

Moderating Effects of Age and Gender on Social Commerce Adoption Factors the Cameroonian context

Paul Cedric Nitcheu Tcheuffa ¹, Jean Robert Kala Kamdjoug ¹, Samuel Fosso Wamba ²

¹ Université Catholique d'Afrique Centrale, FSSG, GRIAGES, Cameroun

² Toulouse Business School, France

Université Fédérale de Toulouse Midi-Pyrénées

20 Boulevard Lascrosses, 31068 Toulouse, France

paulnitcheu5@gmail.com, jrkala@gmail.com, s.fosso-wamba@tbs-education.fr

Abstract. The popularity and massive adoption of Web-based social networking has given rise to new opportunities for online commerce. Researchers and companies have been recently paying much attention to social commerce, which can be seen as a combination e-commerce and social media. And such euphoria has spanned virtually all regions of the world, including African countries. It is in this light that this paper aims to determine the factors influencing the adoption of social commerce in Cameroon. To this effect, the authors have designed a research model inspired by TAM2 and the trust theory. Data were collected from 404 internet users in Cameroon. Our results found that the perceived ease of use, perceived usefulness and trust have a significant effect on the intention to use social commerce. In contrast, concerning the moderating effect, only the group age is being proved to have a significant effect specifically on the relationship between perceived usefulness and the intention to use social commerce. This study ends with the implications for practice and research.

Keywords: Social commerce, Trust, TAM2, Cameroon.

1. Introduction

The concept of social commerce (S-commerce) emerged in 2005 as part of the growing use of social networks and many other social media sites for commercial purposes[1]. It can be seen as a new form of e-commerce that involves a comprehensive approach to social media in order to provide assistance in the context of buying and selling products and services online [2]. In this context, social commerce is a technology imposing itself on all companies and organizations seeking to survive in an increasingly competitive commercial environment; and Cameroon-based companies should follow this trend and spare no effort for their competitiveness, brand image and sustainability. InternetLives study of 2016 make evidence that Cameroon totals about 4.3 million Internet users for a penetration rate estimated at 18%, which seems very much higher than the statistics of 2011 where the number of internet users was estimated at 1.055 million with a penetration rate of 5% [3]. The growing use of the Web can also be observed through social networks. Indeed, in 2017, about 2.8 million people are social media users in Cameroon, compared to 1.5 million in 2016 [5].

The main objective of our research is to determine the factors that influence the adoption of social commerce by consumers. To achieve this objective, we are going to answer the two following research questions: (1) what are the key determinants of social commerce in Cameroon? (2) What are the moderating effects of age and gender on social commerce adoption? It should be noted that this subject has been treated by many researchers, like Hasan Beyari and Ahmad Abareshi [7], inter alia. Greater part of our background research therefore draws on most of these studies and proposes a research model inspired by TAM 2 [8] to which we add the variable Trust and moderating variables such as Age and Gender, in order to highlight difference between categories. The experience field for this study was acquired by interviewing users of social commerce in Douala and Yaoundé, the main cities of Cameroon.

2. Theoretical background

Because it is characterized by a combination of economic, social, and technological aspects, social commerce has been at a center of different research disciplines, from information systems to marketing, or sociology [9]. In this study, we adopt the definition of Wang and Zhang and consider social commerce as a form of e-commerce that combines commercial activities and social media to enable consumers to actively participate, interact and communicate in the sale and purchase of products and services online [10].

Drawing on these prior studies, we propose the research model below (Fig. 1). The variables used are as follows: Perceived ease of used , Perceived usefulness, Image, Intention to use from TAM 2, Trust from M. Hajli [6], Hasan Beyari and Ahmad Abareshi [7]. We have added to our research model the moderating effect of age and gender to test their variability on the intention to use social commerce.

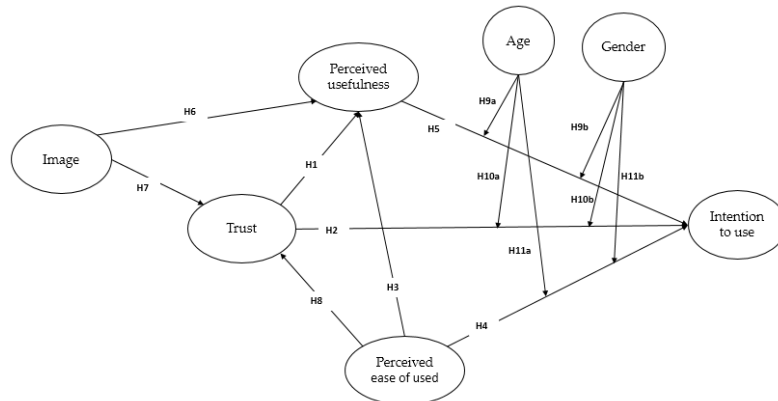


Fig. 1. Research Model

Table 1. Construct operationalization.

| Constructs and definitions | References | Measure indicators |
|---|------------|--|
| Image. It is defined as the extent to which the use of an innovation is perceived by the individual as an improvement to their position in a social system | [8]. | (i) The extent to which the people in your community who use this type of tool have a more prestigious reputation than those who do not. (ii) The extent to which the people in your community who use this type of tool have superior profiles. (iii) The extent to which usage of this type of tool is a status symbol in your community |
| Trust. It refers to a sensation of security and the intention to rely on someone or something | [13] | (i) The degree to which you believe that S-commerce platforms will keep the promises and commitments they make. (ii) The degree to which you believe S-commerce platforms are trustworthy (iii) The degree to which S-commerce platforms are honest (iv) The degree to which you believe that S-commerce is responsible (v) The degree to which you have confidence in S-commerce platforms. |
| Perception of Ease of Use. It is defined as the degree to which a person believes that using a particular system would be free of effort. | [14] | (i) Ease of learning. (ii) Understandable. (iii) Effort to be skillful (iv) Mental effort. (v) Easy to use. |
| Perceived usefulness. It is defined as the degree to which a person believes that the use of this system will improve performance at work | [14] | (i) Increase productivity (ii) Effectiveness (iii) The degree to which the use of S-commerce to make online purchases helps you (iv) The degree to which the use of S-commerce to make online purchases is beneficial |
| Intention to use. It refers to the perceived probability of a person or of the subjective probability of a person to engage in a particular behavior | [13], [17] | (i) Use S-commerce in the future (ii) Recommend to use S-commerce. (iii) Intention to use S-commerce in the future. |

As social commerce is considered a subset of electronic commerce, which consumers usually associate with technology use, theories explaining technology acceptance might be adapted to social commerce acceptance explanation [18]. Behavioral theories such

as the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM) or Unified Theory of Acceptance and Use of Technology (UTAUT) have been often used by many researchers to help understand the adoption of social commerce [13], [19]. Nevertheless, our research is based mainly on the theory of trust and the technology acceptance model by Venkatesh and Davis [8]

The theory of trust studies the behavioral and computational trust among people, organizations, computers and networks [20]. Trust is a central issue in most economic and social transactions, especially in an online context where there may be lots of uncertainty [21]. Indeed, with the increase of social technologies and interconnectivity of people on the Internet, there is a need for some sort of trust and security that will allow the two parties to reduce their perceived risk in transactions [22]. A good number of studies show that trust has a close connection with the intention to use social commerce [7]. According to H. Beyari and A. Abareshi, a consumer with a successful online shopping experience usually enjoys a high level of trust and will likely repeat the experience. Similarly, a lower level of trust makes a customer less likely to shop online [7]. All of these reasons led us to regard trust as a factor that could influence the adoption of social commerce. Therefore, we will test the following hypotheses:

H1: Trust has a positive influence on the perceived usefulness of S-commerce platforms.

H2: Trust has a positive influence on the intention to use S-commerce platforms.

The TAM is one of the most successful theories for examining technology acceptance [24]. This theory aims to link external factors, perceptions, attitude and the intention to study the behavior toward adopting or rejecting a technology, from the individual point of view. In its first version, the technology acceptance model is based on the perceived usefulness and the perceived ease of use to explain the user's attitude, intentions and adoption behavior.

H3: Perception of Ease of use has a positive influence on the perceived usefulness of S-commerce platforms.

H4: Perception of Ease of use has a positive influence on the intention to use S-commerce platforms.

H5: Perception usefulness has a positive influence on the intention to use S-commerce platforms.

The strength of this model resides mainly in its ability to explain up to 40% of the variance with the intention to use and 30% of the use of the system [26]. Otherwise, Davis and Venkatesh identified that TAM had some limitations in explaining why a person would perceive a given system useful, and so they proposed a new version of the technology acceptance model known as TAM 2[8].

In the TAM2 version, the authors have incorporated variables of cognitive and social influence under the assumption that they may influence the beliefs related to the perceived usefulness. The variables that they add to this model are: subjective norm, voluntariness, image, experience, job relevance, output quality, and result demonstrability. Then we can formulate these hypotheses:

H6: Image has a positive influence on the perceived usefulness of S-commerce platforms.

H7: Image has a positive influence on the trust in S-commerce platforms.

H8: Perception of Ease of use has a positive influence on the trust in S-commerce platforms.

Understand influence of gender and age in individual technology adoption and usage decisions have been identified as a significant issue in the technology acceptance literature [8]. Concerning gender, several studies found that there are differences between males and females in their technology-related variables including adoption. For example a study made in Cameroon shows that males have more favorable attitudes towards technologies than females. Females generally experience greater computer anxiety and negative perceptions than males [27]. However, other studies found no significant difference between men and women regarding perceptions and usage of IT. Several studies suggest that age and gender are important demographic variables that have direct and moderating effects on the behavioral intention, adoption and acceptance of technology [30],[31]. This led us to formulate the following hypotheses:

H9 (a-b): Age and gender have a moderating effect on the relationship between the perceived usefulness and the intention to use.

H10 (a-b): Age and gender have a moderating effect on the relationship between trust and the intention to use.

H11 (a-b): Age and gender have a moderating effect on the relationship between the perception of Ease of Use and the intention to use.

3. Methodology

To meet our research objective, an approach based on instruments or quantitative research techniques for data collection has been adopted. It results in figures that make descriptive analyzes, tables and graphs, statistical analysis of research links between the variables or factors, correlation analysis and association. This approach allowed us to gather clear and observable data to test the assumptions of our theoretical model.

We have used a questionnaire to collect data. All items in our questionnaire were assessed on a Likert scale with seven levels [33]. In this research, all internet users in Cameroon were considered as the research population. Snowball sampling technique was considered in data collection, and consisted in sending the research questionnaire to family members, friends, peers, and so on, and in inviting them to resend it again for their acquaintances, in order to reach a highly representative sample size. Our investigation began on July 10 and ended July 22, 2017 (a period of 13 days). At the end of this survey, we obtained a total of 404 respondents.

For the purpose of this study, we used mainly two software applications for the collection, processing and analysis of the data collected. The online application Google forms was used for the development of the questionnaire and for the compilation of the descriptive statistics of our sample. The Smartpls-3.2.6 software allowed us to assess the adequacy of the theoretical model and to verify its hypotheses.

4. Results

This section presents the results of our study, following a proper processing of data collected in the field. The use of tables may have the advantage of presenting the results in a clearer and more understandable way.

4.1. Demographic Information

The demographic profile of our survey's respondents is presented in Table 2. This table shows that respondents are made up of 60.6% men and 39.4% women. It is important to note a high level of education in our study population. Of all respondents, about 88.1% have been at the university, 53.7% of whom obtained a master's degree and more. **The high level of education of respondents can be justified by the fact that they have quickly become aware of the benefits and facilities offered by social commerce and are therefore better received.** Concerning age, our population is young because 90.8% of it is in the age group of 18-34 years.

Table 2. Demographic Characteristics of Respondents

| Dimension | category | Frequency | Percentage (%) |
|-----------|------------------------------|-----------|----------------|
| Gender | Male | 245 | 60.6 |
| | Female | 159 | 39.4 |
| Age | At least of 18 years old | 6 | 1.5 |
| | 18-24 years old | 175 | 43.3 |
| | 25-34 years old | 192 | 47.5 |
| | 35-44 years old | 28 | 6.9 |
| | 45 years old and more | 3 | 0.7 |
| Education | No formal qualification | 1 | 0.2 |
| | Primary school qualification | 1 | 0.2 |
| | Secondary | 17 | 4.2 |
| | Technical | 29 | 7.2 |
| | Bachelor's degree | 139 | 34.4 |
| | Master's degree and more | 217 | 53.7 |

4.2. Demographic of Respondents.

Table 3 presents the factor-loadings, the Cronbach's values alpha, composite reliability and average of the extracted variance of the model. All the values in the table stand above the thresholds of acceptability, normally at 0.6, 0.7, 0.7 and 0.5 [31],[32],[33].This clearly supports the relevance of the constructs used in our theoretical model.

Table 3. Factor loadings, Cronbach's alpha, Rho de D.G. (ACP) and AVE of the model.

| <i>Constructs</i> | <i>Indicators</i> | <i>Factor-Loadings</i> >0.6 | <i>Cronbach's Alpha</i> >0.7 | <i>Rho de D.G. (ACP)</i> >0.7 | <i>AVE</i> >0.5 |
|-------------------------------|-------------------|--|---|--|------------------------------|
| Image (IMG) | IMG1 | 0.847 | 0.832 | 0.835 | 0.748 |
| | IMG 2 | 0.883 | | | |
| | IMG 3 | 0.864 | | | |
| Trust (TR) | TR1 | 0.771 | 0.907 | 0.910 | 0.732 |
| | TR2 | 0.854 | | | |
| | TR3 | 0.908 | | | |
| | TR4 | 0.890 | | | |
| | TR5 | 0.848 | | | |
| Perceived ease of used (PEOU) | PEOU1 | 0.787 | 0.780 | 0.805 | 0.540 |
| | PEOU2 | 0.800 | | | |
| | PEOU3 | 0.805 | | | |
| | PEOU4 | 0.519 | | | |
| | PEOU5 | 0.723 | | | |
| Perceived usefulness (PU) | PU1 | 0.823 | 0.832 | 0.833 | 0.665 |
| | PU2 | 0.863 | | | |
| | PU3 | 0.813 | | | |
| | PU4 | 0.761 | | | |
| Intention to use (IU) | IU1 | 0.912 | 0.908 | 0.909 | 0.845 |
| | IU2 | 0.926 | | | |
| | IU3 | 0.920 | | | |

Table 3 shows that the Rho value of D.G varies from 0.805 to 1.000 > 0.7 and that Cronbach's Alpha of the construct ranges from 0.780 to 1.000 > 0.7, which indicates a strong internal consistency and reliability of our constructs. As for AVE, their value varies from 0.540 to 1.000 > 0.5. Based on these previous findings, we can conclude that the convergent validity is insured. Regarding the HTMT ratios of correlation between the constructs, the different corresponding values are set forth in Table 4. Such values are acceptable because they are below the threshold of 0.90 [33]. On the basis of the findings, both the reliability and validity of the constructs are guaranteed.

Table 4. Heterotrait-Monotrait Ratio (HTMT)

| | Intention to use | Image | Perceived ease of use | Perceived usefulness | Trust |
|-----------------------|------------------|-------|-----------------------|----------------------|-------|
| Intention to use | | | | | |
| Image | 0.279 | | | | |
| Perceived ease of use | 0.787 | 0.260 | | | |
| Perceived usefulness | 0.748 | 0.344 | 0.695 | | |

| | | | | |
|-------|-------|-------|-------|-------|
| Trust | 0.638 | 0.386 | 0.551 | 0.545 |
|-------|-------|-------|-------|-------|

The Bootstrapping method allows testing the significance of the relationship between the constructs featuring in the model through the interpretation of the t-statistics, as well as the correlation between these constructs by looking deeply on the values of the path coefficient. To express some significance, the t-statistics must be greater than 1.96 [30]. Table 5 summarizes these values.

Table 5. Structural Model Testing Hypothesis using Bootstrapping.

| Hypothesis | Path coefficient (β) | Standard Deviation (STDEV) | T Statistics ($ O/STDEV $) | P Values | Hypothesis testing result |
|---------------------------|------------------------------|----------------------------|------------------------------|----------|---------------------------|
| H1. TR \rightarrow PU | 0.229 | 0.048 | 4.750 | 0.000 | Accepted |
| H2. TR \rightarrow IU | 0.261 | 0.039 | 6.607 | 0.000 | Accepted |
| H3. PEOU \rightarrow PU | 0.444 | 0.051 | 8.662 | 0.000 | Accepted |
| H4. PEOU \rightarrow IU | 0.367 | 0.052 | 7.040 | 0.000 | Accepted |
| H5. PEOU \rightarrow IU | 0.367 | 0.052 | 7.040 | 0.000 | Accepted |
| H6. IMG \rightarrow PU | 0.118 | 0.042 | 2.798 | 0.005 | Accepted |
| H7. IMG \rightarrow TR | 0.251 | 0.045 | 5.609 | 0.000 | Accepted |
| H8. PEOU \rightarrow TR | 0.409 | 0.043 | 9.412 | 0.000 | Accepted |

Table 6. R-square and R-square Adjusted.

| Latent constructs | R Square | R Square Adjusted |
|-------------------|----------|-------------------|
| IU | 0.605 | 0.602 |
| PU | 0.398 | 0.393 |
| TR | 0.273 | 0.269 |

Table 5 shows that all t-statistics are greater than 1.96, but also that all the hypotheses were considered significant. The intention to use social commerce is positively influenced by PEOU ($\beta = 0.367$), PU ($\beta = 0.319$), TR ($\beta = 0.261$). In addition, Table 6 shows that the coefficient of determination R^2 that is being obtained is 0.605 for the IU social commerce, thus suggesting a good fit of the data with our proposed model [33]. Multigroup Analysis (MGA). The multigroup analysis assesses whether predefined data groups present significant differences for the group-specific model estimations. For this purpose, we decided to use the PLS-MGA approach (Partial Least Squares Multigroup Analysis). It focuses on the bootstrapping results for each construct [37].

The PLS-MGA method [38] represents an extension of Henseler’s MGA [37]. This method is an important non-parametric test for the comparison of the group-specific bootstrapping PLS-SEM results. The fact that the p-value is smaller than 0.05 or larger than 0.95 indicates a significant difference from the probability of 0.05.

Table 7. Multigroup Analysis of the Group “Age”

| | <i>Group_age 18-24</i> | | <i>Group_age 25-34</i> | | <i>Group_age 18-24 vs. Group_age 25-34</i> | | |
|-----------|------------------------|-----------|------------------------|-----------|--|---------|---------|
| | p(1) | Se (p(1)) | p(2) | Se (p(2)) | p(1) - p(2) | t-value | p-value |
| PEOU → IU | 0.47 | 0.073 | 0.286 | 0.066 | 0.185 | 1.892 | 0.059 |
| PU → IU | 0.168 | 0.076 | 0.434 | 0.070 | 0.266 | 2.592 | 0.010 |
| TR → IU | 0.276 | 0.056 | 0.262 | 0.057 | 0.014 | 0.173 | 0.863 |

p(1) and p(2) are path coefficients of Group_age 18-24 and Group_age 25-34, respectively; se(p(1)) and se(p(2)) are the standard error of p(1) and p(2), respectively.

For the sake of simplifying our study, we decided to restrict analyses to only the two groups relating to Group_age 18-24 vs Group_age 25-34. We considered the other values irrelevant. Table 7 shows only one completely different relationship across the two groups, namely the relationship PU → IU (p-value = 0.01 < 0.05). The analysis of the values of each group path coefficient—Group_age 18-24 (path coefficient = 0.168) and Group_age 25-34 (path coefficient = 0.434)—reveals that the second group is stronger than the first group, which means that respondents’ age range 25-34 has a more significant effect on that relationship than the age bracket 18-24.

Table 8. Multigroup Analysis of the Group “Gender”

| | <i>Group_gender (F)</i> | | <i>Group_gender (M)</i> | | <i>Group_gender (F) vs. Group_gender (M)</i> | | |
|-----------|-------------------------|-----------|-------------------------|-----------|--|---------|---------|
| | p(3) | Se (p(3)) | p(4) | Se (p(4)) | p(3) - p(4) | t-value | p-value |
| PEOU → IU | 0.374 | 0.069 | 0.384 | 0.073 | 0.010 | 0.098 | 0.922 |
| PU → IU | 0.285 | 0.065 | 0.329 | 0.074 | 0.044 | 0.415 | 0.678 |
| TR → IU | 0.296 | 0.056 | 0.220 | 0.056 | 0.077 | 0.927 | 0.354 |

p(3) and p(4) are path coefficients of Group_gender(F) and Group_gender(M), respectively; se(p(3)) and se(p(4)) are the standard error of p(3) and p(4), respectively.

Table 8 shows that the two gender groups are not significant for any of the relationships (because no p-value meets the condition). This suggests that gender has no influence on the relationships PEOU → IU, PU → IU, TR → IU.

5. Discussion and Conclusion

S-commerce is more and more drawn to the attention of researchers and companies not only because of the volume of sales such channel and tool triggers, but also for the evolution that is expected from it [13]. Impact analyzing of S-commerce on the intention to purchase products and services have been carried on, based on a behavioral model from a prior literature review. Therefore, we have proposed a research model explaining why and how social commerce is adopted by consumers. Mainly by the TAM 2 [8], such research model has been enriched through an integration of the variable Trust.

The results of our study have shown that trust has a positive influence on the intention to use social commerce, which confirms several similar studies [23], [39], [40]. In other words, S-commerce platforms should be environments where consumers can sell or buy safely.

Another finding is a significant relationship between the perceived ease of use and the intention of consumers to use S-commerce. This means that easiness in handling and navigating processes are determinant criteria in the adoption of social commerce platforms.

Our study reveals also that the perceived usefulness has a positive influence on the intention to use social commerce, thereby implying that a potential buyer acts favorably only when he/she perceives to the usefulness of their act. Benefits in terms of performance and efficiency may further motivate the use of social commerce by a buyer. Furthermore, it has been established that age has a significant moderating effect on this relationship. Indeed, the MGA test showed that the group of users aged between 24 and 35 years old finds social commerce more useful than the group of users aged between 18 and 24. **More exactly, based on the segments resulting from the application of the moderating effect of age among users, companies will be able to define strategies adapted to consumers. If an organization targets a young audience, her social commerce platform should be able to offer facilities to these consumers, for example the means of payment on the platform must be diversified.**

By contrast, the gender factor has been proved to have no significant effect on all of the relationships being examined. **This finding contradicts with others as the one from Onguéné Essono and Béché [27] where they found that, in the population of secondary school students in Cameroon, there is not an interaction between gender and IT adoption.**

There are some limitations of our study which may provide interesting opportunities for future research. First of all, using only a cross-sectional design and a longitudinal approach (to test both the robustness of the relationships and the evolution of the moderating variables (gender and age)) seems restrictive. Further investigation may well think about curbing such shortcomings. Secondly, we failed to consider other important variables, such as experience and culture, in this research. The impact of such factors on the adoption of social commerce may be another interesting research topic.

Finally, it should be noted that by mastering consumers' behavior toward s-commerce and the enabling factors for purchasing through this emerging technology,

managers would be more inclined to develop effective strategies for increased online consumer purchase.

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