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The Mobile Phone for Algerian Breeders and Veterinarians: Between Evaluation and Improvement of Communication

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Abstract. In Algeria, agriculture contributes about 10% of GDP and employs 10.8% of its labor force. On the other hand, it should be noted that the paradox for Algeria is that 95% of its revenue from hydrocarbons is used to feed the population and thus to consolidate its food security. For all these reasons, Algeria must take into account all aspects relating to the emergence of the agriculture and especially of the livestock sector. It is therefore a question of relaunching this sub-sector of agriculture on technical bases but it is mainly about the introduction of new technologies. Among these technologies, several studies have shown that ICTs, principally mobile phones, are those that can bring a high added value to a sector of activity, both technically and economically."
Indeed, the mobile phone is currently the most accessible tool in time and space to communicate better, like the mass media. We considered that the use of the mobile phone that offers a multitude of functionalities. Our research demonstrated the use of the mobile phone has effectively consolidated the relationship that existed between the breeders and the veterinarians and also, this tool related with economic development.

Keywords: Communication – Transmission – Knowledge - Mobile phone - Breeder - Algeria.

1. Introduction

The mobile phone has become so democratized in the last ten years around the world, to the point of being the subject of many works for most of them on the interest and the importance of its use by the different communities socio-professional. This is why it is used extensively in the field of agriculture and livestock farming in particular.

However, few studies have questioned its use in the context of the protection of animal health and more specifically on the communication of breeders with the first concerned by the health monitoring of livestock.

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The impact of this use by breeders lacking information on the diseases that constantly affect their livestock. The use of the mobile phone would undoubtedly contribute effectively to the growth of the breeding sphere.

In addition, we have the many services offered by mobile, such as SMS, photo and video. This technological tool allows access to the media and social networks. In this way, we are intersted to highlight the contribution that could now bring the mobile phone to farmers.

Our study aspires to demonstrate that the interest of the use of the mobile phone in this sector is today also of economic order before it is of social order; since, on the one hand, its usefulness on the social level has been proven by numerous studies, and on the other hand, in the face of globalization and the opening up of Algeria to international markets.

Although they are closely related, the concepts of communication and information are fundamentally different. In fact, the notion of communication is more complex than that of information. According to (Moussoki J C., 2003) quoting (Sutter E. and Salaun J-M, 1994) « all communication has a cognitive content, more or less important, which is information. This implies that there is no information without communication » [*toute communication a un contenu cognitif, plus ou moins important, qui est l'information. Cela implique qu'il n 'y a pas d'information sans communication]*[1]. Indeed, information is the content of the message, while communication is the process of formatting and distributing the content of the message. Information (from the Latin informare, that is means, to put in shape) is a concept which designates a message, its contents and the useful symbols to write it. (Moch Olivier, 2012) writes that « information is based on codes (alphabet, pictograms, figures ...) and a common semantic field to be apprehended »[*l'information repose sur des codes (alphabet, pictogrammes, chiffres...) et un champ sémantique commun pour être appréhendé*][2].

As for communication, it is a dynamic process, in moving, that is changing the situation. It is based on precise, common codes between the communicator and

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[1] Salaun Jean-Michel. Stratégie marketing des systèmes d'information documentaires. Bibliothèques et centres de documentation. Paris, Ed. ESF, 1994, 221 p. Cited by Moussoki Jean-Claude. Les moyens de communication traditionnels en zone rurale dans l'espace culturel koongo : cas du département du pool. Mémoire D.E.A., université Marien N'gouabi, Brazzaville. Faculté des lettres et sciences humaines, formation doctorale, espaces linguistiques littéraires et culturels (E.L.LI.C.), Option : Identités Culturelles Africaines (I.C.A.), février 2005.

[2] Moch Olivier. *Les bases de la Communication*. *Information et communication*. Janvier 2012 Available on : http://olivier-moch.over-blog.net/article-information-et-communication-96194266.html . Page consulted on 21/09/2016.

its audiences. Evaluating the communication in relation to information, Moussoki J. C. notes that « communication is a process that information is the content; one can not be understood without the other, the study of one and the other is is only one »[*la communication est un processus dont l'information est le contenu; l'une ne peut être comprise sans l'autre, l'étude de l'une et de l'autre ne fait qu'un]*[3]. *«* Whereas (Baticle Yveline-R., 1973) believes that communication « is the sharing of ideas, information or knowledge between two or more people, between two or more human groups »[*est la mise en commun d'idées, des informations ou des connaissances entre deux ou plusieurs personnes, entre deux ou plusieurs groupes humains]*[4].

In summary, among many other proposed definitions we retain, for communication, those of Moch Olivier who notes that « communication is an art, that of formatting and conveying information! »[*la communication est un art, celui de formater et de véhiculer une information!*][5] And for information, that of Moussoki J.C. who writes that « information is the communication of knowledge; it is also the knowledge communicated » [*l''information est la communication de connaissances ; c'est aussi la connaissance communiquée*][6].

Consequently, since our theme focuses on the relationship that, via the mobile phone, two categories of actors involved in a segment considered to be the most important in the agricultural sector, livestock farming is taking place. In this case, we asked if the use of the mobile phone in the relationship between breeders and veterinarians is a way, among many others, that could contribute effectively to the health preservation of the animal resource and the livestock development and for extension the economic growth.

Given that from the social point of view, livestock is known as an area where communication and the need for information have always been intense. So, we

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[3] Moussoki Jean-Claude. *Les moyens de communication traditionnels en zone rurale dans l'espace culturel koongo : cas du département du pool*. Mémoire D.E.A., université Marien N'gouabi, Brazzaville. Faculté des lettres et sciences humaines, formation doctorale, espaces linguistiques littéraires et culturels (E.L.LI.C.), Option : Identités Culturelles Africaines (I.C.A.), février 2005.

[4] Baticle Yveline-R. *Message, média, communication : de Lascaux à l'ordinateur,* Paris, Ed. Magnard, 1973, p. 25., Coll. Information-Communication.

[5] Moch Olivier. *Les bases de la Communication*. *Information et communication*. Janvier 2012 Available on : http://olivier-moch.over-blog.net/article-information-et-communication-96194266.html . Page consulted on 21/09/2016.

[6] Moussoki Jean-Claude. *Les moyens de communication traditionnels en zone rurale dans l'espace culturel koongo : cas du département du pool*. Mémoire D.E.A., université Marien N'gouabi, Brazzaville. Faculté des lettres et sciences humaines, formation doctorale, espaces linguistiques littéraires et culturels (E.L.LI.C.), Option : Identités Culturelles Africaines (I.C.A.), février 2005.

ask for the means and tools of communication that have been used and are really effective?
It is in this sense that we are asking the case of Algeria: " which system that could be the best to answer to the needs of breeders and veterinarians in terms of information and communication ? Is it the mobile phone? "? This seems all the more pragmatic if we take the the findings of Anseur O., who notes that « today, information technologies associated with traditional forms of information transmission could offer adapted responses to information needs of Algerian farmers » [*aujourd'hui, les technologies de l'information associées aux formes traditionnelles de transmission de l'information pourraient offrir des réponses adaptées aux besoins d'information des agriculteurs algériens]*[7].

Our study concerns the central region of Algeria, which includes 09 wilayas : Algiers, Boumerdes, Tipaza, Ain Defla, Blida, Médéa, Bouira, Béjaïa and Tizi Ouzou. These wilayas for cattle and bird breeding are now completely covered by the cellular signal. They are also those that are frequently affected by epizootics[8] in the country during the second half of 2014, or Newcastle disease, which decimated a part of the disease. poultry farms in 2016 and whose central region was the most affected for both diseases. So naturally we will ask the question to know if the use of the mobile phone his really a kind of help for the breeders of the different zones of the central region of Algeria during these episodes? did it facilitate contact with veterinarians?

While we know that veterinary clinics are often located in agglomeration, far from farms that are generally located outside of the urban fabric and for the closest ones in peri-urban areas, can the mobile phone solve the problem of distances that pastoralists face?

2. Method

Of the 335 questionnaires that were sent to the breeders, 303 were selected for the survey ; a rate of 90.44%. It is important to note that of the 303 breeders, 266 have a mobile phone and 37 breeders do not have one. Then, we just take this category.

3. Results and discussion

3.1. Identification of the socio-professional profile of the breeders

3.1.1. Age distribution of the population

[7] Anseur Ouardia. Usages et besoins en information des agriculteurs en Algérie. Thèse de doctorat en Sciences de l'information et de la communication, Univ. Lumière Lyon, 2009.
[8] Serious livestock disease, highly contagious, with significant economic impact and serious production losses.

In his study, which focused on the uses and information needs of farmers in Algeria, (Anseur, O., 2009) notes[9] that the 2001 general agricultural census reveals an aging population of farmers. This has been confirmed by the results of its survey conducted in 2006, "more than a third of farmers surveyed are over 50 years old". A population that, in its sample, also includes the breeders, subjects of our study.

Of the four age groups we have set for breeders, we considered that the age of 45 is the one that separates the first category of young and old from that of the older and older breeders category. As we can see, 51% of breeders are under 45 years of age (13% for under 25s and 38% for 25-45s) compared to 49% who are over 45 (29% for 46-65 year olds). years and 20% for over 65s). However, the two age limits, the results obtained, reveal that the breeders of "over 65" are more representative than those of "under 25" (figure n ° 1).

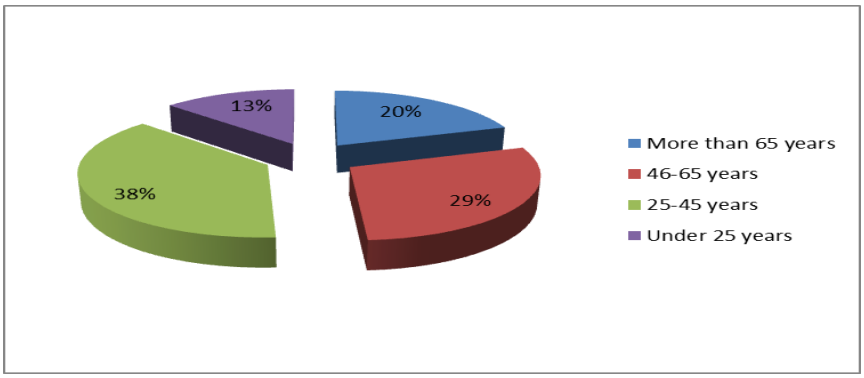

Figure 1: Distribution of breeders by age

3.1.2. Evolution of the profession over time

The analysis of the duration of the occupation of breeder shows that with 30%, the breeders who have between 5 and 20 years of exercise are the most representative. They are followed, to a lesser degree, by breeders who have less than 5 years of exercise and who represent 29% of all breeders. Moreover, the results allow us to note a low rate for the category which capitalizes more than 40 years of exercise which, indeed, only represents 14%. This partly confirms the rejuvenation of the population of breeders. Generally, the operation of adding the obtained rates, allows us to conclude that 59,60% of the farmers have

[9] Anseur Ouardia. Usages et besoins en information des agriculteurs en Algérie. Thèse de doctorat en Sciences de l'information et de la communication, Univ. Lumière Lyon, 2009.

less than 20 years of exercise against 40,60% which capitalize more than 20 years of exercise in the livestock sector (Figure 2).

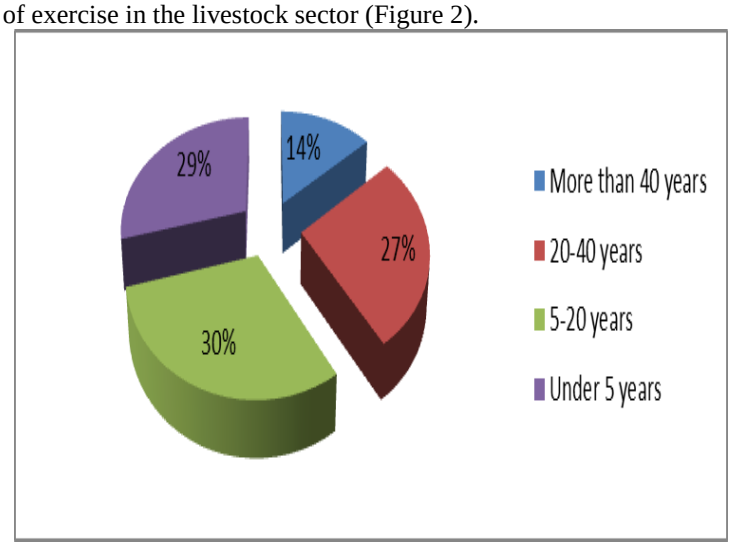

Figure 2: Evolution of the breeder profession by years of practice

We wanted to analyze the variable "age" with "exercise duration of the profession", which led us to note that out of the 29% who represent the breeders having less than 5 years of exercise (75 breeders have an age between 25 and 45 years) while 34 breeders are under 25 years old. This means that a large population of young breeders has recently invested in the livestock sector.

These results seem to us interesting for our study, all over the world, the youth population is the one that uses the most ICTs. It is also the most mobile phone, its various innovations in technology and the various services it offers and that are constantly evolving.

On the other hand, the same cross-analysis shows that with 14%, that is 42 of the breeders, have more than 40 years of exercise are the least representative. Of these 42 breeders, 15 are between 46 and 65 years old and 27 are over 65 years old. These represent the category that has grown with the traditional modes of communication, known in the field of agriculture. From this state of affairs, it is interesting to know to what degree these two generations of farmers adopt the ICTs carried by the mobile phone.

3.1.3. Level of education of breeders

In terms of level of education, the results of this survey reveal that the level of education of pastoralists has improved significantly compared to previous years where the illiteracy rate was high in the breeders' corporation. Indeed, our

results show that 35% of breeders have an average level and 24% have a secondary level (figure n ° 3).
We also obtained satisfactory results regarding the level of education since 8% of breeders have an university level. If we add to these three categories, the 23% obtained for breeders with a primary level, we can conclude that 92% of breeders have a grade level against 9% who have no level of education. We understand that in relation to this percentage, almost the majority of breeders have the ability to communicate and read information transmitted via the mobile phone. Thus, a high rate of breeders master the new features of a mobile phone.

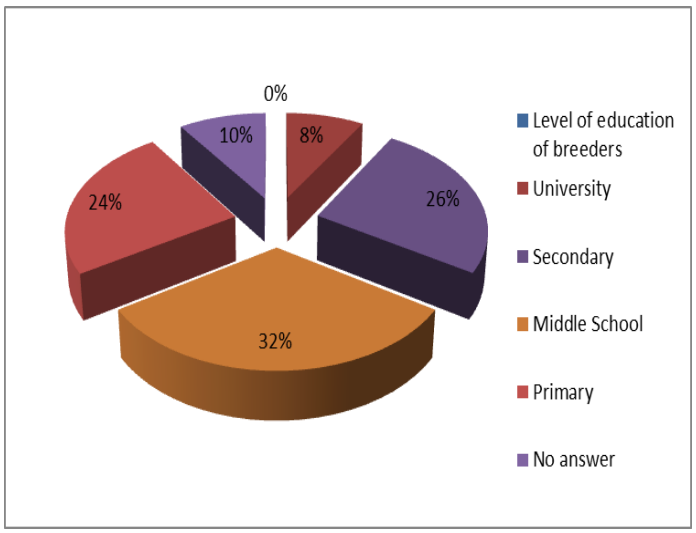

Figure 3: Level of education of breeders

3.2. Mobile phone use by breeders

3.2.1. Disposition of the mobile phone

The objective of this question is to know the rate of breeders who have a mobile phone. Our results clearly show that owning a mobile phone is far from being exceptional for breeders in the central region of Algeria, since 87.78% of breeders in the central region have a mobile phone, it means we obtain 266 breeders out of 303 questioned. Only 12.21% of breeders in the central region do not have a mobile phone, so 37 breeders.

For the 12.211% who do not have a mobile phone, we asked the question of the cause of the non-possession of this tool that seems to be essential today. The frequency distribution for "reason in case of non-availability of the mobile phone" was as follows:

- 27% for the high cost of the subscription and telephone recharge cards.
- 19% for the absence of a network in the region.
- 16% for the landline is enough.
- 13% for very expensive costs of the telephone.
- 11% for not seeing the utility of owning a mobile phone.
- 8% do not know how to handle a mobile phone.

Finally, other reasons were cited as the son use the mobile phone (3%) and the husband's ban (3%). These are obviously women of breeders.

We therefore consider that the level of education has an impact on the possession or not of the mobile phone.

3.2.2. Type of mobile phone use among farmers

Our survey reveals that 44% of breeders surveyed have a conventional mobile phone that we have designated by basic, while 34% of breeders have a Smartphone. An unexpected result for this category of the population. If we add to these, those who have an iPad, iPhone and tablets, the results show that 44% of breeders have a connectable phone device (Figure 4). This result surprised us twice, both in terms of the accuracy of the results and the number of breeders with a phone connected to the different networks and modern applications.

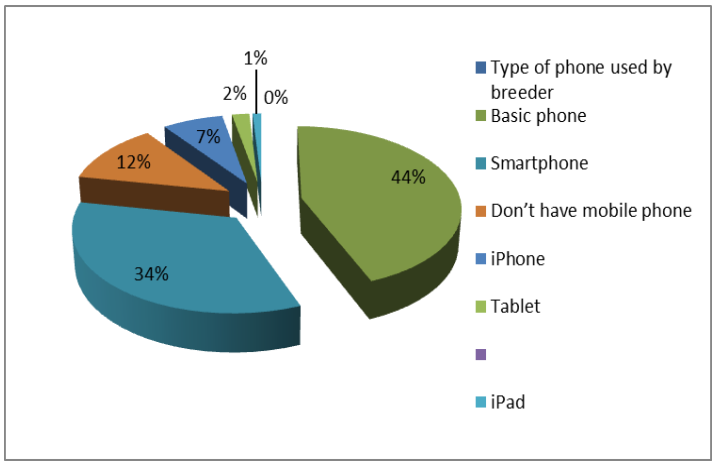

Figure 4: Type of phone used by breeder

Also, contrary to what we believed, these results tell us that breeders are in tune with the development of mobile phone technology and are therefore interested in this communication tool. Is there a new way of communication that is spreading among the population of breeders? In view of the results obtained so far, all argues for this hypothesis.

3.2.3. Internet access-3G by breeders

Gublin.G. G's analysis entitled "Digital Economy: Definition and Impacts" considers that « the use of the internet has allowed the gathering of people and means by dematerializing the physical distance to create, develop and share their ideas giving rise to new concepts, new content and consequently the birth of a new generation of entrepreneurs and markets » [*l'utilisation d'internet a permis le rassemblement des personnes et de moyens en dématérialisant la distance physique pour créer, développer et partager leurs idées donnant lieu à de nouveaux concepts, nouveaux contenus et par conséquence à la naissance d'une nouvelle génération d'entrepreneurs et des marchés]*[10]. Indeed, considering the dimensions "collecting factor" and "physical distance" of the mobile phone, we are interested in the Internet and more precisely in its use by breeders, since the web is now accessible from the mobile phone.

Thus, to the question do you have access to the Internet via 3G, we have nearly 31% of breeders questioned responded positively, or 93 farmers out of 133 farmers equipped with a mobile device connectable to different networks. 57.09% of breeders, 40 breeders, responded negatively.

As a result, we see from these results that 40, who have a mobile device connectable to different networks do not have access to the Internet. This was very obvious to us. Nevertheless, we think that having a connectable device without access to the internet is due either to the breeder himself, as the intellectual level that does not allow him to control the navigation on the net or by simple effect fashion, either to the mobile operator, such as the problem of no network or the high cost of the subscription.

3.2.4. Types of Internet access by breeders

According to the planetoscope website, which provides real-time global statistics, « in 2010, 200,000 SMS would have been sent every second, the huge figure of 6,100 billion sent worldwide in the year » [*en 2010, 200 000 SMS auraient été envoyés chaque seconde, soit le chiffre énorme de 6 100 milliards expédiés dans le monde sur l'année]*[11].

A figure in constant increase, it is noted, it was 2,500 billion SMS in 2008. Moreover, according to the same site, with 144 billion which are exchanged every day in the world, the e-mail was the second most consulted service on the Internet after the consultation of the sites during the year 2013. However, the 4 most visited sites in the world are Google, Facebook, YouTube and Yahoo. So,

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[10] Gublin Gabriela Guerrero. In : BSI Economics. Economie numérique : définition et impacts. 2015.

[11]*Planetoscope*. Available on :http://www.planetoscope.com/Internet-/1024-emails-envoyes-dans-le-monde.html. Page consulted on 21/09/2016.

it is logical that we issued for this question, the choice to breeders between these 03 types of Internet access with the possibility of choosing multiple answers. However, we did not record any questionnaires with more than one answer for this question. Thus, the analysis of the comments made by the breeders interviewed in the survey on the type of Internet access used, highlights a clearly preferential use for social networks such as Facebook and Twitter that we have expressly mentioned, with regard to their popularity in Algeria. In fact, 21.12% of breeders use the internet to access social networks, ie 64 breeders out of 93 who have access to the Internet (figure 5).

In fact, "community" sites allow many people to communicate and exchange information in writing, share photos and / or videos (including sound) wherever they are in a country or in the world. So, regarding the population of breeders who use social networks, both types of use are possible: personal or professional.

As a second response of breeders who use the Internet to access social networks, there are very few those who use search engines when browsing through the Internet, via 3G mobile telephony. They represent 3.40%, so 12 breeders throughout the sample. As for the type of Internet access for email, the rate of 1.98% of breeders, obtained in third position is very low. It represents 6 out of 93 breeders who have access to the Internet.

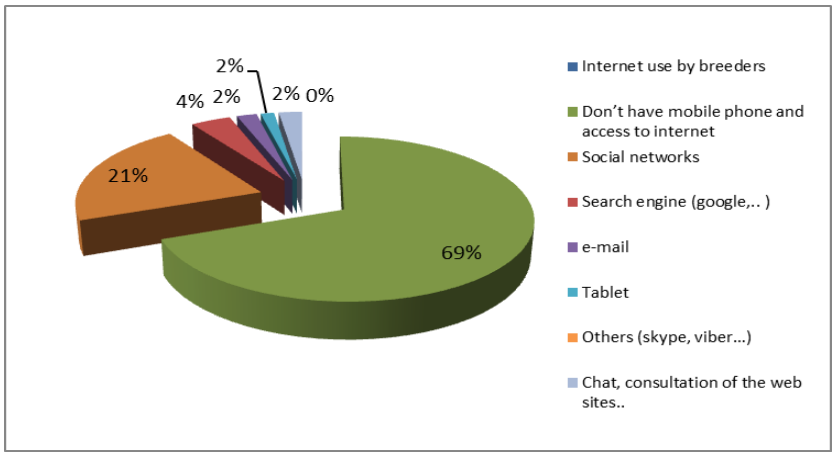

Figure 5: Internet use by breeders

3.3. Contexte of mobile phone use by the farmer

3.3.1. Daily use of the mobile phone for professional

We see from the results that with 46.20%, the majority of farmers use the mobile phone 5 to 10 times a day since 26.40% use it less than 5 times a day and 2.31% only 'use more than 10 times a day (Figure 6). The crossing of the

variable "daily frequency of use of the mobile phone in a professional capacity" with the data "professional of use of the mobile phone" shows that all breeders who use their mobile phone from 5 to more than 10 times per day on do in the professional setting. The crossing with the variable "type of mobile phone used" shows that they all have a device connectable to the Internet (Smartphone, IPhone ...) and whose crossing with the variable "level of education" reveals that 98% have an intellectual level at least average. This means that in addition to the traditional communication specific to breeders, they are also based on the mobile phone either to communicate or to obtain information about their activity. Also note that other crosses show that this slice of breeders is 93% that whose veterinarian's office is located more than 10 km. They relate more to breeders in Region 2 and 3. This leads us to stress that the daily frequency of use of the mobile phone in a professional capacity depends on the location of the cabinet or the office of the veterinarian but also the region where they are located Breeders.

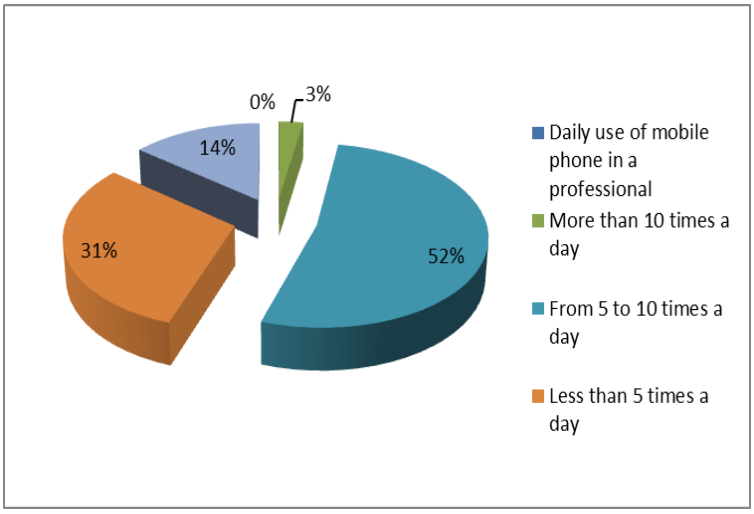

Figure 6: Daily use of mobile phone in a Professional

3.3.2. SMS use in the activity

According to Anseur.O « in interpersonal communication, the essential channels are vision and hearing » [*dans la communication interhumaine, les canaux essentiels sont la vision et l'audition*][12]. Moreover, she notes that « the beginning of civilization coincided with the expansion of an oral civilization, the drawing only appeared afterwards. Then, little by little, writing became a system of visual communication, then ideographic, finally purely symbolic: it is

[12] Anseur Ouardia. Usages et besoins en information des agriculteurs en Algérie. Thèse de doctorat en Sciences de l'information et de la communication, Univ. Lumière Lyon, 2009.

the alphabet » [le début de la civilisation a coïncidé avec l'expansion d'une civilisation orale, le dessin n'est apparu qu'après. Puis, peu à peu, l'écrit s'est imposé comme système de communication visuel, puis idéographique, enfin purement symbolique : c'est l'alphabet][13]. It is with the revolution of Gutenberg, note she « that the universe of the writing has become a system of diffusion » [*que l'univers de l'écrit est devenu un système de diffusion]*[14].

Indeed, since the appearance of the mobile phone, the SMS has continued to be democratized to the point where the communication in writing is confused with its first function, the call of phone in this case. Obviously, we know that it is the young people who are the most intersting to communicate, via SMS. On the other hand, the intellectual level would have a favorable influence on the sending of SMS.

However, is it the same for the agricultural world when one knows that in Algeria, the rate of illiteracy is generally high in this contexte of activity? Has SMS now become a means of communication and the dissemination of information, especially that of a professional nature between breeders? Of course, to answer these questions, we started from the fact that every mobile phone, even the most classic, is equipped today with the SMS service.

The opinions of our respondents regarding the use of SMS show that 56.10% of them use the SMS service, which is just a little more than half of the breeders. This use of SMS is closely linked to their professional activity, as 163 breeders out of 170 who use SMS replied that they use it in a professional capacity. While all mobile phones now have the function (SMS) and are now used for calling and writing, the results reveal that 31.68% of breeders do not use SMS. For this category of breeders, it should be noted that 19.54% are counted among breeders who have no intellectual level and those who have just a primary level. What we consider that the fact of not being able to communicate by SMS is due rather to the level of instruction and illiteracy.

4. Conclusion

This study allowed us to analyze the different modes and types of mobile phone use by breeders in the central region of Algeria. It also allowed us to estimate the impact of mobile phone use, and ICTs in general, on the relationship between the two main actors in the livestock sector. Farmers as direct producers of the resource of this economic sector and veterinarians who are responsible for the health protection and zootechnical improvement of this resource. Indeed, a true communication and information channel, the mobile phone has strengthened the partnership between the two main players in the livestock

[13] Idem.

[14] Idem.

sector. A sector which, as an indication, is prioritized by the State in the economic of Algeria and plays a fundamental role in the consolidation of the food security of the country.

The main purpose of our study is to demonstrate that thanks to its multimedia functionality, the mobile phone is a tool that improves the relationship between these two actors more than any other means or communication tool. Between improving communication, developing the professional relationship and economic growth, the mobile phone is at the heart of our study.

Therefore, by focusing our work on the mobile phone, our goal was to highlight the many advantages offered by this tool, mainly its multifunctionality (SMS, ...) and the Internet services (social networks ...) that were there grafted. Highly technological functions and services that could be put by the breeders in favor of their relations but also for the accomplishment of their successive professional activities, thanks to an optimization of the use of the mobile phone or rather of the smartphone as it is intended, especially since the latter is moving towards an even more pronounced evolution.

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