda Setting theory contextualizes this research; this theory postulates that the media determine the information to present based on their interests and not thinking about the audience.

This instrument does not intend to break with the communication theories already established. Still, it seeks a self-analysis tool to the media, but not only for them, but it creates healthy competition between the different press concerning the audience.

It will provide a useful tool for the audience. Through the criteria established thanks to this instrument's validation, each one can decide which content is the most enriching and therefore consuming.

Another position that we want to analyze is the communicative model formulated by Carl Hovland (1966). Known as the Communication and Attitude Change Model
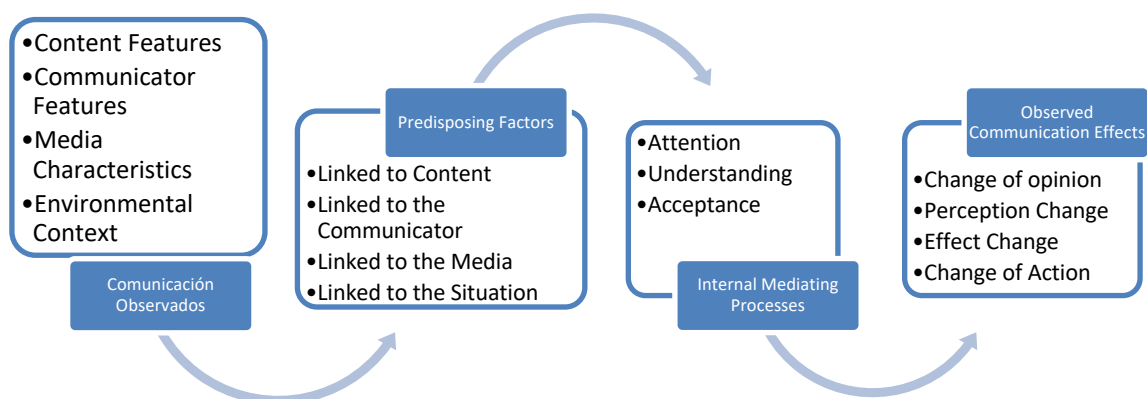
Figure 2: Communication and Attitude Change, The Hovland Model. (Hovland, Janis, & Kelley, 1966)

This model proposed by Carl Hovland (1966) shows aspects, such as the understanding of the elements that condition the perception of the masses and the forms of information transmission.

In our case, of the variables collected by Fernández (2002: 36) for the analysis of texts (material aspects, technological aspects, psychological dimensions, etc.), we have focused on three main dimensions:

• Formal aspects; to identify its grammatical characteristics. In this aspect, we will measure the grammar and writing within the notes presented by the media. Television writing always requires correct and straightforward language.

• Internal characteristics: Each communication medium carries a primary purpose within the content they want to present to audiences. It is here where the intention is to analyze the internal characteristics or the interests that the media has when transmitting different types of information.

• Ideological meanings: to identify the possible purposes attributed to the message it intends to convey. This perception goes a long way to the audience since one thing maybe what the medium seeks to say, and another is what the audience perceives. It is the latter that matters because depending on the level of closeness in interpreting these messages, it will be considered a success or a failure in the transmission of information.

RESEARCH METHODOLOGY
METHOD AND DATA

It is crucial to indicate that this research has the endorsement and authorization of the Bioethics Committee of the University of Panama.

In social sciences, the construction of an instrument raises two central questions: How do we know if the tool adequately measures the object of study? And how to trust the results of the agency?

Methodologically, to deal with this problem, scientifically two processes were developed: validation and reliability. The first involves techniques to demonstrate that the instrument is measuring what it claims to measure. The second process is techniques, which guarantee coherent and consistent results.

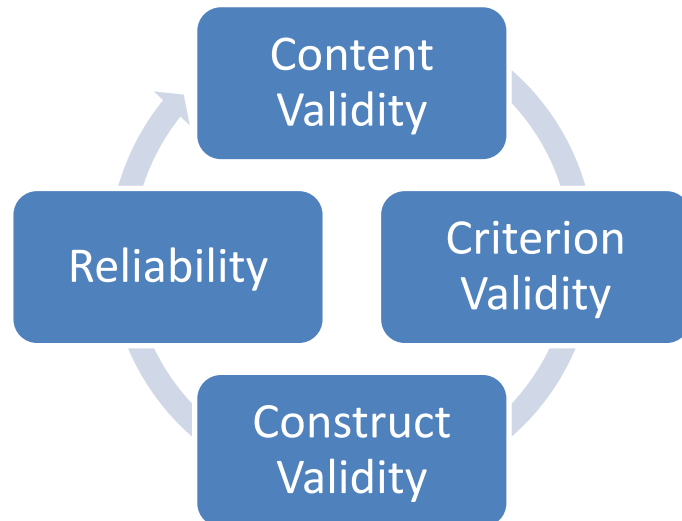Next, we present a graph where we will explain the methodological approach to follow for research:

Figure 3: Methodological Scheme

The validity of an instrument consists of measuring what it has to measure; in this case, it measures or determines the quality of the different newscasts in Panama. To resolve this validity, we must know what the traits and characteristics that we wish to conceptualize to measure them with the instrument that is going to be proposed are.

This validity process is divided into different types. The researcher evaluated according to their subject of study; in our case, we will focus on two types of validity: content and construct, which we will define.

• Content validity: with this validity process, we will know if the questions we will ask will help us measure the objective. In other words, if those items that we express as variables lead us to measure what we want. To measure the content's validity, we will take into account two approaches that are very useful to us. These are the individual aggregates approach and the Delphi approach. We do it to obtain the best results in our instrument. For this was the «Content Validity Ratio Coefficient (CVR)» proposed by (Lawshe 1975) will be used. (Salgado, Máynez, Cavazos, & Cervantes, 2016)

$$CVR = \frac{n_e - N/2}{N/2}$$

CVR: Content validity reason.
N: Number of experts.
Number of experts who indicate (yes or essential, depending on the instrument used)

Number of experts	Minimum value (per item)
5	0.99
6	0.99
7	0.99
8	0.85
9	0.78
10	0.62
11	0.59

Table 1: Content Validity Ratio Coefficient (CVR), (Lawshe, 1975)

• Criterion validity: An instrument is stable if, repeatedly applied to the same phenomena, under the same conditions, it yields consistent results. This section will interview a series of people from whom we will previously know their views on the news in Panama. Hoping that your previous appreciations are reflected in the result after responding to the instrument.

• Construct validity: «tries to answer the question to what extent does the instrument measure a given trait, and how efficiently does it do so? The theory suggests the tasks tests appropriate to observe the attribute or quality and the evidence to be considered in the evaluation. (Corral, 2008)

Who presented the experts in charge of evaluating the model instrument with the initial proposal of the Instrument for Measuring the Quality of Newscasts; together with that, they were given the tool to assess the tool where various aspects of each question/item presented would be rated in the initial proposal.

Construct validity is specifically responsible for quantitative measurement, which refers to "full domain" validation. This refers to the fact that each of the indices in which the different items are grouped is measured.

For example, this instrument evaluates the generality of the various aspects that make up a Newscast and its presentation, as mentioned below:

Presentation	● Good projection. ● Aspects of the set.
Drafting	● Clear to all audiences. ● Concise and to the point.
Production	● Eye-catching edition. ● Clear images on television. ● Synchronization of sounds.
Content	● Veracity of the information. ● Current events. ● Relevant information. ● Reliable sources.

Table 3: General aspects for measuring the quality of newscasts.

The indices are represented by presentation, writing, and production, each composed of 3 items that would come to function as questions of the instrument, always based on the quality and satisfaction regarding the presentation.

All these questions, divided into indices (to achieve a clear understanding of in which direction they are oriented), should help answer the instrument's general problem, which in this case is: "What is the Quality of Newscasts in Panama?" Based on a numerical score from 1 to 5 that represents the criteria terrible to very good respectively, the results will determine if the items are related to the research question, that is, if they respond to the research question.

For this step, factor analysis will be used.

Factor analysis as a statistical technique examines the correlation matrix between the statements or items; it is used as a starting point to identify groups of words that verify that there is a strong correlation between them and the views of a group with low correlation.

       ● To determine if the Factor Analysis is acceptable, the Bartlett Sphericity Test is applied, which allows for the null hypothesis that there is no correlation between the variables considering a significance value of 5%.

       ● Subsequently, the Kaiser-Meyer-Olkin (KMO) test assesses whether the sample is adequate to perform a factor analysis and where its result can range from 0 to 1. Based on those above, depending on the results obtained by these tests, Who will evaluate each of the commonalities in the following way:

       ● Optimal condition: when saturations are more significant than .70

       ● Moderate condition: when we have commonalities between .40 and .70

       ● Minimum condition: when commonalities are low, around 0.30,

The "Bartlett Sphericity Test" will be applied first, then the Kiser-Meyer-Olkin (KMO) test. Finally, the Factorial Method of Extraction of Principal Components. (Lloret-Segura, Ferreres-Traver, Hernández-Beaza, & Tomás-Marco, 2014)

The process to Achieve Reliability:

We will define reliability as the degree to which an instrument reflects coherent and consistent results. For this instrument, considering that the questions are by scales, the Internal Consistency method will be used where only one administration of the tool is required; therefore, the Cronbach's Alpha Coefficient will be used.

RESULT & DISCUSSION

Content Validity

Content Validity Reason (Salgado, Máynez, Cavazos, & Cervantes, 2016). Results by item:

Item	CVR= Content Validity Reason
7	$\frac{8-9/2}{9/2} = 0.78$
8	$\frac{8-9/2}{9/2} = 0.78$
9	$\frac{9-9/2}{9/2} = 1$
10	$\frac{7-9/2}{9/2} = 0.56$
11	$\frac{86-9/2}{9/2} = 0.33$
12	$\frac{9-9/2}{9/2} = 1$
13	$\frac{7-9/2}{9/2} = 0.56$
14	$\frac{9-9/2}{9/2} = 1$
15	$\frac{8-9/2}{9/2} = 0.78$
16	$\frac{8-9/2}{9/2} = 0.78$
17	$\frac{6-9/2}{9/2} = 0.33$
18	$\frac{9-9/2}{9/2} = 1$

19	$\frac{9-9/2}{9/2} = 1$
20	$\frac{9-9/2}{9/2} = 1$
21	$\frac{9-9/2}{9/2} = 1$
22	$\frac{9-9/2}{9/2} = 1$
23	$\frac{8-9/2}{9/2} = 1$

Table 4: Results of the Content Validity Ratio Coefficient for the Content Validity of our instrument.

With the result presented above, based on the opinions of the experts, items: 10, 11, 13, and 17, as they are not essential for the instrument and for measuring the quality of newscasts, will be eliminated from the tool.

Criterion Validity

To carry out the criterion validity, we took a sample of 60 people, who were chosen on purpose, considering their negative perception of the news in Panama. With this sample, we carried out the pilot test of the instrument. When conducting the initial survey, 32 of the 60 people initially mentioned that they did not like it, and the remaining 28 that it seemed fair. When processing the weighting, they made on the newscast's quality; What found that the newscasts in Panama presented low rate, the results being consistent with what was expected, complying with the criteria' validity.

Construct Validity

For construct validity, Factor Analysis is used.
First, we performed the Mahanalobis distance test to search for atypical data in multivariate data, considering atypical data those cases that exceed the significance threshold of $p < .001$ (Uriel & Aldas, 2005), the results in this test show us indicate the absence of outliers.

The assumption of normality was verified using the kurtosis coefficients, considering that the values within the threshold ± 1.5 indicate slight variations from average, which is why they can be used for the treatment of exploratory factor analysis (George & Mallery, 2010; Pérez & Medrano, 2010) when performing this test, the data are considered normal.

Multicollinearity was verified by analyzing the tolerance indices and their reciprocal, the inflation of variance (VIF). These measures indicate the degree to which the other variables explain each variable. Small tolerance values (less than .10) and high VIF values (greater than 10) denote high collinearity (Pérez & Medrano, 2010).

Bartlett's sphericity test is used to test the null hypothesis that states that the variables are not correlated in the population. That is, it checks if the correlation matrix is an identity matrix. The results present a high value of the test, and whose reliability is less than 0.05 can be considered valid (Montoya-Suárez, 2007). In this case, the null hypothesis is rejected, and the analysis continues.

The Kaiser-Meyer-Olkin Index indicates how appropriate it is to apply factor analysis. Values between 0.5 and 1 show that it is reasonable to use it (Montoya-Suárez, 2007); our index of 0.853 suggests that it is appropriate to continue with the analysis.

KMO index and Bartlett's test of sphericity		
KMO index		0.853
Bartlett's test of sphericity	Chi squared	295.297
	df	78.000
	Sig.	0.000

Table 5: KMO and Barlett test that measure that there are no correlations between variables and if the sample used is adequate.

The component matrix results show two factors, but it is clear that they all present a higher factor load in the first component, suggesting that factors should not segregate the items.

Component matrix, principal components method		
	Components	
	1	2
Does the newscast present good quality images?	0.779	
Does the newscast present illustrative (supporting) images consistent with the news?	0.771	
Do journalists have little vocabulary?	0.736	
Does the newscast have coherence in the writing?	0.72	
Does the newscast have clarity in the writing?	0.71	
Does the newscast have relevant terminology?	0.674	
Does the newscast have journalists with good diction?	0.658	
Does the newscast present relevant information?	0.583	

Does the newscast present current information?	0.582	
Is the duration of the newscast versus content appropriate?	0.573	
Does the newscast present enough supporting material to make the news easier to understand?	0.566	
Do journalists present fillers?	0.555	0.51
Do journalists present their personal insights?	0.528	

Table 6: Component matrix, principal component method.

We will continue with the Varimax rotation to verify that the trend of a factor is maintained. After rotating the items, we can observe the presence of two factors.

Rotated Component Matrix, Varimax		
	Components	
	1	2
Does the newscast have coherence in the writing?	0.756	
Is the duration of the newscast versus content appropriate?	0.691	
Does the newscast have clarity in the writing?	0.69	
Does the newscast present enough supporting material to make the news easier to understand?	0.686	
Does the newscast present relevant information?	0.623	
Does the newscast have journalists with good diction?	0.578	
Do journalists present fillers?		0.752
Does the newscast have relevant terminology?		0.714
Do journalists present their personal insights?		0.698
Does the newscast present good quality images?		0.672
Does the newscast present illustrative (supporting) images consistent with the news?		0.611
Do journalists have little vocabulary?		0.565
Does the newscast present current information?		0.515

Table 7: Rotated Component Matrix, Varimax

Finally, Who analyzed the instrument's reliability with Cronbach's alpha coefficient; the coefficient calculates each item or item's correlation with each of the others, resulting in a large number of correlation coefficients. The alpha value is the average of all the correlation coefficients (Cervantes, 2005; Milton, 2010); Cronbach's alpha's acceptable values to measure internal consistency are in the range of 0.7-09 (Celina Oviedo & Campos Arias, 2016).

Prueba de consistencia interna	
Alfa de Cronbach	Ítems
0.88	12

Tabla 8, Prueba de Consistencia Interna o Alfa de Cronbach

Finally, the calculated Cronbach's alpha coefficient was 0.88; considering the postulate that expresses that the result must be greater than 0.8 to be consistent, we conclude that the instrument has internal consistency and can be used to measure the quality of newscasts.

After these evaluations are carried out in the factor analysis, we will consider the review's structuring. With this, we would have two categories that would encompass the following aspects:

• Editorial Aspects: here, we will analyze those aspects that are merely controlled by newscast management.

• Individual Aspects: in this category, we will consider those aspects that journalists handle individually as communication professionals.

Taking these scenarios into consideration, we have the following instrument as a final result:

Instrument for Measurement of Quality of the News				
Instructions: from questions 7 to 19 check the box where:				
1 = very bad	2 = bad	3 = fair	4 = good	5 = very good

Context regarding Newscasts:
Here you will find a brief explanation of the aspects to take into consideration when evaluating this instrument.
Information Quality Questions: only the information presented in the newscast is taken into consideration. The news agenda is presented and what type of content they offer us as relevant.
Audiovisual Quality Questions: Here, we will see the staging of that information. They are the audiovisual aspects that are seen in the broadcast of the newscast.
Quality Questions of the Writing: Every television newscast requires writing, and of this, the journalistic notes, the teleprompter script is composed.
Presentation Quality Questions: The presentation of the newscast is made up of journalists. Here we will analyze its management and execution during the production of the news.

Qualification method:

When rating this instrument, you can do it by category to represent a comparison between each dimension, or you can do it in its entirety to give an overall rating. Who will evaluate by calculating averages where you will add each value, and then this sum will divide it by the number of items or questions added.

$$\mathbf{M} = \frac{C + C\dots}{ti}$$

M = Quality

C = Rating by item

ti = Total items

The result will be between 1 to 5, being the following: 1 = very bad 2 = bad 3 = fair 4 = good

5 = very good

Informant General Information
0. Age: _____
1. Sex: _____
2. Occupation: _____
3. Years of Study: _____

General Newsletter Information
4. Name of the Newscast: _____
5. Transmission Schedule: _____
6. Transmission Channel: _____

Dimension of the Quality of Editorial Activity

In this dimension, we will analyze those aspects that are merely controlled by the newscast's direction. Situations in which the decision is only for those who manage the news information grid.

Based on this, we will rate the following section:

N°	Question	Rating from 1 to 5
7	Does the newscast have coherence in the writing?	
8	Is the duration of the newscast versus content appropriate?	
9	Does the newscast have clarity in the writing?	
10	Does the newscast present enough supporting material to make the news easier to understand?	
11	Does the newscast present relevant information?	
12	Does the newscast have journalists with good diction?	

Dimension of the Quality of Individual Activity

In this dimension in this category, we will consider those aspects that are handled by journalists individually as communication professionals.

Based on this, we will rate the following section:

N°	Question	Rating from 1 to 5
13	Do journalists present fillers?	
14	Does the newscast have relevant terminology?	
15	Do journalists present their personal insights?	
16	Does the newscast present good quality images?	
17	Does the newscast present illustrative (supporting) images consistent with the news?	

18	Do journalists have little vocabulary?	
19	Does the newscast present current information?	

CONCLUSION AND RECOMMENDATION

● The instrument presented here has satisfactorily passed all the required evaluations that give it the ethical, numerical, and professional values necessary for its results to be reliable.

● This instrument has been structured so that any person can fill it out, and thus, its results are valid for the benefit of academic research.

● The need for a duly validated, analyzed, and constructed instrument contributes to the need to measure the quality of newscasts based on the newscast's performance and not on the audiences who count preferences but not quality.

● The results of the use of this instrument should be used responsibly, not to defame but to contribute to improvements in the collection, editing, and presentation of news.

● This research mitigates speculation and opinion that does not reflect scientific and valid weight for improving journalistic resources in Panama and the world.

ACKNOWLEDGMENTS:

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