Author's response to reviews

Title: Drivers of telemedicine use. Comparative evidence from samples of Spanish, Colombian and Bolivian physicians

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Author's response to reviews: see over
Dear Dr. Gregory Aarons
Associate Editor

First of all, on behalf of my co-authors, we would like to express our gratitude for the comments and suggestions made by the reviewers to our paper “Drivers of telemedicine use. Comparative evidence from samples of Spanish, Colombian and Bolivian physicians”. Their contributions, undoubtedly, seem very relevant as they confer greater scientific consistency and expository clarity to the work. Given the reviewers’ comments, we have made modifications providing new data and made, and we feel the paper more suitable for publication.

Thereby, we have incorporated the suggested changes and comments proposed by the reviewers, as well as attending and clarifying the methodological points raised by Dr. Roesch’s.

Finally, we remain at your disposal for any further information you may need.

Yours sincerely,

The authors
REVIEWER: MICHAEL RIGBY

On behalf of my co-authors, we would like to express our gratitude for the comments and suggestions made by the Reviewer 1 to our paper “Drivers of telemedicine use. Comparative evidence from samples of Spanish, Colombian and Bolivian physicians”. His contributions, undoubtedly, seem very relevant as they confer greater scientific consistency and expository clarity to the work. Given the Reviewer 1’ comments, we have made modifications providing new data and made, and we feel the paper more suitable for publication.

1. The first line of the abstract is not relevant, in that telehealth impact is not discussed in the paper. This sentence in this position could mislead potential readers.

The Background sub-section of the Abstract has been modified as a result of Reviewer 1’s comments as follows:

The aim of the study presented in this article is to analyse the determinants of telemedicine use. To that end, the study makes two basic contributions. First, it considers six working hypotheses in the context of technology acceptance models (TAMs). Second, it uses data obtained for three samples of physicians from three different countries (Spain, Colombia and Bolivia). Obtaining and comparing evidence on an international scale represents an important contribution to the literature, in the sense that it will allow the determinants of telemedicine use to be evaluated.

2. At the foot of page 3, the lack of empirical evidence about telehealth impact is correctly raised, but it is not addressed elsewhere. The study does not appear to ascertain if this lack of evidence is a factor in low uptake.

In response to Reviewer 1’s comment, we believe that our approach provides us evidence of the drivers and barriers explaining technology use (or not), and understanding the factors that explain use means that it is possible to influence the outcomes of such use. The results obtained do indeed confirm a certain pattern of behaviour in terms of the drivers that explain telemedicine use. These elements of generalisability have been discussed in sections 5 and 6 (Discussion and Conclusions, respectively). This study helps to fill the gap in the literature.
3. The authors state nothing about the health systems in the three countries, and their degree of development. Unless the three systems are similar, including their level of staffing, and urban / rural divides, then this may also be a determining factor.

The authors assessed the option of providing a detailed description of the healthcare systems in the three countries, but the limitations in terms of the length of the manuscript and the scant value that this information would have provided led us to rule out the idea.

It should be noted that the level of development and specialisation of the public healthcare systems is determined by each country’s level of development. In order to provide some references to the situations of the different healthcare systems, the following paragraphs have been inserted in section 3:

The study compares samples of physicians from different territories with varying levels of development according to the economic indicators provided by the IMF for 2012 and 2014 (1).

A) Spain, a developed country belonging to the European Union, with a GDP of US$1,340.266 billion and GDP per capita of US$30,740 in 2012 according to IMF estimates. According to the official statistics provided by the Spanish Ministry of Health, Social Services and Equality (2), spending on public healthcare, including long-term care, was €58.466 billion. This represents 71.2% of the country’s total healthcare spending, which is €82.064 billion. As a percentage of GDP, total healthcare spending in Spain is 8.4%. According to data provided by the World Bank (World Bank, 2014), the mean annual percentage of GDP spent on healthcare in the 2009-2013 period was 9.3%.

B) Colombia, a developing country with a GDP of US$365.402 billion and a GDP per capita of US$11,284 in 2012. The lack of official statistics for public healthcare spending in Colombia means that we have taken the figures provided by the World Bank as the reference indicator. That institution states that, for the 2009-2013 period, mean healthcare spending as a percentage of GDP was 6.8%. (3)

C) Bolivia, a country with low level of development and a GDP of US$26.749 billion and a GDP per capita of US$4,996 in 2012. (3)
Reference:


2. Ministerio de Sanidad, Servicios Sociales e Igualdad (MSSSI) [http://www.msssi.gob.es/organizacion/sns/docs/gasto08.pdf] [accessed 1 April 2014]


4. We are not shown the questionnaire, how long it was, and whether paper-based, digital, or online.

At Reviewer 1’s request, the three questionnaires used in our research have been translated and are attached to this message.

5. Page 8 states there are three blocks of questions, and lists four blocks.

The change suggested by Reviewer 1 has been made.

6. We are not told the response rates, nor whether the respondents were a representative sample, e.g. by age, gender, type of practice.

In response to Reviewer 1’s comment, it should be noted that the populations (universes) of professionals working for the healthcare organisations taking part in the study were 356 physicians in Spain, 184 physicians in Colombia and 350 physicians in Bolivia. The samples obtained were 113 physicians from Spain, 118 physicians from Colombia and 279 physicians from Bolivia, with response rates of 31.7%, 64.1% and 79.7%, respectively. At Reviewer 1’s request, Table 4. Descriptive analysis of the physicians’ characteristics has been inserted in the manuscript. It provides descriptive information about the study’s three samples and complements the information provided in 4.1. Physician’s profile.

7. Are the specialties of the doctors in the three countries similar? There is much more relevance to telemedicine in some specialties than others.

Given the aim of the study (to analyse the determinants of telemedicine use) and how it is approached (from six working hypotheses in the context of technology acceptance
models (TAMs)), it was necessary to analyse the profile of the physicians, and the three institutions selected for the study were representative of that profile. The study uses data obtained for three samples of physicians from healthcare systems in three different countries with varying levels of developments (Spain, Colombia and Bolivia). The expectation is that the differences in terms of telemedicine knowledge and use are due to factors like a country’s economic development (which determines the level of resources and equipment that they have available to them, and even the level of training that healthcare staff have), and sociodemographics, indicated in sub-section 4.1. and shown in Table 4 (which has been inserted for the purposes of summarising and simplifying the information contained in sub-section 4.1.).

### Table 4. Descriptive analysis of the physicians’ characteristics

<table>
<thead>
<tr>
<th></th>
<th>SPAIN</th>
<th>COLOMBIA</th>
<th>BOLIVIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>67.3</td>
<td>60.2</td>
<td>40.5</td>
</tr>
<tr>
<td>Female</td>
<td>32.7</td>
<td>39.8</td>
<td>59.5</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;40 years</td>
<td>14.2</td>
<td>59.0</td>
<td>50.6</td>
</tr>
<tr>
<td>40-50 years</td>
<td>30.1</td>
<td>27.3</td>
<td>33.3</td>
</tr>
<tr>
<td>50-60 years</td>
<td>46.0</td>
<td>8.6</td>
<td>12.9</td>
</tr>
<tr>
<td>&gt;60 years</td>
<td>9.7</td>
<td>5.1</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Workplace</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare centre’s central services</td>
<td>8.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research centre</td>
<td>0.9</td>
<td>23.7</td>
<td></td>
</tr>
<tr>
<td>University</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary care hospital</td>
<td>46.9</td>
<td>37.3</td>
<td>13.3</td>
</tr>
<tr>
<td>Secondary care hospital</td>
<td>8.0</td>
<td>13.7</td>
<td>56.6</td>
</tr>
<tr>
<td>Healthcare centre</td>
<td>35.8</td>
<td>31.3</td>
<td>30.1</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative post</td>
<td>18.5</td>
<td>26.2</td>
<td>8.9</td>
</tr>
<tr>
<td>Non-administrative post</td>
<td>81.4</td>
<td>73.7</td>
<td>91.0</td>
</tr>
</tbody>
</table>

8. We do not know how Optimism, and other key attributes analysed, were measured.

As indicated in sub-section 3.3., the data relating to the different variables used in the analysis were obtained from a questionnaire that was answered by three samples of healthcare professionals from three different countries.

The data relating to the variables analysed was directly collected using the questionnaire. To a large extent, this means that the variables were considered unidimensional. However, the multidimensional nature of the variables Perceived usefulness of ICTs in clinical practice and Optimism suggested that exploratory factor analysis (EFA) should be performed to calculate them. Works like the one by Fabrigar et al. (1999) recommend the use of this technique as it enables data dimensionality to
be reduced. Starting with the analysis of a set of original variables, it seeks to determine the smallest number of dimensions capable of explaining the maximum amount of information contained in the data (Fabrigar et al., 1999).

Reference:
Fabrigar LR, Wegener DT, McCullum RC, Strahan E: Evaluating the use of exploratory factor analysis in psychological research Psychol Methods 1999, 4:272-299

9. In the consideration of Preliminary Evidence, as we do not know the nature and state of development of the health system in each country, we do not know whether factors such as physician shortage or rural isolation were significant when compared with Spain.

In response to Reviewer 1’s comment, we have introduced a more comprehensive description and also introduced a new reference with more complete information about the state of development of the health system in each country (already stated in response to question 3). (See section 3).

10. It would have been good to obtain respondents' views as to enabling factors and blocking factors to telemedicine use.

The questionnaire contained a final open question so that respondents could make any comments about their experience as telemedicine users. It should be noted that some of the comments highlighted the respondents’ opinions of factors that block or enable telemedicine use. However, the percentage of respondents who answered the question was relatively low. Thus, the lack of representativeness of their answers together with the considerable diversity of the answers given and the difficulties involved in their subsequent coding meant that the analysis of this information was ruled out.

Nevertheless, it should be noted here that most of the respondents’ comments support the conclusions drawn from this study. This was considered a preliminary (non-formal) confirmation of some of the proposed hypotheses.
11. Given the three members of CICUS, an explanation of why Colombia rather than Ecuador was chosen as the third country in the study would be helpful.

In response to Reviewer 1’s question, it should be noted that the project began in 2010 with the participation of the Open University of Catalonia (UOC, Spain), Simón Bolívar Andean University (UASB, Bolivia) and the Central University of Ecuador (UCE, Ecuador). In early 2011, the UCE replaced its academic vice-rector for Research, and this made it difficult to attain the objectives initially set in this project (and, for the case in hand, the data obtained were not representative enough). A decision was therefore taken not to include the research conducted in Ecuador in this study, and instead to include different countries given that the possibility of comparing evidence of social uses in the explanation of telemedicine use on an international scale was an opportunity to contribute to the literature. Taking advantage of the network of contacts that the Open University of Catalonia’s (UOC’s) Health Science Studies has in order to conduct research into Telemedicine, the Canary Islands Health Service (SCS) and the Society of Surgery Service, San José Hospital of Bogotá, Colombia, were included in the study. It was therefore possible to compare evidence from the samples of physicians from three countries with varying levels of development.

Finally, we remain at your disposal for any further information you may need.

Yours sincerely,

The authors
REVIEWER: ANNE G. EKELAND

On behalf of my co-authors, we would like to express our gratitude for the comments and suggestions made by the Reviewer 2 to our paper “Drivers of telemedicine use. Comparative evidence from samples of Spanish, Colombian and Bolivian physicians”. Her contributions, undoubtedly, seem very relevant as they confer greater scientific consistency and expository clarity to the work. Given the Reviewer 2’ comments, we have made modifications providing new data and made, and we feel the paper more suitable for publication.

1. Make the object of study (systems or countries?) clear

The study uses data obtained for three samples of physicians from three different countries (Spain, Colombia and Bolivia). While the samples are not representative of either the healthcare systems or the healthcare professionals in the countries in question, the study presented in the article provides new comparative evidence as a result of performing a cross-sample analysis. Indeed, one of the main contributions of this study is the comparative analysis of the three samples of healthcare professionals working in different countries, as is the identification of a pattern of behaviour in terms of the drivers that explain telemedicine use.

In order to better clarify the object of study, any reference to healthcare systems or country has been replaced by ‘samples of physicians from three different countries’ or similar wording.

2. Inform about and substantiate use and differences between the systems or countries

The authors assessed the option of providing a detailed description of the healthcare systems in the three countries, but the limitations in terms of the length of the manuscript and the scant value that this information would have provided led us to rule out the idea.

It should be noted that the level of development and specialisation of the public healthcare systems is determined by each country’s level of development. In order to provide some references to the situations of the different healthcare systems, the following paragraphs have been inserted in section 3:
The study compares samples of physicians from different territories with varying levels of development according to the economic indicators provided by the IMF for 2012 and 2014 (1).

A) Spain, a developed country belonging to the European Union, with a GDP of US$1,340.266 billion and GDP per capita of US$30,740 in 2012 according to IMF estimates. According to the official statistics provided by the Spanish Ministry of Health, Social Services and Equality (2), spending on public healthcare, including long-term care, was €58.466 billion. This represents 71.2% of the country’s total healthcare spending, which is €82.064 billion. As a percentage of GDP, total healthcare spending in Spain is 8.4%. According to data provided by the World Bank (World Bank, 2014), the mean annual percentage of GDP spent on healthcare in the 2009-2013 period was 9.3%.

B) Colombia, a developing country with a GDP of US$365.402 billion and a GDP per capita of US$11,284 in 2012. The lack of official statistics for public healthcare spending in Colombia means that we have taken the figures provided by the World Bank as the reference indicator. That institution states that, for the 2009-2013 period, mean healthcare spending as a percentage of GDP was 6.8%. (3)

C) Bolivia, a country with low level of development and a GDP of US$26.749 billion and a GDP per capita of US$4,996 in 2012. (3)

Reference
2. Ministerio de Sanidad, Servicios Sociales e Igualdad (MSSSI) [http://www.msssi.gob.es/organizacion/sns/docs/gasto08.pdf] [accessed 1 April 2014]

3. Provide your sample selection criteria
Within the context of research into Telemedicine as part of the Open University of Catalonia’s (UOC’s) Health Science Studies, the authors had access to several groups of healthcare professionals. As indicated in Table 1, the questionnaire was sent to the
populations (universes) of professionals working for the healthcare organisations taking part in the study (356 physicians in Spain, 184 physicians in Colombia and 350 physicians in Bolivia). The samples obtained were 113 physicians from Spain, 118 physicians from Colombia and 279 physicians from Bolivia, with margins of error (maximum indetermination p=q=95%) of + 7.6% for Spain, + 5.4% for Colombia, and + 2.7% for Bolivia. In accordance with Reviewer 2’s suggestion, we have introduced a more comprehensive description of our sample selection criteria (see page 20).

4. Provide the data collection methods

Again, in accordance with Reviewer 2’s suggestion, in order to better clarify the data collection criteria, sub-section 3.2. has been changed and now reads as follows:

Both the research methodology and the tool designed in the CICUS project were used to conduct this study. Besides the UOC’s Faculty of Health Sciences and the UASB’s Health Area, two new organisations took part in it: (1) the Canary Islands Health Service (SCS); and (2) the Society of Surgery Service, San José Hospital of Bogotá, Colombia.

In Bolivia, the study was conducted in hospitals and healthcare centres of the urban and rural districts of the municipality of Sucre. It had 115 healthcare establishments (87% primary care, 8% secondary care and 5% tertiary care), where a total of 350 physicians practised. The healthcare professionals were contacted in person between August and September 2011. After explaining the reasons for and aim of the study to them, they were asked to collaborate by answering the survey, which they had to complete by hand. All the healthcare professionals freely agreed to collaborate in the research. Data collection was concluded in mid September, with a total of 279 completed surveys. The survey data were then entered manually into electronic database for exploitation. This was done through the collaboration of postgraduate students on the master’s degree programmes in Public Health and in Clinical Pharmacology offered by UASB’s Health Area.

In Spain, the study population consisted of medical professionals of all profiles affiliated to the field of healthcare within the SCS, comprising a total of 356 physicians across healthcare centres, secondary care hospitals and research centres/universities, who received an invitation to take part in the SCS online survey by e-mail. The fieldwork was carried out between 31 January and 28 June 2012, with a total of 113 completed surveys.
Finally, the Society of Surgery Service at San José Hospital of Bogotá had a staff of 184 physicians, who attended to an average of 161,000 patients per year in outpatient services. On 13 February 2012, the medical director of the Society of Surgery Service, San José Hospital of Bogotá, sent an invitation to take part in the online survey by e-mail to the 184 healthcare professionals. The fieldwork was carried out between 13 February and 30 April 2012, with a total of 118 completed survey. No mechanism to incentivise the healthcare professionals' participation was implemented in any of the three cases.

5. Discuss generalizability questions

Although the study uses different samples, the results obtained do indeed confirm a certain pattern of behaviour in terms of the drivers that explain telemedicine use. These elements of generalisability have been discussed in sections 5 and 6 (Discussion and Conclusions, respectively).

Minor Essential Revisions

Some claims need to be substantiated by References, see attached report

In accordance with Reviewer 2’s suggestion, two new references have been included, both of which deal with the models considered. These are:


1. IS THE QUESTION POSED BY THE AUTHORS NEW AND WELL DEFINED?

The introduction and background I find somewhat confusing. Please clarify: is it the drivers of use or is it the effects of use on health outcomes that are addressed? In the abstract it says: in order to understand effects, in the introduction the drivers are focused.

The aim of the study presented in the article is to analyse the determinants of telemedicine use. The study therefore falls within the sphere of ex-ante analysis; in other words, to identify the drivers of telemedicine use. In accordance with Reviewer
2’s comments, the article has been revised and references to ex-post analysis (i.e., the outcomes of telemedicine use) have been removed.

There is no introduction to how and how much ICTs are used in the different countries or healthcare settings.

In accordance with Reviewer 2’s suggestion, we have introduced a new reference with more complete information about how and how much Telemedicine is used in Latin America:


On the other hand, in developing countries, as Bolivia, studies that deal with how and how much ICT are used in healthcare settings are relatively rare. This study helps to fill the gap in the literature.

Reference:

Rigby M: Impact of telemedicine must be defined in developing countries BMJ. Jan 5, 2002; 324(7328): 47.

Please clarify: is it a comparison between three countries or three healthcare settings? In any case some characteristics of the differences need to be documented. In addition we know nothing about physicians’ use of telemedicine in the different settings or countries from the paper, ref Introduction para 4.

The study uses data obtained for three samples of physicians from three different countries (Spain, Colombia and Bolivia). While the samples are not representative of either the healthcare systems or the healthcare professionals in the countries in question, the study presented in the article provides new comparative evidence as a result of performing a cross-sample analysis. Indeed, one of the main contributions of this study is the comparative analysis of the three samples of healthcare professionals working in different countries, as is the identification of a pattern of behaviour in terms of the drivers that explain telemedicine use. In order to better clarify the object of study, any reference to healthcare systems or country has been replaced by ‘samples of physicians from three different countries’ or similar wording.
Finally, in order to better contextualise our study in relation to telemedicine use, the paragraph and references listed in the reply above have been inserted in the Introduction section, at the end of the first paragraph.

**Introduction, paragraph 4: The intention is to attain a two fold objective. I can read a threefold objective. Please clarify.**

In accordance with Reviewer 2’s suggestion, we have introduced a more comprehensive description the aim of the presented in this article and now reads as follows:

*In this context, this study analyses and compares the determinants of telemedicine use by samples of physicians from three countries. By doing so, the intention is to attain a two-fold objective. Firstly, to characterise and develop a typology of physicians according to their ICT use and expectations in their clinical practice and their personal lives. And secondly, to identify the determinants that foster or hinder the physicians’ telemedicine use. In order to attain the latter part of the objective, we will perform a comparative analysis of three samples of physicians from three Ibero-American countries (Spain, Colombia and Bolivia).*

**Please explain: Why is it important to understand factors explaining use in order to understand the effects of use?**

Research into the social uses of technology usually distinguishes between the analysis of the determinants of use, i.e., the factors explaining users’ technology use (ex-ante research) and the analysis of the outcomes of use (ex-post). While most studies have focused on the outcomes of technology use, it should be noted that ex-ante analysis is important for several reasons. First, because it provides evidence of the drivers and barriers explaining technology use (or not). Second, because understanding the factors that explain use means that it is possible to influence the outcomes of such use. For example, and in the case of telemedicine, in our study we have found that certain elements that are not strictly technological are important to explaining telemedicine use. Thus, in order to foster the economic outcomes (efficiency) or social outcomes (effectiveness, wellbeing, etc.) of telemedicine use, such non-technological elements explaining its use should also be considered. Finally, obtaining and comparing evidence on an international scale represents an important contribution to the literature, in the sense that it will allow the determinants of telemedicine use to be evaluated, and the common and distinct aspects of its use in countries with varying levels of development...
to be identified. Again, in accordance with Reviewer 2’s suggestion, we have introduced a more comprehensive description of why it is important to understand factors explaining use in order to understand the effects of use (see first paragraph of the Discussion section, page 19).

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

Hypothesis and model section

In paragraph one the additional models are presented. Please add references to the TRA and TBP models.

Two new references have been included, both of which deal with the models considered. These are:


Data collection, empirical methodology and validation

3.1. Section, paras 3 and 4: Please describe the qualitative methodology and make clear the connection between the qualitative questionnaire/survey and the measurement instrument. How do qualitative information and metrics combine?

As indicated in sub-section 3.1., the data were obtained from a questionnaire that was validated within the framework of an international project: The Ibero-American Cluster for University Collaboration on Health (CICUS, reference C/030942/10), an international scientific cooperation project led by the Open University of Catalonia (UOC) in accordance with the criteria set out in the Scientific Research and Inter-University Cooperation Programme (PCI) between Spain and Latin America, funded in full by the Spanish Agency for International Development Cooperation (AECID).

The project began in 2010 with the participation of the UOC (Spain), Simón Bolívar Andean University (UASB, Bolivia) and the Central University of Ecuador (UCE, Ecuador). A qualitative methodology was chosen, and a questionnaire was designed as the data collection instrument. A review of the literature together with the experience of
the healthcare professionals in each country served as the basis to create the study variables and the metrics used in the first version of the instrument. The final questionnaire was organised into four blocks of questions: (a) Sociodemographic and professional background; (b) Opinions about ICT and Internet use in the field of healthcare; (c) Degree of ICT and Internet use in general; and (d) Degree of IT-system, ICT and Internet use at work. The instrument was validated following a pre-test. This was done through a pilot experience, applying the questionnaire to 48 postgraduate students (all healthcare professionals) on the master’s degree programmes in Public Health and in Clinical Pharmacology offered by UASB’s Health Area. The experience in question took place across two months during the academic year (from 10 May 2011 to 15 June 2011). The instrument was tested and modified in accordance with the suggestions made by the respondents.

The same questionnaire was used for all three samples, thus ensuring that the variables measured and the metrics used were exactly the same. A preliminary questionnaire was sent for revision to the other two organisations participating in our study (the Canary Islands Health Service (SCS) and the Society of Surgery Service, San José Hospital of Bogotá, Colombia). The purpose of this stage was to finalise the drafting, content and general design of the questionnaire, and to test both the instrument and its suitability to the contextual characteristics of each country. So, between 9 and 27 January 2012, the questionnaire was sent for revision and adaptation to several healthcare professionals with academic and practical experience of information systems at the Canary Islands Health Service (SCS). And a similar experience was implemented in Colombia between 23 January and 7 February 2012. After the instrument and had been tested and modified in accordance with the respective experts’ suggestions, we proceeded with the study in the three samples of physicians from the three countries in question. After the questionnaire had been sent to and completed by the three samples of physicians, the data contained in them were coded. They were then statistically processed, as described in sub-section 3.3. Study variables.

In accordance with Reviewer 2’s suggestion, we have introduced a more comprehensive description of the qualitative methodology (see section 3.1 Instrument design: the CICUS project, page 8, 9 and 10).

3.2. Please inform the reader about your selection criteria. Why were the countries and health care systems chosen?

Along similar lines to the response to comment 3 above, within the context of research into Telemedicine as part of the UOC’s Health Science Studies, the authors had access
to several groups of healthcare professionals. As indicated in **Table 1**, the questionnaire was sent to the populations (universes) of professionals working for the healthcare organisations taking part in the study (356 physicians in Spain, 184 physicians in Colombia and 350 physicians in Bolivia). The samples obtained were 113 physicians from Spain, 118 physicians from Colombia and 279 physicians from Bolivia, with margins of error (maximum indetermination p=q=95%) of + 7.6% for Spain, + 5.4% for Colombia, and + 2.7% for Bolivia. We have introduced a more comprehensive description of our sample selection criteria (see page 20).

We get to know something about the collaborative project, but in order to provide scientific knowledge, some justification about selection is important.

The project began in 2010 with the participation of the Open University of Catalonia (UOC, Spain), Simón Bolívar Andean University (UASB, Bolivia) and the Central University of Ecuador (UCE, Ecuador). In early 2011, the UCE replaced its academic vice-rector for Research, and this made it difficult to attain the objectives initially set in this project. Given that the possibility of comparing evidence of social uses in the explanation of telemedicine use on an international scale was an opportunity to contribute to the literature, a decision was taken to include samples of physicians from two other countries. The Canary Islands Health Service (SCS) and the Society of Surgery Service, San José Hospital of Bogotá, Colombia, were included in the study, taking advantage of the network of contacts that the Open University of Catalonia’s (UOC’s) Health Science Studies has in order to conduct research into Telemedicine.

### 3.3. Para one: Please provide references to KMO test and Bartlett’s sphericity test

Sub-section **3.3.** has been revised in order to clarify the utility of the KMO test with Bartlett’s test of sphericity. The works of Bilodeau and Brenner, (1999), Fabrigar et al. (1999), and Nunnally and Bernstein (1994) have been used to support the section revision.

The following paragraphs have therefore been added:

*In order to confirm the technique’s goodness-of-fit for the three samples, various statistical tests were performed in accordance with the proposals by Bilodeau and Brenner (1999), Fabrigar et al., (1999), and Nunnally and Bernstein (1994). The analysis of the sample correlation matrix for the three*
analyses performed showed that the variables were highly intercorrelated. In every case, the correlation coefficient values were higher than 0.5. Likewise, the Bartlett's test of sphericity values were high (59.407 for the sample of Spanish physicians, 65.864 for the sample of Colombian physicians, and 144.915 for the sample of Bolivian physicians). This indicated that the null hypothesis of multivariate normality was rejected in every case, thus confirming that the variables were highly interrelated. Furthermore, in every analysis, these results had significant Chi-square values (at the 99% confidence level) and low correlation matrix determinant values (0.582, 0.564 and 0.59 for the samples of Spanish, Colombian and Bolivian physicians, respectively). This confirms that the variables considered in the different studies were intercorrelated, and could be expressed as a linear combination of other variables.

In addition, the statistical technique’s goodness-of-fit was established for each of the samples analysed. In order to do so, the existence – or not – of a high number of partial correlation coefficients other than zero was checked using the Kaiser-Meyer-Olkin (KMO) coefficient. It should be noted that the KMO index is used to compare the magnitudes of partial correlation coefficients; the lower its value is, the higher the partial correlation coefficients’ values are, and consequently the less appropriate it is to perform EFA (Bilodeau and Brenner, 1999). According to the proposal made by those authors, coefficient values equal to or higher than 0.5 are acceptable. As shown in Table 3, the values obtained for the samples of Spanish, Colombian and Bolivian physicians were 0.581, 0.615 and 0.669, respectively. The technique’s goodness-of-fit was therefore confirmed for the analyses performed on the three samples.

Reference:


Fabrigar LR, Wegener DT, McCullum RC, Strahan E: *Evaluating the use of exploratory factor analysis in psychological research* Psychol Methods 1999, 4:272-299


3. Are the data sound and well controlled?
Considering the limitations of no account of selection criteria, the data seem well controlled

The study uses data obtained for three samples of physicians from three different countries (Spain, Colombia and Bolivia). While the samples are not representative of either the healthcare systems or the physicians in the countries in question, the study presented in the article provides new comparative evidence as a result of performing a cross-sample analysis.

As indicated in Table 1, the samples obtained were 113 physicians from Spain, 118 physicians from Colombia and 279 physicians from Bolivia, with margins of error (maximum indetermination $p=q=95\%$) of $+7.6\%$ for Spain, $+5.4\%$ for Colombia, and $+2.7\%$ for Bolivia.

Finally, given the aim of the study (to analyse the determinants of telemedicine use) and how it is approached (from six working hypotheses in the context of technology acceptance models (TAMs)), it was necessary to analyse the profile of the physicians, and the three institutions selected for the study were representative of that profile.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

The reporting of data and account of different analyses are technically adhering to relevant standards.

As shown in sub-section 3.3., various statistical tests were done to gauge the goodness-of-fit of the range of techniques used. In this respect, in order to confirm the goodness-of-fit of the exploratory factor analysis in the three samples analysed, a sample correlation matrix analysis was performed and Bartlett’s test of sphericity values were calculated. In addition, the existence of partial correlation coefficients other than zero was checked using the Kaiser-Meyer-Olkin (KMO) coefficient.

Furthermore, the reliability of scales of the factors obtained from the factor analysis was calculated using Cronbach’s alpha coefficient. Likewise, the distribution of the analysed variables was analysed using the Kolmogorov-Smirnov test.

Finally, in order to calculate the goodness-of-fit of the binary logistic regression analysis, the Chi-square statistic was calculated and the Hosmer-Lemeshow test was applied.
5. Are the discussion and conclusions well balanced and adequately supported by the data?

I question the conclusion about telemedicine use in the countries Colombia and Bolivia in para 5 of the discussion section. Please consider limitations in your sample, and generalizability.

In accordance with Reviewer 2’s comment, we have inserted the following paragraph at the end of the Discussion section:

The study presented in this article has several limitations, particularly the empirical approach taken, the lack of a time series, and the variables and restrictions imposed on the analysis. However, the availability of three samples of physicians from three different countries (Spain, Colombia and Bolivia) was an excellent opportunity to analyse the determinants of telemedicine use. In this respect, and bearing in mind the importance of this type of analysis to healthcare organisations, the availability of (a) more data on other groups of physicians to widen the comparison, (b) a time series, (c) better indicators, and (d) new analyses relating the determinants of telemedicine use to its outcomes would suggest that new approaches could be taken. In addition, the study’s sample limitations are of particular note. Although the comparison made is relevant, increasing the number of observations to improve the representativeness of the samples, for both the set of physicians and for the healthcare systems, will be a future line of study in our research programme.

Para 6 of the discussion section introduces a number of factors accounting for the ‘notorious inequalities in the field of health’. Please provide some references to substantiate these claims.

In accordance with Reviewer 2’s suggestion, a new reference have been provided to substantiate the factors accounting for the ‘notorious inequality in the field of health”:


Conclusion section Para one:

· A co-variation between physician use and telemedicine use has been identified across different samples. What kind of explanation is this?
The co-variation between the physicians’ ICT use and telemedicine use is explained in detail in section 2. Hypothesis and model, and configures one of the study’s hypotheses. This working hypothesis proposes that the physicians’ general ICT use would favour the intention to use telemedicine, in the sense that they would have the necessary skills, competencies and culture to transfer their general uses to the field of telemedicine. In this respect, it is proposed that the more general uses of ICTs there are, the greater the physicians’ predisposition to use telemedicine will be.

· You claim that your findings suggest that lack of human resources, infrastructure, equipment, medication, and cultural and geographical accessibility account for differences in use. Why are these factors not included in your hypotheses?

The factors mentioned by Reviewer 2 are not directly considered in the hypotheses proposed in our study, as the potential for the characteristics of the institutions or organisations where the technology is used to affect the individual’s intention to use it is not contemplated in the TAM. However, they are considered indirectly by establishing the last hypothesis (H6), where a comparison between three countries with different socioeconomic and demographic conditions is explicitly made; the expectation is that these conditions will have an impact on the physicians’ level of telemedicine acceptance.

Para two:

· What do you mean by local factors accounting for barriers?

Besides the considerable value that the variable physician’s Level of ICT use – as an individual, in his or her personal life – has in the explanatory power on Telemedicine use, our findings suggest that Telemedicine use can also be determined by other factors of healthcare services (such as the lack of human resources, infrastructure, equipment, medication, and cultural and geographical accessibility) and the level of ICT implementation in the field of healthcare, conferring different models in the explanation of its use. We understand that the level of development and specialisation of the public healthcare systems is determined by each country’s level of development. However, it is reasonable to assume that these other factors of healthcare services may also be due to local factors besides the overall development of a country’s infrastructure, transferring the observation to a more micro level (institutional), given that, in short, institutions are the ones that end up setting the level and pace of real ICT
implementation. Hence, as we have suggested in our study, the importance of conducting studies prior to using telemedicine, and attempting to identify which of the variables mentioned in it are exerting an influence and how.

· There is some confusion in the conclusion. You state that infrastructure is an important (structural?) determinant (para 1) and in para 2 local factors (such as?) are being considered as more important to explain barriers. What do you consider as local and more overarching factors? How do you distinguish them?

By local factors we are referring to those aspects related to the economic and social idiosyncrasies of the territory, which could either foster or impede telemedicine use. Although the set of factors is broad, those that are of particular relevance to our study are healthcare professionals’ training and learning in the field of ICT use, innovation culture and institutional dynamics oriented towards decision-making autonomy and decentralisation, and organisational change. Empirical evidence in the sphere of social research shows that the establishment of relationships of complementarity between the intention to use ICTs, professionals’ lifelong learning and organisational change usually explains technology use.

6. Do the title and abstract accurately convey what has been found?

Abstract: Please clarify whether it is effects or determinants of use that is the focus of the paper, or explain how they relate. The title is clear, but the content of the paper does not specify the samples actually selected.

The aim of the study presented in the article is to analyse the determinants of telemedicine use. To that end, the study makes two basic contributions. First, it considers six working hypotheses in the context of technology acceptance models (TAMs), which social research has frequently used to capture the determinants of technology use in different types of organisation. Our intention was to use this conceptual framework of reference in our study of the determinants of telemedicine use. The Background sub-section of the Abstract has been modified as a result of Reviewer 2’s comments as follows:

*The aim of the study presented in this article is to analyse the determinants of telemedicine use. To that end, the study makes two basic contributions. First, it considers six working hypotheses in the context of technology acceptance...*
models (TAMs). Second, it uses data obtained for three samples of physicians from three different countries (Spain, Colombia and Bolivia). Obtaining and comparing evidence on an international scale represents an important contribution to the literature, in the sense that it will allow the determinants of telemedicine use to be evaluated.

Finally, bearing in mind the objectives set, we believe that the title accurately conveys the purpose of the study.

We remain at your disposal for any further information you may need.

Yours sincerely,

The authors
REVIEWER: ALBERT ALONSO

On behalf of my co-authors, we would like to express our gratitude for the comments and suggestions made by the Reviewer 3 to our paper “Drivers of telemedicine use. Comparative evidence from samples of Spanish, Colombian and Bolivian physicians”. His contributions, undoubtedly, seem very relevant as they confer greater scientific consistency and expository clarity to the work. Given the Reviewer 3’ comments, we have made modifications providing new data and made, and we feel the paper more suitable for publication.

1) Verify the format that is used when introducing references in the text. Not sure if it is the one described in the guide for authors.

In accordance with Reviewer 3’s suggestion, the format used when inserting references in the text has been revised.

2) Page 4: The expression ".. to understand the effects of telemedicine use on health outcomes, it is crucial to analyse the prior step, that is to say, to perform an ex-ante analysis to determine what factors explain physicians’ telemedicine use." seems to establish a relation of causality that might not be correct as a single reason to explain the findings. Maybe a milder way of expressing it would fit better.

In response to Reviewer 3’s comment, it should be noted that research into the social uses of technology usually distinguishes between the analysis of the determinants of use (ex-ante research) and the analysis of the outcomes of use (ex-post). While most studies have focused on the outcomes of technology use, we have focused on ex-ante analysis, and have done so by concentrating on five aspects: Optimism, Perceived usefulness of ICTs in clinical practice, Ease-of-use of ICTs in clinical practice, Propensity to innovate, and Level of [personal] ICT use. We believe that this approach is correct because it provides us with evidence of the drivers and barriers explaining technology use (or not), and understanding the factors that explain use means that it is possible to influence the outcomes of such use. Finally, obtaining evidence from three different countries with varying levels of development and comparing it represents an important contribution to the literature, in the sense that it will allow the determinants of telemedicine use to be evaluated, and the common and distinct aspects of its use to be identified.
3) The term "telemedicine" and the acronym "ICT" are used as synonyms throughout the text. However, this is not correct, as it is in fact described in table 2. The latter includes the former but not the other way around. Importantly, telemedicine does not generally imply a significant change in the organizational domain while in the case of ICT (for instance, collaborative integrated care environments) the weight of the organisational aspect might be dominant. This might be an important aspect with regard to the discussion of findings.

We absolutely agree with Reviewer 3’s comment on the term “telemedicine” and the acronym “ICT”, when he says that “the latter includes the former but not the other way around”. In fact, our interest lies in reflecting that distinction in the article and, consequently, not to use them as synonyms. According to Norris (2002) telemedicine is ICT use for diagnosing, monitoring and treating patients in situations where those involved are separated by place and/or time (the definition included in Table 2 and reflected by Reviewer 3). Our paper refers to “telemedicine” as a more evolved use of ICTs for diagnosing, monitoring and treating patients in situations where those involved are separated by place and/or time. Otherwise it is referred to as “ICTs”.

For information, listed below are several references that corroborate the importance of changes in the organisational domain when we refer to “telemedicine”, as occurs similarly in the case of “ICTs”. (Some of these references have also been included in the article).

Source:


Roig F, Saigí F: Difficulties of incorporating telemedicine in health organizations: analytical perspectives Gac Sanit 2009, 23, 147.e1-4

Roig F, Saigí F: Barriers to the normalization of telemedicine in a healthcare system model based on purchasing of healthcare services using providers’ contracts Gac Sanit. 2011;25(5):397–402


Aas IH. Telemedicine and changes in the distribution of tasks between levels of care J Telemed Telecare. 2002;8 Suppl 2:1–2.

4) The terms “technology” and “ICTs” should be used consistently when enunciating the hypothesis, maybe with reference to the definitions used in table 2 as previously mentioned.

In accordance with Reviewer 3’s suggestion, we have ensured that the use of both terms is consistent with the hypothesis formulated and the definition (Norris, 2002) included in Table 2.

**Discretionary revisions**

1) The title of the manuscript generates more expectations that actually delivers. Maybe a more focussed wording would be more appropriate.

The aim of the study presented in the article is to analyse the determinants of telemedicine use. To that end, the study makes two basic contributions. First, it considers six working hypotheses in the context of technology acceptance models (TAMs), which social research has frequently used to capture the determinants of technology use in different types of organisation. Our intention was to use this conceptual framework of reference in our study of the determinants of telemedicine use. Consequently, bearing in mind the objectives set, we believe that the title accurately conveys the purpose of the study.

Finally, we remain at your disposal for any further information you may need.

Yours sincerely,

The authors
REVIEWER: SCOTT C ROESCH

On behalf of my co-authors, we would like to express our gratitude for the comments and suggestions made by the Reviewer 4 to our paper “Drivers of telemedicine use. Comparative evidence from samples of Spanish, Colombian and Bolivian physicians”. His contributions, undoubtedly, seem very relevant as they confer greater scientific consistency and expository clarity to the work. Given the Reviewer 4’s comments, we have made modifications providing new data and made, and we feel the paper more suitable for publication.

1. Before I discuss the statistical approach, I found the description of the variables to be inadequate, and particularly those included in the factor analysis. How many variables comprised the variables for the factor analysis? Was it simply the 4 that are presented in Table 3? What type of rating scale was used for each of these variables? Descriptive statistics and correlations among these items would greatly help.

In order to improve the description of the variables considered in the study, and by doing so to provide more information about them, Table 2 has been revised and modified.

Two important constructs in the proposed model are Perceived usefulness of ICTs in clinical practice and Optimism. Regarding these two, it should be noted that their multidimensional nature suggested that exploratory factor analysis (EFA) should be performed to calculate them. In particular, EFA is a data dimensionality reduction technique. Starting with the analysis of a set of original variables, it seeks to determine the smallest number of dimensions capable of explaining the maximum amount of information contained in the data.

In order to extract the factor dimensions, seven variables were considered in total. Each of them was related to the physicians’ perceived benefits of using ICTs in their clinical practice (measured on a 5-point Likert scale). After initially calculating the factor dimensions, it was found that the factor loadings of certain original variables did not exceed the recommended value of 0.5, thus suggesting that they should be removed from the study. As shown in Table 3, only four original variables were ultimately used to build the constructs Perceived usefulness of ICTs in clinical practice and Optimism.

In order to aid the reader’s understanding of the analysis performed, a paragraph on the descriptive statistics and correlations among the different variables used in the analysis has been inserted in sub-section 3.3. as follows:
In order to confirm the technique’s goodness-of-fit for the three samples, various statistical tests were performed in accordance with the proposals by Bilodeu and Brenner (1999), Fabrigar et al., (1999), and Nunnally and Bernstein (1994). The analysis of the sample correlation matrix for the three analyses performed showed that the variables were highly intercorrelated. In every case, the correlation coefficient values were higher than 0.5. Likewise, the Bartlett’s test of sphericity values were high (59.407 for the sample of Spanish physicians, 65.864 for the sample of Colombian physicians, and 144.915 for the sample of Bolivian physicians). This indicated that the null hypothesis of multivariate normality was rejected in every case, thus confirming that the variables were highly interrelated. Furthermore, in every analysis, these results had significant Chi-square values (at the 99% confidence level) and low correlation matrix determinant values (0.582, 0.564 and 0.59 for the samples of Spanish, Colombian and Bolivian physicians, respectively). This confirms that the variables considered in the different studies were intercorrelated, and could be expressed as a linear combination of other variables.

2. The entire factor analytic work needs to be described in better detail. I have concerns when I read a sentence like that on the bottom of page 9, “the adequacy of the (factor) analysis was confirmed by the Kaiser-Meyer-Olkin (KMO) test and Bartlett’s Test of Sphericity.” This simply isn’t true. KMO and Bartlett’s Test provide evidence that the observed variables are factorable (correlated). They do not confirm the factor structure after the fact.

Moreover, we have no idea how the number of factors was determined, type of rotational method used, communality values, magnitude of secondary loadings, etc. I would encourage the authors to consult the follow paper with regards to factor analysis:


We would like to thank Reviewer 4 for recommending the article by Fabrigar et al. (1999) as it has been of great help to us in justifying and explaining the use of factor analysis and exploiting it in a study like the one presented in our article.
In accordance with his recommendation, sub-section 3.3. has been revised in depth and a detailed explanation given of the various statistical tests used to determine the technique’s goodness-of-fit for the three samples of physicians analysed.

Specifically, the following paragraphs have been inserted:

In order to confirm the technique’s goodness-of-fit for the three samples, various statistical tests were performed in accordance with the proposals by Bilodeu and Brenner (1), Fabrigar et al., (2), and Nunnally and Bernstein (3). The analysis of the sample correlation matrix for the three analyses performed showed that the variables were highly intercorrelated. In every case, the correlation coefficient values were higher than 0.5. Likewise, the Bartlett’s test of sphericity values were high (59.407 for the sample of Spanish physicians, 65.864 for the sample of Colombian physicians, and 144.915 for the sample of Bolivian physicians). This indicated that the null hypothesis of multivariate normality was rejected in every case, thus confirming that the variables were highly interrelated. Furthermore, in every analysis, these results had significant Chi-square values (at the 99% confidence level) and low correlation matrix determinant values (0.582, 0.564 and 0.59 for the samples of Spanish, Colombian and Bolivian physicians, respectively). This confirms that the variables considered in the different studies were intercorrelated, and could be expressed as a linear combination of other variables.

In addition, the statistical technique’s goodness-of-fit was established for each of the samples analysed. In order to do so, the existence – or not – of a high number of partial correlation coefficients other than zero was checked using the Kaiser-Meyer-Olkin (KMO) coefficient. It should be noted that the KMO index is used to compare the magnitudes of partial correlation coefficients; the lower its value is, the higher the partial correlation coefficients’ values are, and consequently the less appropriate it is to perform EFA (1). According to the proposal made by those authors, coefficient values equal to or higher than 0.5 are acceptable. As shown in Table 3, the values obtained for the samples of Spanish, Colombian and Bolivian physicians were 0.581, 0.615 and 0.669, respectively. The technique’s goodness-of-fit was therefore confirmed for the analyses performed on the three samples.

The previously mentioned factors were extracted using the principal component extraction method. The principal component extraction method consists in estimating the standardised factor scores of the first K-components, and in obtaining the factor loading matrix by calculating the correlations
between the original variables included in the study and the factor components obtained as a result. Likewise, this method also makes it possible to comply with the principle of parsimony, where the number of factors obtained is optimal. In order to determine this number of factors, the principal component extraction method uses Kaiser’s rule, which calculates the eigenvalues of the R correlation matrix and takes the number of eigenvalues higher than 1 as the number of factors (2).

Finally, the Varimax rotation procedure1 was used to obtain, from the initial solution matrix, another matrix whose factor loadings made it easier to interpret. The Varimax rotation method is the one that enables the most extreme factor loadings (near 1 or -1) and other loadings near 0 to be obtained. By doing so, it simplifies the interpretation of the factors because the positive or negative sign indicates the type of association between the variable or the factor, whereas the loading value indicates the strength of the relationship.

Finally, regarding the rotation procedure, we opted for Varimax rotation. In this respect, the factor loading matrix plays an important role when it comes to interpreting the meaning of factors. When factors are orthogonal, they quantify the degree and type of relationship between them and the original variables. In practice, however, factor extraction methods may provide factor loading matrices that are unsuitable for interpretation. In order to address that problem, different factor rotation procedures are used, among which is the previously mentioned method.

Reference:


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1 The factor loading matrix plays an important role when it comes to interpreting the meaning of factors. When factors are orthogonal, they quantify the degree and type of relationship between them and the original variables. In practice, however, factor extraction methods may provide factor loading matrices that are unsuitable for interpretation. In order to address that problem, different factor rotation procedures are used.
3. The two factors generated from the factor analysis are used as outcomes in the ANOVA and predictors in the logistic regression analyses. How can we be confident in these analyses given that they are predicated on the validity of these two “factors”?

The use of Cronbach’s alpha coefficient made it possible to calculate the validity of the constructs obtained from the factor analysis, and thus to use them with utmost certainty when performing the subsequent logistic regression analysis.

Additionally, the content and construct scales’ discriminant, convergent and nomological validity were also addressed. With regard to the content, the scales were developed following a major review of the literature.

Convergent validity, a parameter often used in sociology, psychology, and other behavioural sciences, refers to the degree to which two measures of constructs that theoretically should be related are in fact related. Discriminant validity tests whether concepts or measurements that are supposed to be unrelated are, in fact, unrelated. Finally, nomological validity is the degree to which the scale in a theoretically predicted form correlates with the measurements of different yet related constructs.

All the information about the calculation of the previously mentioned construct has been included in the following paragraph in sub-section 3.3:

Finally, it should be noted that using the above-mentioned factors as explanatory variables of the proposed theoretical model meant that the reliability of the metric scales had to be calculated. As shown in Table 3, the Cronbach’s alpha coefficient value obtained for each of the constructs was high. It was higher than 0.70 in every case. According to Nunnally and Bernstein (1), this indicator must have values higher than 0.7 in general, and 0.6 in the case of new scales. Thus, it is possible to assume that the scales used were reliable. Additionally, the content and construct scales’ discriminant, convergent and nomological validity were also addressed. With regard to the content, the scales were developed following a major review of the literature.

Reference:

Minor Essential Revisions

1. The authors should present, or at least give, descriptive information that is relevant to the normality of the item-level and scale-level data that comprise the target study measures that are being treated as continuous.

Some in the psychometric (or broader measurement) literature would suggest that they should use a categorical variable approach to factor analysis given the response options (5-point scale) and non-normality of the data.

In order to assess the normality of a set of data belonging to one sample, we can use the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The latter of the two is recommended in cases where the sample size is below 50. In the case in hand, and given that that sample sizes were higher, we used the Kolmogorov-Smirnov test to analyse the normality of the variables in the three samples of data.

Sub-section 3.3. includes the reference to the analysis performed with regard to the normality of all the variables analysed in the three samples considered. The results of this analysis are shown in the table below. The test was found to be significant at the 99% and the 95% confidence levels for all the variables. The null hypothesis of variable normality was therefore rejected for all the variables in the three samples analysed.

In order not to exceed the manuscript length permitted by the journal, we chose not to include the table shown below in it; we will leave it to the Reviewer's or the Editor's discretion to include it if they consider it necessary to do so. However, in order to describe the analysis performed, the following paragraph has been inserted:

Furthermore, prior to performing binary logistic regression analysis, it was considered expedient to know whether the distribution of the variables analysed was normal. The Kolmogorov-Smirnov test was therefore applied. The test was found to be significant at the 99% and the 95% confidence levels for all the variables. The null hypothesis of variable normality was therefore rejected for all the variables in the three samples analysed. To a large extent, this was explained by the use of 5-point Likert measurements scales, and of factor scores obtained beforehand to measure the constructs Perceived usefulness of ICTs in clinical practice and Optimism (1) (2).

Table 1. Results of the Kolmogorov-Smirnov test to analyse the normality of the variables analysed in the three samples of physicians studied

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicators</th>
<th>Spain</th>
<th>Colombia</th>
<th>Bolivia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease-of-use</td>
<td>N</td>
<td>113</td>
<td>118</td>
<td>279</td>
</tr>
<tr>
<td>of ICTs in clinical practice</td>
<td>Normal parameters $^a$, $^b$</td>
<td>Mean</td>
<td>4.4382</td>
<td>0.69</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Standard deviation</td>
<td></td>
<td>0.60895</td>
<td>1.247</td>
</tr>
<tr>
<td>Most extreme differences</td>
<td>Absolute</td>
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<td>0.311</td>
<td>0.394</td>
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<tr>
<td></td>
<td>Positive</td>
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<td>0.394</td>
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<tr>
<td></td>
<td>Negative</td>
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<td>-0.311</td>
<td>-0.289</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td></td>
<td></td>
<td>5.861</td>
<td>5.332</td>
</tr>
<tr>
<td>Asymptotic significance</td>
<td>(bilateral)</td>
<td></td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Perceived usefulness of ICTs in clinical practice</th>
<th>Normal parameters $^a$, $^b$</th>
<th>Mean</th>
<th>0E-7</th>
<th>0E-7</th>
<th>0E-7</th>
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<td>1.00000000</td>
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<tr>
<td>Most extreme differences</td>
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<td>0.204</td>
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<td>2.214</td>
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<tr>
<td>Most extreme differences</td>
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<td>(bilateral)</td>
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<table>
<thead>
<tr>
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<th>Mean</th>
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<td>Most extreme differences</td>
<td>Absolute</td>
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</tr>
</tbody>
</table>
Reference:

1. Jamieson S: Likert scales: how to (ab)use them Med Educ 2004, 38, 1212-1218

2. Effect sizes should be reported for the ANOVA analyses.

In order to show the effects of the ANOVA analyses reported in sub-section 4.1., Table 5 has been inserted in the annex to the article.


The citation has been changed to Nunnally and Bernstein (1994) in the latest version of our article in accordance with Reviewer 4’s recommendation.

Finally, we remain at your disposal for any further information you may need.

Yours sincerely,

The authors
Annex

At Reviewer 2’s request, the three questionnaires used in our research have been translated and are attached to this letter.