

# When Statistics and Management meet - consumers' attitudes towards the communication of sports brands in social networks

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**Abstract**— The large number of users of different social networks makes them a key channel of approach, interactivity and sharing between consumers and brands. The increasing access and use of social networks brought challenges in communication and marketing strategies. The present investigation proposed to analyze and understand the opinions of consumers regarding the communication of sports brands in social networks and also to evaluate its impact on their purchase intentions and recommendation. The data collected allowed to conclude that the formation of a favorable attitude by consumers towards the communication of sports brands in social networks should be based on informative, relevance of contents, and credible communication created in an entertainment context. This positive attitude towards brands has favorable repercussions in the buyers' intention and recommendation.

**Keywords**— Buy intention; Consumers; Exploratory Study; Social networks; Sports brands.

## I. INTRODUCTION

SOCIAL networks change the paradigm of communication and marketing, allowing them to interact differently with their audience, learning more about the consumer [1].

Facing competition and consumer demands, companies are forced to look for new alternatives to achieve a more authentic, transparent, fast and efficient communication with less economic effort and greater profitability. In this sense, companies as well as brands, currently have a strong presence in partner networks. Examples of social networks like Twitter, YouTube, Instagram, Google+, Facebook, Pinterest, among others, are new alternative tools to traditional communication, and put the marketers to face the new challenges of

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communication and marketing.

Social networks have thus become a major influencer of consumer behavior, namely in the dimensions of awareness, information, acquisition, purchasing behavior, communication, post-purchase and evaluation [2].

Therefore, the following research aims to analyze and understand the opinions of consumers regarding the communication of sports brands through social networks and what their impact on their intentions of purchase and recommendation of new sportive items.

The paper is organized as follows. Section II is concerned to the methodology adopted for this research; an exploratory study is presented, as well as the dimensions/features related to communication that are prospected. The Section III is related to the results analysis; descriptive statistics, principal component analysis and correlations are provided with the aim to consolidate the study. Finally, the main conclusions are given in the fourth section.

## II. METHODOLOGY

To study this problem, a general hypothesis was defined:

GH: The communication of sports brands in social networks, influences the general attitude of consumers.

In order to make an exploratory analysis, a conceptual model was designed, adapted from the work developed by Zhang and Wang [3] and Zeng, Huang and Dou [4]. This original model was developed to analyze consumers' perceptions and attitudes towards advertising in traditional media and the Internet. In this study the main focus are the social networks. The conceptual model presented is composed by eight dimensions that give rise to seven hypotheses of investigation (see Figure 1 for more details).

The main objective of this research is to analyze and understand the consumers' opinions regarding the communication of sports brands through social networks. The communication is evaluate taking into account several aspects, such as efficiency of the message, informative character of the communication, credibility of the information, the perceived relevance, and the inclusion of entertainment on ads. In addition, it was also an aim to understand the impact of this communication on the intention of buy and recommend a sport brand.

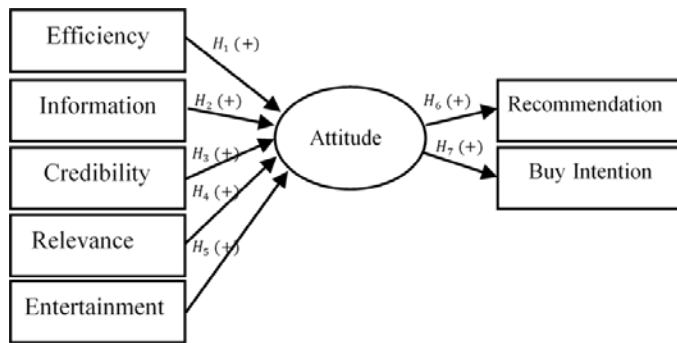


Figure 1 – Conceptual model

Thus, some specific hypotheses have been formulated:

H1: The perceived efficiency of the communication of sports brands in social networks positively affects the general attitude of consumers towards their communication.

H2: The informative nature of the communication of sports brands in social networks positively affects the general attitude of consumers towards their communication.

H3: The perception of the credibility of the communication of sports brands in social networks positively affects the general attitude of the consumers towards their communication.

H4: The perceived relevance of the communication of sports brands in the networks positively affects the general attitude of consumers towards their communication.

H5: The perception of entertainment in the communication of sports brands in social networks positively affects the general attitude of consumers towards their communication.

H6: The general attitude of users regarding the communication of sport marks on social networks positively affects the degree of recommendation of sports brands.

H7: The general attitude of users towards the communication of sports brands on social networks positively affects the intention to purchase sports brands.

Each dimension of communication is now briefly explained. The items that were used to study each dimension are provided in Table 1.

#### A. Attitude towards communication of sports brands in social networks

Attitude can be defined as a learned predisposition in which the consumer behaves favorably or unfavorably towards a particular object, for example, a category of products, a brand, service, and advertising on social networks, among others [5]. Attitudes thus refer to positive or negative cognitive dispositions related to a given object. In the online context [6], it defines attitudes towards Internet advertising as a general predisposition to "like" or "dislike" the content of past messages online.

#### B. Efficiency

Ducoffe [7] argues that, in order to facilitate the advertising efficiency between advertisers and consumers, advertising needs to integrate information and provide entertainment. The efficiency of advertising on social networks can be considered

as the degree to which advertising has a desired effect on consumers [8].

#### C. Informative

Shavitt *et. al* [9] argue that when a user has information about a particular product or brand, it knows its benefits and therefore creates a positive image in his mind. According to Muntinga *et. al* [10], in social networks the main advantage of information is the exchange between users. When there is social use by consumers of a particular product or brand, advertising has a positive effect on social network users.

#### D. Credibility

Credibility is the measure to which social network users believe that certain types of advertising are trusted [11]. Perceived credibility in advertising plays a central role in the attribution and perceived value of advertising on social networks to consumers. For Moore and Rodgers [12], perceived credibility in advertising can be defined as a measure in which consumers believe or trust in advertising claims. Consumers react positively to authenticity so credibility is positively correlated with consumer attitudes toward advertising and purchase intent [13]-[14].

#### E. Perceived Relevance

The perceived relevance of advertising on social networks will create value for consumers [4]. Kim and Sundar [15] argue that relevant advertisements may be perceived by Internet users as containing important information. Conversely, if the advertising message is not relevant to the recipient, the information is not likely to be processed and seized by the recipient.

#### F. Entertainment

According to Shimp [16], Mackenzie and Lutz [17] and Shavitt *et. al* [9], entertainment ads on social networks drive the efficiency of information contained in advertisements. These are likely to be used to meet the needs of hedonic consumers [18], thus developing sympathy, and creating pleasure and enjoyment for consumers [19]. Advertising is able to satisfy pleasurable needs through the provision of entertainment [20].

#### G. Buy Intention

Advertising value acts as a subjective utility function for consumers. Advertising on social networks is useful and consumers tend to have a positive attitude towards brands, and eventually, could reinforce the purchase intent. Positive attitude towards advertising leads to a positive attitude towards the brand advertised [21] and consequently generates in consumers the intention to buy branded products [22]. Zeng *et al.* [4] reinforces this though saying that advertising value is positively related to purchase intent in the social media environment.

#### H. Recommendation

Word-of-mouth (WOM) results from people's natural tendency to share their thoughts about the products they use and the ads that come [23]. These shared thoughts or WOM can be classified as positive, neutral or negative [24].

Ping *et al.* [25] investigated the process of forming consumer products through online WOM and concluded that positive WOM has a greater impact on the positive proliferation of attitudes toward certain positive products than negative WOM.

A positive WOM will have a positive impact on consumer attitudes, and consequently, those who have positive attitudes toward a product are likely to pass on positive information to friends, family, and others [26]-[27]. So, companies must take into account customer satisfaction when they are developing advertising campaigns, this way, satisfied customers will pass a positive WOM, otherwise will pass a negative WOM.

In the present investigation a questionnaire was developed to perceive the attitude of the consumer related to sports brand. The sampling technique used in this investigation is non-probabilistic and for convenience.

The questionnaire was available in two ways: hand-delivered in printed form and published online through the Google Docs forms.

It is composed by three parts: the first one is related to general questions to characterization of the sample; the second part the has the aim of understand the consumers' habits related to the use of social networks; the last one is composed 36 questions divided by the eight dimensions previously described.

The respondents of this study are residents of Portugal of both genders.

### III. ANALYSIS OF RESULTS

It were collected 301 answered questionnaires; only 174 surveys were validated; in all validated questionnaires, no missing cases were found. One of the questions of the second part of the survey was eliminatory: only the questionnaires that indicated that follow sports brands on social networks were considered, due to the focus of the study.

#### A. Sample Characterization

The sample of 174 followers of sports brands in social networks is made up mostly of females (66.7%), while males represent 33.3%.

With regard to the age of the respondents, the majority of respondents are between 18 and 24 years of age, with 123 individuals, followed by the age group of the respondents 25 to 34 with 27 individuals, the age group with ages inferior to 18 years with 11 individuals, the age group from 35 to 44 with 8 individuals and finally the age group with ages over 44 years with 5 individuals.

Besides, 70.7% of the respondents are students, 20.7% are employee, 5.2% are unemployed, 2.9% are self-employed and 0.6% are retired.

#### B. Habits on the use of social networks

The respondents usually use the social networks Facebook (36.2%), Instagram (25.3%) and Youtube (20.4%). In addition, they referred other social network, such as Pinterest, Twitter, Google +, Linkedin and others with a small percentage.

It was possible to conclude that 93% of respondents use social networks several times a day, while 6% use once a day and only 1% of respondents say they use social networks once a week.

The 174 individuals claimed to be followers of sports brands on social networks, where the three most followed by users are: Nike corresponding to 35.6% of the sample, Adidas (29.2%) and New Balance (11.3%). These proportions meet the number of followers of the sports brands themselves, according to the official Facebook brands in the country.

Three main reasons for following sports brands in social networks are selected: keeping up-to-date on brands' products/services/offer (27.1 %), receive information on new products in advance (15.2%) and receive discounts and promotions (13.2%). Other reasons were given by respondents, but with lower loading in the research: brand customer, product innovation, brand awareness, quality of products/services, promotions or hobbies on the brand page, interacting with the brand, a friend is also a follower, and knowing and helping other brand fans.

#### C. Communication of Sports Brands on Social Networks

This subsection is related to data analysis concerning the communication of sports brands on social networks. All dimensions studied were measured using the five-point Likert scale, where the value 1 corresponds to "Totally Disagree" and the value 5 to "Totally Agree". The summarized results are in Table 1. The 36 questions (numbered by item) were divided by 8 dimensions (as described by the first column of the table).

Descriptive statistics are presented - minimum, maximum, mean and standard deviation – to give a panoramic view of the results.

To evaluate the reliability of the scales used the Cronbach alpha coefficients were evaluated. Cronbach's alpha is a statistical tool that quantifies 0 to 1, the internal reliability of a questionnaire, and the minimum acceptable value to consider a reliable questionnaire is 0.7 [28].

In Table 1, most of the items were answered using the totality of the scale (from 1 to 5). The items with higher mean are in dimension "General attitude" and "Efficiency", with the means 4,28 (I2) and 4,01 (I6), respectively. The lowest means are concerning to the items I13 (2,64), I24 (2,48) and I29 (2,63), showing that the advertising on social networks is not the only way to communicate to clients and give them trust in the product. The standard deviation does not present great discrepancies between items.

Table 1 - Descriptive Statistics and PCA

| Dim.             | Item  | Descriptive Statistics |     |      |               | Cronbach's Alpha | Principal Component Analysis (PCA) |                 |             |                        |
|------------------|---|------------------------|-----|------|---------------|------------------|------------------------------------|-----------------|-------------|------------------------|
|                  |   | Min                    | Max | Mean | St. Deviation |                  | Communalities                      | Factor Loadings | KMO Measure | Bartlett's Test (sig.) |
| General Attitude | I1 - I have a favorable opinion on the communication of sports brands in social networks.   | 2                      | 5   | 3,91 | ,644          | ,792             | 0,748                              | 0,865           | 0,703       | 0,000                  |
|                  | I2 - I am in favor of sports brands being communicated on social networks.  | 1                      | 5   | 4,28 | ,771          |                  | 0,669                              | 0,818           |             |                        |
|                  | I3 - In general, I like the communication of sports brands in social networks.  | 1                      | 5   | 3,93 | ,768          |                  | 0,719                              | 0,848           |             |                        |
| Efficiency       | I4 - Communication of sports brands in social networks is more effective than in other media (TV, Radio, Press ...).              | 1                      | 5   | 3,47 | 0,942         | 0,733            | 0,579                              | 0,761           | 0,653       | 0,000                  |
|                  | I5 - Communication of sports brands on social networks is a good contribution to the promotion of sports brands.                  | 1                      | 5   | 3,9  | 0,782         |                  | 0,655                              | 0,809           |             |                        |
|                  | I6 - I consider social networks an effective way to communicate sports brands.  | 1                      | 5   | 4,01 | 0,753         |                  | 0,753                              | 0,868           |             |                        |
| Informative      | I7 - I look for information related to commercials of sports brands present in social networks.                                   | 1                      | 5   | 3,24 | 0,972         | 0,668            | 0,543                              | 0,737           | 0,640       | 0,000                  |
|                  | I8 - When I intend to buy a sports product, I look for information on social networks.  | 1                      | 5   | 3,36 | 1,086         |                  | 0,693                              | 0,832           |             |                        |
|                  | I9 - The communication of sports brands in social networks is a convenient source of information.                                 | 1                      | 5   | 3,78 | 0,744         |                  | 0,588                              | 0,767           |             |                        |
| Credibility      | I10 - The communication of sports brands in social networks is reliable.  | 1                      | 5   | 3,40 | ,846          | ,860             | 0,660                              | 0,813           | 0,851       | 0,000                  |
|                  | I11 - The sports products communicated in social networks are reliable.   | 1                      | 5   | 3,41 | ,847          |                  | 0,705                              | 0,839           |             |                        |
|                  | I12 - Communication in social networks helps to buy the best brand at the best price.   | 1                      | 5   | 3,27 | ,926          |                  | 0,449                              | 0,670           |             |                        |
|                  | I13 - The sports brands that are in social networks are more reliable than those that are not.                                    | 1                      | 5   | 2,64 | 1,118         |                  | 0,361                              | 0,601           |             |                        |
|                  | I14 - Communication of sports brands on social networks is credible.  | 1                      | 5   | 3,36 | ,867          |                  | 0,687                              | 0,829           |             |                        |
| Relevance        | I15 - The communication of sports brands that is made in social networks is worthy of trust.                                      | 1                      | 5   | 3,29 | ,924          | ,921             | 0,810                              | 0,900           | 0,776       | 0,000                  |
|                  | I16 - Communication of sports brands on social networks is relevant to me.  | 1                      | 5   | 3,29 | ,962          |                  | 0,724                              | 0,851           |             |                        |
|                  | I17 - Communication of sports brands on social networks is important to me.   | 1                      | 5   | 3,16 | ,990          |                  | 0,867                              | 0,931           |             |                        |
|                  | I18 - The communication of sports brands in social networks means a lot to me.  | 1                      | 5   | 2,87 | 1,115         |                  | 0,825                              | 0,908           |             |                        |
|                  | I19 - Communication of sports brands on social networks is valuable to me.  | 1                      | 5   | 2,94 | 1,079         |                  | 0,828                              | 0,910           |             |                        |
| Entertainment    | I20 - The communication of sports brands in social networks is pleasant.  | 1                      | 5   | 3,64 | ,753          | ,853             | 0,733                              | 0,856           | 0,705       | 0,000                  |
|                  | I21 - Communication of sports brands on social networks is fun.   | 1                      | 5   | 3,45 | ,822          |                  | 0,840                              | 0,916           |             |                        |
|                  | I22 - The communication of sports brands in social networks provides a pleasant experience.                                       | 1                      | 5   | 3,30 | ,888          |                  | 0,754                              | 0,868           |             |                        |
| Recommendation   | I23 - I usually recommend the sports products / services that I like and see on social networks to my friends / family.           | 1                      | 5   | 3,24 | ,949          | ,778             | 0,486                              | 0,697           | 0,735       | 0,000                  |
|                  | I24 - I often share sports brand products / services on my social networks.   | 1                      | 5   | 2,48 | 1,191         |                  | 0,591                              | 0,769           |             |                        |
|                  | I25 - I often comment with my family or friends about the communication of sports brands on social networks.                      | 1                      | 5   | 3,02 | 1,143         |                  | 0,753                              | 0,868           |             |                        |
|                  | I26 - When I see an interesting sports brand ad on social networks, I comment on my friends.                                      | 1                      | 5   | 3,41 | 1,003         |                  | 0,578                              | 0,760           |             |                        |
| Buy Intention    | I27 - The communication of sports brands presented in social networks influences the consumer's intention to buy.                 | 1                      | 5   | 3,77 | ,786          | ,871             | 0,547                              | 0,740           | 0,840       | 0,000                  |
|                  | I28 - I intend to buy the sports products that are communicated on social networks.   | 1                      | 5   | 3,07 | ,959          |                  | 0,468                              | 0,684           |             |                        |
|                  | I29 - When I see a sports product communicated on social networks I intend to buy it.   | 1                      | 5   | 2,63 | ,907          |                  | 0,596                              | 0,772           |             |                        |
|                  | I30 - I already intend to buy sports products advertised on social networks.  | 1                      | 5   | 3,46 | ,995          |                  | 0,311                              | 0,558           |             |                        |
|                  | I31 - When a sports product is communicated on social networks, I am interested in acquiring it.                                  | 1                      | 5   | 2,94 | ,954          |                  | 0,491                              | 0,701           |             |                        |
|                  | I32 - Communicating sports brands on social networks is useful when deciding which brand or product I should buy.                 | 1                      | 5   | 3,33 | 1,010         |                  | 0,447                              | 0,669           |             |                        |
|                  | I33 - Communicating sports brands on social networks helps me to make purchasing decisions.                                       | 1                      | 5   | 3,34 | 1,017         |                  | 0,507                              | 0,712           |             |                        |
|                  | I34 - Communicating sports brands on social networks helps me remember products.  | 2                      | 5   | 3,66 | ,764          |                  | 0,588                              | 0,767           |             |                        |
|                  | I35 - The communication of sports brands in social networks influences my opinions and feelings about brands and sports products. | 1                      | 5   | 3,25 | ,921          |                  | 0,486                              | 0,697           |             |                        |
|                  | I36 - I have already looked for sports products in a store after they have been communicated on social networks.                  | 1                      | 5   | 3,63 | ,976          |                  | 0,215                              | 0,464           |             |                        |

Concerning to the reliability of the scales, through the alpha analysis of Cronbach, the constituent items of the dimensions represent values greater than 0.7, which performs a good internal reliability of the questionnaire.

Principal Component Analysis (PCA) is a factorial model in which factors are based on total variance. With this analysis it is necessary to evaluate the Kaiser-Meyer-Olkin (KMO) sampling adequacy measure and the Bertlett sphericity test. Both indicate the adequacy of the data for the accomplishment of the factorial analysis [28].

Through the results of the factorial weights of dimension "Attitude", we conclude that all the items present a positive correlation with this one. The item 1 is the one that has a more significant loading in the constitution of the study dimension, presenting a higher value (0.865) compared to the other items. Regarding the suitability measure of the KMO sample, the result obtained of 0.703 was close to 1, indicating an average degree of adequacy of the PCA. In this case, the calculated chi-squared statistic has a score of 160.161, and this test was significant at the level of 0.000 (<0.05), indicating the presence of correlation between the various items.

Regarding the communalities (after extraction), is possible to see, that the lowest values are in dimensions "Credibility", "Recommendation" and "Buy Intention", which translate in lower factor loading for correspondent item in the component. Some of these values are lower than the recommended by Field [29]. The KMO test for all dimension presents values higher than 0.6, which can be considered acceptable for the study. All Bertlett sphericity tests present a level of significance of 0.000 that is lower of the usual p-value (0.05), indicating the correlation between items.

Table 2 shows the correlation between the dimensions. The dimensions "Efficiency", "Informative", "Credibility", "Relevance" and "Entertainment" have positive (although low) correlations with the "General Attitude" dimension. In a conclusive way and according to the opinion of the respondents in this study, the "Efficiency" dimension is the most significant dimension for the formation of the general attitude of consumers towards the communication of sports brands in social networks.

**Table 2 - Correlation between dimensions**

|      | ATI    | EFIC   | INFO   | BUY    | REC    | CRED   | REL    | ENTR  |
|------|--------|--------|--------|--------|--------|--------|--------|-------|
| ATI  | 1,000  |        |        |        |        |        |        |       |
| EFIC | ,374** | 1,000  |        |        |        |        |        |       |
| INFO | ,338** | ,669** | 1,000  |        |        |        |        |       |
| BUY  | ,210** | ,604** | ,595** | 1,000  |        |        |        |       |
| REC  | ,004   | ,253** | ,396** | ,494** | 1,000  |        |        |       |
| CRED | ,221** | ,470** | ,470** | ,543** | ,456** | 1,000  |        |       |
| REL  | ,181*  | ,543** | ,561** | ,614** | ,529** | ,648** | 1,000  |       |
| ENTR | ,347** | ,414** | ,469** | ,523** | ,464** | ,663** | ,620** | 1,000 |

ATI= Attitude; EFIC= Efficiency; INFO= Informative; BUY= Buy Intention; REC= Recommendation; CRED= Credibility; REL= Relevance; ENTR= Entertainment.

\* significant value at the 0.05 level

\*\* significant value at the 0.01 level

It was also sought to understand if the general attitude of consumers towards the communication of sports brands in social networks could positively influence the recommendation

and the intention to buy them. In this sense, we test the hypotheses formulated, H6 and H7. The data obtained in this study led to the conclusion that the "General Attitude" dimension is not correlated with the "Recommendation" dimension, which means that the general attitude of the consumers does not influence the recommendation of the brands or sports products communicated in the networks social policies. However, the "General Attitude" dimension has a positive (although low) correlation with the "Intention to buy" dimension, which means that social network users who have a favorable attitude towards the communication of sports brands in social networks, positively influences consumers' purchasing intentions.

#### IV. CONCLUSIONS AND FUTURE WORK

The constant growth of users of social networks and the increase of access hours are some of the factors that represent opportunities for companies and brands, namely: building relationships with current and potential consumers, market research, increased awareness, and sales growth, among others. It is notorious for the constant increase of the presence of companies and brands in social networks. In order for the presence of companies and brands in these online platforms to be successful and hence to acquire a return on investment, they must consider partner networks as a two-way communication tool based on a space of sharing, learning and interactivity. The communication and marketing strategy of companies and brands present in social networks should be oriented in the medium and long term and should be based on building a relationship of trust and loyalty.

By calculating the Cronbach's alpha of the eight dimensions scale presented, it was verified that all dimensions studied present an acceptable value of reliability and validity of the results.

Through the descriptive analysis of the data, in general, the respondents perceive the communication of sports brands in social networks as being effective, informative, credible, relevant and fun.

Through the correlation between dimensions, it is concluded that there is a positive correlation between the "General Attitude" dimension and the dimensions "Efficiency", "Informative", "Credibility", "Entertainment". Although these correlations are mostly low to moderate, they are significant at the 0.01 and / or 0.05 levels.

The formulation of hypotheses is in general the path to reach the proposed objectives and, in this sense, all the hypotheses formulated, with the exception of H6, were supported. Thus, it has not been possible to demonstrate that a favorable attitude towards advertising on social networks will lead to a recommendation of the same by parties of consumers to other colleagues and / or family members.

The results obtained in the present research are in agreement with the results of the studies developed by Zang and Ping [30], Zhang and Wang [3], and Brackett and Carr [13].

The results of this paper are in agreement with the results obtained by Zhang [30], namely with regard to the low correlations obtained between the mentioned dimensions.

As future work is intended to study the database as Structural Equations Model, to understand better the relations between the dimensions. It is also important to rethink the dimension scale, in order to explore other features of communication advertising in social works to understand the process of recommendation of sports brand by Internet users.

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