

Determinants of ethical behavior in social networks in Cameroon: the case of group « Kerel Kongossa !!!! » on Facebook

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Abstract. *The objective of this paper is to determine the explanatory factors of ethical behavior in social networks in Cameroon. To do this a study based on the posts of members of a group on Facebook called Kerel Kongossa!!!! was conducted. The data are obtained from 1000 posts recorded during the periods of April to August 2019. The methodology focuses on the analysis of descriptive statistics and logistic regression. Two main results are obtained from this research. On one hand, among the variables retained, posts of an educational nature, social events, funny, visible and intelligible posts have a positive and significant impact on the ethical behavior of individuals (determinants of moral behavior). On the other hand, insulting posts and unwanted content rather have a negative impact on the ethical behavior of individuals (determinants of amoral behavior). Overall, there is a gradual and accentuated depravity of mores in relation to the shared content and the interactivities of members of the group. The main beneficiaries of this research are young people in particular, and society as a whole in general. Given the ever-increasing internet penetration rate among the population, it is essential to place special emphasis on controlling published content in order to limit the proliferation of deviant behaviors. This involves (i) the meticulous examination of applications for membership to the group to detect false profiles that are vectors of deviant behaviors, (ii) to increase the number of administrators / moderators to coordinate interactions in the group. The choice of these administrators / moderators should also take into consideration the days and times they can be connected online.*

Keywords: ethical behavior, moral, amoral, social networks, kerel Kongossa !!!!, Facebook

JEL Codes: Z13

Warning: *The author wishes to reassure the members of the group “Kerel Kongossa !!!!” regarding anonymity in the process of gathering information.*

1. Introduction

Social networks! These fantastic social networks that occupy our days; or who fill in the dead time, for those who are less addicted. One can complain about wasting our time, eyes fixed on our screen as if every second an event of the highest importance was going to happen; we go back every day, irremediably, as if it was the first time (Le Breton, 2016).

A social network refers to a collection of people or organizations that are linked together by social interaction (Fayon, 2008; Magdalena and Jacek, 2013). In other words, social networks refer to all the websites that make it possible to form a network of friends or professional knowledge and provide their members with tools and interfaces for interaction, presentation, and communication. At the end of the 1990s,

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social networks appeared on the Internet, bringing people together through personalized exchange services (Magdalena and Jacek, op.cit.).

With digital development, we are witnessing the multiplicity of these social networks. Making friends and staying in contact are facilitated by social networks, in a form of anonymity more or less displayed. More and more, private social networks are being created on the internet. They are in one way or another “private” clubs for seniors, singles but also families and many audiences often selected by personal interests based on the principle of homophily²(McPherson and Smith-Lovin, 1987). Some social networks on the Internet bring together real-life friends, others help to create a circle of friends, find business partners or a job and there are social networking services, such as Facebook, Twitter, Instagram, LinkedIn or WhatsApp, the list is not exhaustive. Statistics of 2018 show that Facebook is the most used social network with 2.27 billion active users per month, compared to 1.7 billion users for YouTube, 1.5 billion for WhatsApp, 1 billion for Instagram, 326 million for Twitter, 300 million for Skype and 188 million for Snapchat (Viard, 2018).

Facebook has a particularity that gives the user this impression of living a second life. This is associated with the fact that this network permits us to connect with our friends we have lost contact with and even those we have never met. However, we can play with the identity, create it, control what we want to reveal to the public. In this connection, we have in recent years been witnessing a growing phenomenon, which is the development of discussion groups. These groups bring together individuals, depending on their specific interests, who change and share experiences and concerns in specific areas. Thus we find for example the group Economics for the followers of the economic sciences, or the group classical music for classical music fans. These specific groups participate in creating a sense of fulfillment because we can exchange with individuals with whom we share the same passion. Besides, there are also entertainment groups of another kind, called “fourretout”. The particularity of this is that the shared content is not controlled, everyone is free to publish what he wants, hence the tendency to deviant behaviors, coupled with insults of any kind. In the African context in general and Cameroonian in particular, the most popular entertainment groups are Kmer-kongossa et kerel NO stress (dans la paix), Kerel kongossa !!!!, LE CAMEROUN c’est le CAMEROUN, Kmer NO LIMIT Plus, Kongossa VIP. Among these groups, attention is focused on Kerel kongossa!!!! because of the number of subscribers, the frequency of interventions, but also the diversity of shared content.

The contribution of this study is on at least two folds. Firstly, this study, to our knowledge, is the first to focus on the ethical analysis of the behavior in social networks in Cameroon. Secondly, this study has the merit of modeling these behaviors in order to highlight the different interactions between the specific characteristics of each participant. Thus, the objective of this paper is to highlight the determinants of the ethical behavior of members of the group Kerel kongossa !!!! through the characteristics of the published content. To do this, we will, first of all, make a general presentation of the group Kerel kongossa !!!! (section 2); then, undertake a review of the literature on the behavior of individuals on social networks (section 3); describe the methodology of the study (section 4) and finally present the results and implications (section 5).

2. Presentation of the group *Kerel kongossa* !!!!

Kerel kongossa !!!! is a “closed” group on Facebook created on July 24, 2013. It had 334.979 and 356.483 members respectively in June and November 2019, active in 128 countries and spread across the five continents. The members are mainly Cameroonian, and from African countries in general. The group is supervised by two administrators, assisted by five moderators. Group membership is on request, subject to

² In social networks, homophily refers to tendency for similar persons to maintain relationships with people who are similar to themselves, as characterized by age, gender, race, religion, or profession (Matthew, 2010)

the assessment of the administrators and / or moderators. The motto of the group is “To everyone his madness but respects his neighbor”. This means that everyone is free to publish what he wants, when he wants and how he wants while respecting others.

The posts of the members touch as many fields as societal facts, religion, culture, education, health, and asides, all destined to individuals according to their humor and expectations. These posts are commented on or liked by other members of the group. Most often, comments go in all directions, usually without any logic: insults, hilarities, moral lessons; all this in a language sometimes misunderstood by people not used to this kind of discussion. Group members are found in all social classes (adolescents, adults, students, academics, workers, unemployed, rich, poor, etc.). The frequency of publication in the group is 995 posts on average per day, 85% of the members are active in the group with about 10 million interactions per month (publications, comments and reactions). The group receives about 1000 applications for membership per day; and according to its ethical policy, on average 700 members are suspended per month for misbehavior and deviant behavior (since its creation, 11719 members have been excluded from the group). We are therefore facing a phenomenon that is gaining momentum on the Internet, favored by digital development.

In this regard, World Bank data (2017) show an increasing evolution of Internet access and mobile telephony in Cameroon. In fact, subscriptions for mobile phones have gone from about one telephone per 100 inhabitants in 2000 to about 82 telephones per 100 inhabitants in 2017; this in a context where the Internet penetration rate in the population is on a rise. As an illustration, the rate of Internet users as a percentage of the country's population increased from 0.25% in 2000 to 23.20% in 2017. One can question the significance of these statistics of Cameroon compared to other countries. Thus, when comparing the situation of Cameroon with the rest of the countries of the CEMAC sub-region (Central African Economic and Monetary Community), for example, it is quickly realized that digital development is more advanced. In fact, mobile phone subscriptions in CEMAC account for 70.25 telephones per 100 inhabitants, while the rate of internet users was estimated at 10.86% in 2017; significantly lower than Cameroon's statistics. Given that we connect to social networks using telephony (phone, tablet, PC) and an internet connection, these statistics confirm the ever-growing digital development in the Cameroonian environment.

From these analyses, it is clear that Cameroon offers a representative environment for analyzing the cognitive content of information and interactions between individuals in social networks. Before going further in the construction of our reasoning, it is widely accepted that all research must be based on a theoretical foundation, through the works that support the research process. The following section situates the theoretical foundation of this research, based mainly on the works of Shaw (1964) and Ajzen (1991).

3. Literature review and research trends

Theoretical discussions about the study of social networks can be summarized in the analysis of communication networks or networks of groups. The theoretical underpinnings of such an approach date back to the 1950s and 1960s with the work of pioneering authors such as Heyns (1958), Gilchrist (1959), Mulder (1963), Shaw (1964), and many others. The works of these authors concern the networks of groups because at that time the Internet did not exist yet. However, the content of this work can be transposed to the analysis of networks of virtual groups (social networks) by assuming that the behaviors expressed in these networks could have repercussions in real life.

Indeed, Heyns (1958) had already been interested in the relationship between social conduct and personality characteristics. The prediction of social behavior from the personality variables gives rise to important work, but which faces methodological difficulties in relation to the nature of the instruments of measurement of the personality and the insufficient specification of the social context where these behaviors

can be analyzed. To overcome this methodological insufficiency, one could compare the personality traits in groups classified according to social categories. However, in this regard, Forehand and Haller (1964) demonstrate that there is a statistical but weak relationship between personality adjustment and social status. In addition, these networks suffer mainly from the lack of analytical tools that allow accounting for their structural characteristics. Since the various tools that have been proposed so far are not satisfactory, there is a need to explain the differences observed by underlying factors, adapted through the analysis of Shaw (1964), whose main ones are independence and saturation.

Independence reflects the degree of freedom of the individuals in the group. This freedom determines the subject's satisfaction, but also its efficiency in the group, indirectly, through motivation. When independence is weak, it does not only limit the subject's possibility of expression and action but also its willingness to achieve a worthwhile performance. It can be influenced by the accessibility of the subject to the information, by the action of other individuals in the group, by the type of task and, above all, by the place of the individual in the network. The concept of saturation, originally proposed by Gilchrist (1959), is related to the maximum number of messages a subject can receive in a given time. Going further, Shaw (1964) mentions that saturation is related to the set of requirements that a subject must face in a given position of the network. It is determined by the number of channels, by the requirements of the task itself, by the activity of the other members of the group. Thus, in a centralized network, the central individual will be more vulnerable to saturation since he receives more messages (Mulder, 1963). Similarly, when the task of the group becomes more complex, the risks of saturation increases: not only are there more requests, but data manipulation is more important. Shaw (1964) considers that these two concepts can practically account for all the results obtained so far in the group studies. Thus, if the increase in the size of the group decreases its efficiency, it is because the multiplication of the members decreases the independence of each one and increases the number of communications, thus the risk of saturation. These concepts of independence and saturation shed new light on the interactions of individuals in social networks.

Going further, Ajzen (1991) postulates that for human behavior, to be effective, it must first be decided or planned. He innovates with the Theory of Planned Behavior (TCP), as an improvement of the Theory of Reasoned Action (Fishbein and Ajzen, 1974). TCP aims to explain behaviors based on questions such as their relationship to attitudes, feelings of self-efficacy and social norms. Thus, according to Ajzen (1991), for behavior to be planned, three types of factors are necessary:

- Judgments about the desirability of behavior and its consequences (attitudes towards behavior);
- Considerations about the influence and opinion of familiarities on displayed behavior (social norms);
- Beliefs about the subject's ability to perform the behavior (control of perceived behavior).

Schematically, this theory is illustrated in Figure 1.

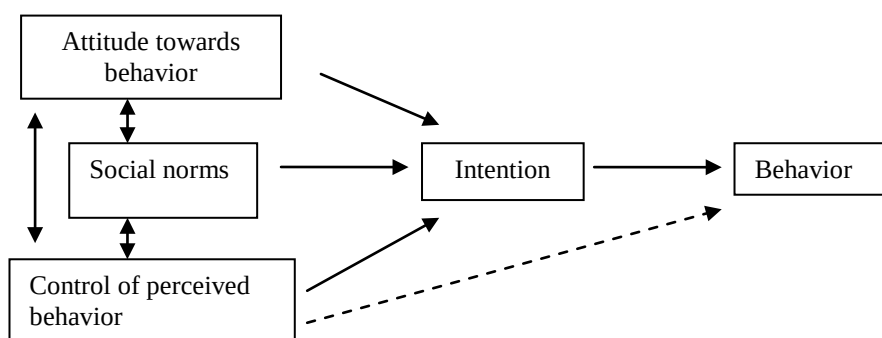


Fig. 1: Graphical representation of the Theory of Planned Behavior.
 (Source: Ajzen (1991))

According to the TCP, the control of perceived behavior, as well as behavioral intent, can be used directly to predict behavioral success. To do this, at least two hypotheses can be proposed. First, by keeping the intention constant, the effort to carry out behavior is likely to increase with the control of the perceived behavior. For example, even if two people have the same intention to publish content and are trying to do so, the person who is confident of being able to assume his post is more likely to persevere than the person who doubts his ability. Second, the control of perceived behavior can be used as a substitute for a measure of actual control. The question of whether a measure of the control of perceived behavior can replace a measure of actual control depends, of course, on the accuracy of perceptions. The control of perceived behavior may not be particularly realistic when a person has relatively little information about the behavior that is expressed, when the requirements or available resources have changed, or when new and unknown elements have entered the situation. Under these conditions, a measure of control of perceived behavior may not add precision to the behavioral prediction. However, since perceived control is realistic, it can be used to predict the probability of a successful behavioral attempt (Ajzen, 1985). The following section allows the operationalization of this research by proposing a methodological approach of analysis.

4. Methodology

The presentation of the methodology involves the presentation of data, clarification of variables and description of the analysis process.

4.1. The data

Data used are qualitative in nature. They are obtained from an interpretation of the characteristics of posts. The study population consists of 1000 posts recorded as a screenshot over a five-month period (April to August 2019). Based on the theoretical works of Shaw (1964) and Ajzen (1991), a number of modalities were identified for assessing the characteristics of each post. These terms are encoded by a binary process ("1" and "0") and summarized in table 1.

Table 1: Summary of study variables

Variables	Titles	Measures
Characteristics of the individual	Behavior	« 1 » – Moral « 0 » – Amoral
	Gender	« 1 » – Male « 0 » – Female
Nature of the post	Educational	« 1 » - Yes « 0 » - No
	Tribalist	
	Religious	
	Societal facts	
	Variety	
	Sexist	
	Insult	
	Unwanted content	
	Funny	
	Visible	
	Intelligible	

(Source: authors' work, based on literature and exploratory analysis of posts)

4.2. Description of the variables

The Variables are grouped into two categories: the characteristics of the individual and the nature of the post.

The characteristics of individuals are broken down into two categories: behavior and gender. Analyzing the behavior of individuals in social networks is a difficult task because some posts are made randomly without any logic of identity. To try to remove the ambiguity about this bias, we conducted a survey of a population of 10 individuals composed of academicians and civilians about the possibility of analyzing the behavior of individuals in social networks through their posts. According to this survey, of the 10 individuals surveyed, 03 people radically answer that it is impossible to determine the morality of an individual through a post; 04 people believe that the content of a post may reflect the hidden behavior or true morality of individuals; 01 person is indecisive on the issue; 02 people think that a post can be analyzed from an ethical point of view in two specific situations: if the post is educational or informative this could show the moral side of individual and if not, it is the amoral side which is put forward. On the basis of these elements, behavioral analysis is done from the moral and amoral points of view depending on the content of each post. With regard to gender, individuals take value "1" for male and "0" for female.

The nature of the post is broken down into eleven categories that take values "1" for "Yes" and "0" for "No".

- Educational: post likely to participate in education and training of other members of the group;
- Tribalism: post based on ethnic differences;
- Religious: post in relation to religious beliefs and practices;
- Facts of society: a qualifier for posts that make news everywhere;
- varieties: these are posts that have opposing aspects, opposing feelings and thoughts of different nature and quality;
- Sexist: post that advocates discrimination on the alleged superiority of man over women;
- Insult: post that contains words that aim to offend;
- Unwanted content: Post containing information that may offend the sensitivity of members. These are mainly pornographic posts, shocking images, etc.
- Funny: post capable of generating hilarity;
- Visible: considered positive (yes) for posts commented or liked more than 100 times;
- Intelligible: post that can be understood without difficulty. The emphasis here is on the quality of the language of expression and the respect of grammatical rules in writing.

The next subsection presents analysis and estimation technique.

4.3. Analysis and estimation technique

The assessment of the behavior of the members of the group *kerel kongossa !!!!* is based on a methodological approach constructed, on one hand, on descriptive analysis and, on the other hand, on logistic regression³.

For the descriptive statistics of our variables, we opt for flat sorting. Flat sorting, also called simple tabulation, is a descriptive statistics tool that offers the possibility of observing the distribution of individuals in relation to variables identified, but also to detect any errors that may occur in the coding of variables or

³ In this subsection, for purposes of simplification and given the objective of the paper, it was abstracted mathematical formulas so as not to move away from the cognitive content of the study.

during data entry. It also allows you to observe the frequency of answers in relation to selected indicators of measures.

A logistic regression is use to assess whether the peculiar characteristics of each post, conditions the behavior of individuals. In econometric literature, several methods are proposed for studying the relationship between a qualitative dependent variable and several quantitative or qualitative independent variables. These are the Probit, Logit, Tobit, Gombit regresions. Since our dependent variable is qualitative (binary), and the results of Shapiro Wilk and Kurtosis normality tests reveal that variables do not all follow a normal distribution, it is wise to use Logit model (Kleinbaum et al., 1988, p.656, Hosmer and Lemeshow, 2000, p.913).

As in all nonlinear models, the interpretation of estimated parameters in a logit model requires caution. In fact, parameters of the model only provide information on the positive or negative effect of independent variables on the dependent variable. As for the quantification of the impact of each explanatory variable on an individual's behavior, we proceed by calculating the odds ratios, on one hand, and marginal effects on the other hand.

Functional form of the model is given by Behavior = f (Gender, nature of the post). Where “*Nature of the post*” = (educational, tribalism, religious, societal facts, variety, sexist, insult, unwanted content, funny, visible, intelligible).

5. Results and discussions

The results presented are related to descriptive statistics and those relating to logistic regression.

5.1. Descriptive statistics results

Descriptive statistics are materialized by the size and frequencies of each variable. They are presented in Table 2.

Table 2: Summary of descriptive statistics

Variables	Codes	Size	Percentage
Behavior	Amoral (0)	307	30,7
	Moral (1)	693	69,3
Gender	Female (0)	425	42,5
	Male (1)	575	57,5
Educational	No (0)	823	82,3
	Yes (1)	177	17,7
Tribalist	No (0)	965	96,5
	Yes (1)	35	3,5
Réligious	No (0)	955	95,5
	Yes (1)	45	4,5
Societal facts	No (0)	702	70,2
	Yes (1)	298	29,8
Variety	No (0)	381	38,1
	Yes (1)	619	61,9
Sexist	No (0)	879	87,9
	Yes (1)	121	12,1
Insult	No (0)	863	86,3
	Yes (1)	137	13,7

Unwanted content	No (0)	789	78.9
	Yes (1)	211	21.1
Funny	No (0)	663	66.3
	Yes (1)	337	33.7
Visible	No (0)	434	43.4
	Yes (1)	566	56.6
Intelligible	No (0)	298	29.8
	Yes (1)	702	70.2

(Source: Primary data)

The experimental approach that we conducted on a sample of 1000 posts shows that 69.3% of these refer to moral behavior, against 30.7% for amoral behaviors. That is to say that in the group *Kerel Kongossa!!!!*, it is the moral character of individuals which is highlighted in their publication. However, this observation must be put into perspective. Indeed, man is a moral being only because he lives in society since morality consists of being in solidarity with a group and varies with this solidarity. *Make all social life vanish, and the moral life fainting at the same time, having no object to be taken* (Durkheim, 1893).

With regard to gender, the test sample is dominated by men, with 57.5%. Nevertheless, we note a significant and non-negligible place reserved for women (42.5%). This result could be explained by the problem of women's access to ICT (Joueet, 2003). Thus, despite the development of ICT, women are still marginal, especially in rural areas.

Statistics show that very few posts are educational in the group "kerel kongossa!!!!". Only 17.7% of educational posts are observed. This very interesting result is not really surprising; individuals go on social networks, usually for entertainment and passing time. Rarely, it is a question of educating oneself.

There is a latent rise of tribalism in social networks in Cameroon. The posts related to it, certainly, represents only 3,5% but should draw the attention on drifts that it can cause if the phenomenon came to be generalized. This percentage is relatively low because this type of post is removed by the administrators/moderators within minutes to avoid upsetting the sensitivity of the members of the group. Cameroonians live relatively in harmony. But for some time now, ethnic issues have come to the fore. It has become an open war in social networks between "Bamileke"⁴ and "Bulus"⁵ under the terms of "sadinards" and "tontinards". The proliferation of this phenomenon challenges us about the risks of transposing this tribal divergence into real life.

Religious posts are also very rare. They represent only 4.5%. But the peculiarity of these is that they are the most commented (significant visibility), despite their limited number. Societal facts are poorly represented in the test sample with 29.8%.

A significant portion of posts refers to "Variety" with 61.9%. The varieties generally go in all directions, sometimes in the most unsuspected and surprising fields. Here it can be admired the ingenuity of Cameroonians on subjects as interesting as shameless. This leads most often to sexist conversations (12.1%) specifically relating to discrimination against women; resulting in insults of any kind representing 13.7% of posts. These insults, in connection with the posts tribalism and sexist lead to unwanted content (21.1%) materialized by shocking images, heartbreaking statements, and obscene videos.

As for fun, funny posts are at the rendezvous with 33.7%. Of the 1000 posts recorded, 337 are funny in nature. The majorities of posts are visible and represent 56.6%. This implies that on the sample of 1000, 566 posts have interactivities greater than 100 (comments and likes). The highlight is that 70.2% of posts are

⁴ Origins of the west region of Cameroon

⁵ Origins of the South region of Cameroon

intelligible. This shows that, contrary to what one might think, Cameroonians mostly speak intelligibly on social networks. In the next section, it is a question of evaluating the impact of the various variables mentioned above on the behavior of individuals based on logistic regression.

5.2. Results of logistic regression

The results of logistic regression are presented in table 3 below. Details of these results are presented in appendices.

Table 3: Summary of logistic regression results

Variables	Coefficients	Odds ratio	Marginal effects
Gender	0.0400 (0.196)	1.040 (0.203)	-0.0094 (0.034)
Educational	1.592*** (0.396)	4.912*** (1.946)	0.185*** (0.034)
Tribalist	-0.723 (0.504)	0.485 (0.244)	-0.167 (0.115)
Religious	4.052** (2.003)	57.483** (115.15)	0.232*** (0.0236)
Societal facts	0.993*** (0.241)	2.699*** (0.649)	0.127*** (0.0349)
Variety	-0.0955 (0.189)	0.908 (0.171)	0.0429 (0.0357)
Sexist	-0.105 (0.300)	0.899 (0.270)	-0.0313 (0.0544)
Insult	-1.920*** (0.289)	0.146*** (0.042)	-0.4154*** (0.0662)
Unwanted content	-3.152*** (0.258)	0.042*** (0.011)	-0.648*** (0.0432)
Funny	1.727*** (0.233)	5.621*** (1.308)	0.231*** (0.0321)
Visible	0.821*** (0.198)	2.273*** (0.449)	0.122*** (0.0362)
Intelligible	0.740*** (0.197)	2.093*** (0.413)	0.111*** (0.040)
Observations	1000		
Wald chi2(12)	301.43		
Prob > chi2	0.0000		

(Source: authors' work, from Stata software. *standard errors in parentheses. Significance levels: (***) 1%, (**) 5%, (*) 10%*)

When reading Table 3, one finds that the model is globally significant at 1% (Prob> chi2 = 0.0000). On this basis, the following comments can be made regarding the variables of the model⁶. At the individual

⁶ Comments relate exclusively to the significant variables of the model.

level, out of 12 variables, 7 have a significant impact on the ethical behavior of individuals in the group *kerel kongossa!!!!*.

Educational posts have a positive impact on the ethical behavior of individuals. In terms of odds ratios, there is a 4.912 times more chance that multiplication of educational posts has a positive impact on the behavior of individuals. Thus, regarding marginal effect, an increase in an educational post induces a positive change in (moral) behavior of 0.185 units.

Results obtained for religious posts are even more interesting. These have a positive and significant impact on the ethical behavior of individuals in social networks. With an odds ratio of 57.48, an increase in a religious post contributes to the positive behavioral change of 0.232 units (marginal effect), all things being equal.

Societal facts also have a positive and significant impact on ethical behavior. This is explained by the fact that the majority of societal facts mentioned in this group are of an informative nature (political, economic and socio-cultural news). This corresponds to the odds ratio of 2.69 and a marginal effect of 0.127. This implies that there is 2.69 times more chance that the multiplication of societal facts has a positive impact on the moral behavior of individuals in the group *kerel kongossa!!!!*.

Insults and unwanted content negatively affect ethical behavior. Odds ratios associated with these two variables are relatively low, respectively of the order of 0.146 and 0.042. As for marginal effects, they are rather negative with -0.41 and -0.64; which implies that the increase of a post of nature "insults" and "unwanted content" causes the proliferation of amoral behavior in the group of 0.41 and 0.64 unit respectively. This result reflects the significant extent of insults and unwanted content in the amoral character of individuals in the group *kerel kongossa!!!!*.

Finally, visibility and intelligibility of posts positively affect ethical behavior in practically similar proportions; with odds ratios estimated at 2.27 and 2.09; corresponding to respective marginal effects of the order of 0.122 and 0.111. To evaluate the significance of these results, we perform two robustness tests. The results of these tests are presented in the following subsection.

5.3. Robustness tests

Two robustness tests, including the fit quality test and the Classification test are carried out. The fit quality test is a non-parametric test used to compare the distribution of the observed sample and the distribution of expected probability. Data are grouped into intervals and compared with the number of points expected per interval (Hosmer and Lemeshow, 2000). This test is based on the following assumptions:

- H0: there is no significant difference between observed and expected values
- H1: there is a significant difference between observed and expected values

Thus, for a threshold of significance set at 5%, if the probability of the test is greater than this threshold, we accept the null hypothesis and we conclude that the quality of adjustment is valid. The results of the test are shown in Table 4.

Table 4: Robustness test of Hosmer et Lemeshow (2000)

Logistic model for behavior, goodness-of-fit test (Table collapsed on quantiles of estimated probabilities)	
number of observations =	1000
number of groups =	10
Hosmer-Lemeshow chi2(8) =	5.14
Prob > chi2 =	0.7424

(Source: authors' work, from Stata software)

The Prob> chi2 = 0.7424, which is greater than the threshold of 5% implies the acceptance of the null hypothesis, from which there is no significant difference between values observed and expected. This reflects the robustness of results in the sense of Hosmer and Lemeshow (2000).

Classification, in turn, assesses the predictive accuracy of a logistic regression model. In this table, observed and predicted values are cross-classified. The result of the test is shown in Table 5.

Table 5: Robustness test based on Classification

Logistic model for behavior			
----- True -----			
Classified	D	~D	Total
-----+-----+-----+-----			
+	646	86	732
-	47	221	268
-----+-----+-----+-----			
Total	693	307	1000
Classified + if predicted $\Pr(D) \geq .5$			
True D defined as behavior! = 0			

Sensitivity	$\Pr(+ D)$		93.22%
Specificity	$\Pr(- \sim D)$		71.99%
Positive predictive value	$\Pr(D +)$		88.25%
Negative predictive value	$\Pr(\sim D -)$		82.46%

False + rate for true ~D	$\Pr(+ \sim D)$		28.01%
False - rate for true D	$\Pr(- D)$		6.78%
False + rate for classified +	$\Pr(\sim D +)$		11.75%
False - rate for classified -	$\Pr(D -)$		17.54%

Correctly classified			86.70%

(Source: authors' work, from Stata software)

These results show that the model is correctly specified and predicts 86.70% of observed cases. The two post-estimates tests convoked conclude that the logit model is well specified and that results obtained are robust.

6. Conclusions

The objective of this paper was to assess the determinants of the ethical behavior of individuals through their posts on social networks in Cameroon. To do this, a study on members of a group on Facebook called *Kerel Kongossa !!!!* was conducted during a period of 5 months, from April to August 2019. Based on theoretical work of Shaw (1964) and Ajzen (1991), we identified potential determinants that can be used to assess the behavior of individuals on social networks: the gender of the individual and the nature of the post (educational, tribal, religious, societal facts, variety, sexist, insult, unwanted content, funny, visibility, intelligible). Two main results are derived from our research. On one hand, among selected variables, posts of an educational nature, societal facts, funny, visible and intelligible posts have a positive and significant impact on the ethical behavior of individuals; which shows that these five variables determine the moral behavior of members of the group. On the other hand, insulting posts and unwanted content rather have a negative impact on the ethical behavior of individuals. This shows that these two variables condition the amoral behavior of group members. Based on these results, we make two main recommendations for the

administrators and moderators of this group. The first is the meticulous examination of applications for membership to the group to detect false profiles that are most often than not, vectors of deviant behavior. In the second place, and this in relation to the number of members and the frequency of interactivity in the group, it becomes urgent to increase the number of administrator/moderator to coordinate interactions in the group. There is also the need to redefine the objectives of the group focusing on factors that promote moral behaviors and further educating members on this.

Limits of research

This research was however carried out with some limits. These include the problem of identification. Indeed, it is difficult to have accurate information about individuals through their profiles on social networks because some are false profiles. There is also a proliferation of identity theft, which could cause considerable bias in the process of data collection and analysis. However, these limits do not compromise the relevance of results obtained in this paper because of the number of posts studied, the process of treating information that comes from these posts and the estimation method used.

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Appendices

Result of logistic regression

```
Iteration 0: log likelihood = -693.14718
Iteration 1: log likelihood = -339.0027
Iteration 2: log likelihood = -329.45769
Iteration 3: log likelihood = -328.88359
Iteration 4: log likelihood = -328.85049
Iteration 5: log likelihood = -328.85047
```

```
Logistic regression          Number of obs   =      1000
                             Wald chi2(12)          =      301.43
Log likelihood = -328.85047  Prob > chi2       =      0.0000
```

comportement	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
genre	.0399584	.1958918	0.20	0.838	-.3439825 .4238992
educatif	1.591807	.3961533	4.02	0.000	.8153613 2.368254
tribaliste	-.7232505	.5040481	-1.43	0.151	-1.711167 .2646657
religieux	4.051503	2.003223	2.02	0.043	.1252573 7.977748
faitsdesocit	.9929892	.2405115	4.13	0.000	.5215952 1.464383
divers	-.0955441	.1889011	-0.51	0.613	-.4657834 .2746952
sexiste	-.1054866	.3004105	-0.35	0.725	-.6942804 .4833072
insulte	-1.919873	.2890171	-6.64	0.000	-2.486336 -1.35341
contindesi-e	-3.152165	.2580583	-12.21	0.000	-3.65795 -2.64638
drole	1.726551	.2327349	7.42	0.000	1.270399 2.182703
visibilit	.8212364	.1977153	4.15	0.000	.4337216 1.208751
intelligib-t	.7400368	.1972439	3.75	0.000	.3534459 1.126628

Results of Odds ratio

Iteration 0:	log likelihood = -693.14718					
Iteration 1:	log likelihood = -339.0027					
Iteration 2:	log likelihood = -329.45769					
Iteration 3:	log likelihood = -328.88359					
Iteration 4:	log likelihood = -328.85049					
Iteration 5:	log likelihood = -328.85047					
Logistic regression				Number of obs	=	1000
				Wald chi2(12)	=	301.43
Log likelihood = -328.85047				Prob > chi2	=	0.0000

comportement	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	

genre	1.040767	.2038778	0.20	0.838	.7089414	1.527908
educatif	4.91262	1.946151	4.02	0.000	2.259992	10.67873
tribaliste	.4851726	.2445504	-1.43	0.151	.1806549	1.302995
religieux	57.48377	115.1528	2.02	0.043	1.13344	2915.358
faitsdesocit	2.699291	.6492107	4.13	0.000	1.684713	4.324875
divers	.9088783	.1716881	-0.51	0.613	.6276432	1.316129
sexiste	.8998865	.2703354	-0.35	0.725	.4994337	1.621428
insulte	.1466255	.0423773	-6.64	0.000	.0832143	.2583577
contindesi-e	.0427594	.0110344	-12.21	0.000	.0257853	.0709074
drole	5.621232	1.308257	7.42	0.000	3.562273	8.870249
visibilit	2.273309	.4494679	4.15	0.000	1.542989	3.3493
intelligib-t	2.096013	.4134257	3.75	0.000	1.423966	3.085235

Results of marginal effects

Marginal effects after logit								
y = Pr(comportement) (predict)								
= .79240702								

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X

genre*	-.009492	.03414	-0.28	0.781	-.076397	.057413		.575
educatif*	.1851977	.03448	5.37	0.000	.117612	.252783		.177
tribal-e*	-.1670951	.1159	-1.44	0.149	-.394246	.060056		.035
religi-x*	.2324539	.02368	9.82	0.000	.186048	.27886		.045
faitsd-t*	.1278675	.0349	3.66	0.000	.059472	.196263		.298
divers*	-.0429981	.03578	-1.20	0.229	-.11313	.027134		.619
sexiste*	-.0313563	.05441	-0.58	0.564	-.138005	.075292		.121
insulte*	-.4154744	.06624	-6.27	0.000	-.545307	-.285642		.137
contin-e*	-.6484294	.04327	-14.98	0.000	-.733243	-.563616		.211
drole*	.2315164	.03218	7.19	0.000	.168436	.294597		.337
visibi-t*	.1227707	.03629	3.38	0.001	.051647	.193895		.566
intell-t*	.1113594	.04024	2.77	0.006	.032488	.190231		.702

(*) dy/dx is for discrete change of dummy variable from 0 to 1								