Covid-19: Performance of e-commerce in Morocco

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Abstract. The Coronavirus feeds easily on the effects of globalization. Thus, beyond the social dimension of this pandemic, the problem of Covid-19 poses another acute psychosocial concern. Spread of this virus has led us to several questions related to socio-economic phenomena, from which stems two major problematics of this article and which are as follows:

– Has the period of confinement changed the behavior of Moroccan consumers?
– What is the effect of social anxiety and modification of economic situation caused by covid-19 on the change in consumer behavior in Morocco?

In order to deal with this subject, we adopted a quantitative study by administering an online questionnaire that was shared and disseminated on social networks. The results of our study showed firstly that there has been a remarkable change in the habits of Moroccan citizens, due to the period of confinement, marked mainly by the orientation towards e-commerce, which performed during this period of health crisis. Secondly, we were able to conclude that the increase in the level of anxiety had a positive impact on the change in the behavior of consumers, who turned much more towards e-commerce.

Keywords: Covid-19 · Social anxiety · E-commerce · Economic change · Behavior of consumer

1 Introduction

Since January 2020, humanity has been officially in the limbo of an unprecedented pandemic. The Coronavirus that broke out in Wuhan, China, has now spread to the rest of the world. From Asia to Oceania via the Old Continent, Covid-19 is gaining ground and increasingly reaching Africa. And among the states of the black continent, Morocco seems to be by far the most affected with its 4423 reported cases. Thus, the meteoric spread of this pandemic is in many ways reminiscent the famous “global village” of Marshall et al. (2007).

The Coronavirus feeds easily on the effects of globalization. Migration and the interdependence of societies are its driving force. Thus, beyond the social dimension
of this pandemic, the problem of Covid-19 poses another acute psychosocial concern. Indeed, the constant appearance of new cases on micro and macro scale, containment measures, curfews and above all the number of victims is contributing to a wave of anxiety among individuals. This paralyzing stress is all the more accentuated by the unknown linked to the virus, the overruling of health authorities and especially the wave of information and misinformation on the Coronavirus.

However, the greatest consequence of this social anxiety linked to Covid-19 is to be found in the economic field. Stressed, the consumer, because of the identified risks, comes to modify his commercial habits.

Therefore, what is the impact of the social anxiety and modification of economic situation emanating from the Coronavirus pandemic on the behavioral dynamics of the Moroccan consumer?

After having formulated the research problem, our research pursues three main objectives:

– study the change in consumer behavior due to the national lockdown period;
– Showing the effect of social anxiety on consumer attitude.
– Understanding the impact of economic change on consumer behavior.

2 Impact of Social Anxiety on Consumer Attitude

The Coronavirus has plunged citizens of the world into a veritable social psychosis. As Sheena et al. (Date) point out, growing social anxiety is, first and foremost, linked to an intolerance due to the Coronavirus. Indeed, that authors, who have studied the spread effects of avian influenza on psychology health of individuals, concluded people who cannot manage their emotions are the most affected by an increase in their anxiety level. Nathalie et al. (date) had already pointed out the connections between lack of information, development of a dose of uncertainty and appearance of social psychosis.

Thus, different studies shows that Covid-19 cause an unprecedented level of stress and anxiety in individuals. It should also be pointed out that all measures necessary for eradication of Covid-19 (in Morocco and other countries of the world) promote the development of psycho-sociological pathologies of individuals.

It should be noted that the previous works which have focused on the links between the psycho-sociological effects of viral pandemics and macroeconomic problems are very abundant. Several of these studies postulate that the physical and mental health of populations is dependent on their economic well-being and growth. These include the work of Pritchett and Summers (1996), Bloom and Sachs (1998), Bhargava et al. (2001), Cuddington et al. (1994), Cuddington and Hancock (1994), Robalino et al. (2002) and others.

In addition, studies by the WHO Commission on Macroeconomics and Health (2001), Haacker (2004) and McKibbin and Sidorenko (2006) are also available. Recently, the scholarly literature has been enriched by a study by McKibbin and Fernando (2020) on macroeconomic impacts of Covid-19 by postulating seven scenarios. Thus, scenarios 1 to 3 assume that the effects (mainly epidemiological) of Coronavirus are isolated in China. Furthermore, these scenarios assume that economic cost borne by China will be
transposed to the rest of the world due to the interdependence of economic systems on
global scale. The domino effect is thus justified by three basic elements: trade, capital
flows, and changes in risk premia in global financial markets.

Scenarios 4 to 6 support the hypothesis that the epidemiological effects of Covid-19
would affect the rest of the world. This in many ways is the case today.

Finally, scenario 7 postulates that the pandemic could recur every year for an
indefinite period.

The authors conclude by drawing attention to the fact that global decision-makers
should invest in public health. This would enable the decadent health systems of the
South to withstand the rapid rise of Covid-19.

With regard to the concrete effects of social anxiety on changes in consumer habits,
it should be noted that it depends on the degree of exposure but also on the perception
of risk. In fact, the consumer’s reaction is above all subject to the social representations
of the disease; of “mass psychosis”.

Such an analogy can be made with regard to the appearance of Covid-19 in Moroccan
society. In fact, the first cases did not really impress a certain social anxiety on the con-
sumer. Most of them developed what Taylor calls the tendency to ‘unrealistic optimism’.
This presupposes that individuals will primarily consider that the effects (epidemiologi-
cal, psychological and economic) of the virus will not be unfavorable to them. But then
again, if the situation becomes alarming, they will be spared the harms of the virus. In
spite of the risk incurred but unfortunately unknown (or at least ignored), the majority
of individuals do not fundamentally change their behavior as users. The explanation is
that exposure to stress and other psychological pathologies from Covid-19 is not great.

Conversely, the more individuals are exposed to anxiety-provoking situations (death,
growth in Covid-19 cases, alarming information, confinement, state of emergency, etc.),
the more they will change their consumer habits.

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3 Effect of Economic Change on Consumer Behavior

According to the model adopted, it appears that the effect of social anxiety on consumer
behavior depends on the degree of exposure but also on the consumer’s personality. To
this must be added an important factor; in this case the economic effects of the pandemic.
In reality, the relationship between economic crisis, social anxiety and changes in consumer behavior is twofold and interdependent.

Indeed, an economic crisis can strongly impact the mental health of individuals. As the WHO study points out, anxiety, and by ricochet (Date), depression depend on the degree of poverty and social inequity. It is such a picture of desolation offered by an economic crisis resulting from cessation of all activities due to Covid-19.

In addition to that, anxiety and perception of risk may lead consumer to change his commercial behavior. In order to survive, he can develop coping strategies after identifying the risks of the pandemic.

The first indicator of the change in consumer behavior is related to the quantity of purchases. Stress and anxiety linked to unknown Covid-19 led several consumers to increase their food ratios. Indeed, faced with the uncertainty surrounding the eradication and end of the pandemic, the general tendency was to raid the shelves in order to stock up on groceries. This social psychosis mainly revealed the consumer’s almost selfish survival instinct through his perception of risk.

The second element indicative of a change in behavior is the quality of the products purchased. Indeed, the majority of consumers are abandoning imported products in favor of locavores. A neologism that appeared in the United States, locavorism is a current that promotes a return to local consumption. It is based on the idea that individuals should promote the consumption of local products that are located in an area of about 100 to 250 km from their habitat. Thus, whether you are for or against locavorism, the spread of Covid-19 is conducive to a strong return to this eating practice. In reality, the closing of national borders and the stop of food exports are considerably disrupting consumer habits. Locavorism becomes the happy outcome in the absence of the usual products promoted by the phenomenon of globalization.

A third element attesting to the change in consumer behavior is related to the way of making purchases. Ankylosed by the fear of being contaminated, of joining the batch of “cases”, or even worse the “death” box, most consumers avoid going to the store. The option they find more reassuring is to use home delivery services.

Finally, the loss of certain jobs in key sectors (businesses, tourism) has as a corollary the decline in purchasing power of some households. In fact, the people most exposed to the economic harms and mental stress of the pandemic is consumers who do not have very high purchasing power.

Thus, it is incumbent on policy makers to find ways to reduce the socio-economic imbalance. It should be pointed out that such an undertaking is far from easy. However, notwithstanding the increasing development of public aid, the consequences are likely to be disastrous: unemployment, job losses, loss of purchasing power, depression, insanity, mental disorders, etc.

Overall, it is therefore clear that growing anxiety is having a real effect on changing consumer behavior in Morocco. The anxiety-producing and economic impacts on consumer attitudes are mainly linked to the following factors.

4 Materials

The appearance and spread of Covid-19 have caused discomfort in various countries around the world, causing mental and financial suffering. In this perspective, we decided
to explore the effect of social anxiety on consumer. As the first step, in order to contextualize the model, we interviewed six Moroccan experts. As the second step, we adopted a quantitative study, in this sense; we randomly interviewed Moroccan citizens from different areas of the kingdom. Data was collected by sharing the survey on social media. In the end, we received 705 responses.

Part of the questionnaire was reserved for studying the change in consumer behavior between the periods before and during confinement due to the spread of covid-19. In this sense, we used the SPSS software.

Also, to answer the second problematic of this article, related to identification of the relations between social anxiety - consumer behavior and economic situation – consumer behavior, we used PLS. In this sense, we proceeded to the exploratory then confirmatory study.

5 Results

5.1 Impact of Anxiety and the Economic Change on Moroccan Consumer Behavior

![Graph showing the variation in consumption behaviour of Moroccan citizens: Before and during confinement](image)

Fig. 1. The variation in consumption behaviour of Moroccan citizens: Before and during confinement
The first question we asked the respondents related to the priorities in terms of purchases. In this sense, we made six choices that had to be ranked in order of priority before and during the confinement period (Fig. 1).

As we can see on the graph, the product which was in the last position before covid-19, was finally positioned as being the second and therefore represented a product of first necessity is “Basic prevention of the epidemic”. However, entertainment tools lost points between that two periods. And as we can see in the graph, foods and drinks kept their position as the leaders of the products consumed during the different periods (Fig. 2).

![Fig. 2. Places of purchases of Moroccan citizens: before and during confinement](image)

Our second question was about places of purchase before and during confinement. We can easily see that e-commerce has gained points by transforming itself into the second most used technique by citizens after supermarkets. On the other hand, the souks must have lost their customers during the period of confinement. This can be explained a priori by the confinement of individuals, who find themselves obliged to change their consumption behavior (Fig. 3).

The third question related to the activities carried out by individuals during confinement. We noticed that cooking, watching tv and sleeping are most practiced by citizens during this period.

After answering the first question of this study and which showed us clearly that the spread of covid-19 and the national confinement of citizens has impacted the behavior of individuals on the different levels, we now turn to the analysis of the model in question.
This with the aim of verifying, if indeed the modification of the economic situation and the increase in the level of stress can contribute to the change of the behaviour of the consumer.

5.2 Model Specification

We formed the equation model to test the hypotheses. The following aspects have been taken into account in the specification of the model. The model includes all of the potential links that seemed reasonable given our previous research on this subject. He tests the impact of social anxiety and the modification of economic situation of citizen’s...
during propagation of covid’19 on the change of consumer’s behavior. Items released from the literature and the exploratory study measured those three variables (Fig. 4).

Fig. 5. The research model

On Smart Pls, the model was presented as well (Fig. 5).

5.3 Statistical Analysis

We focus on testing the relationships between the variables in our model in order to validate or refute each of the hypotheses. In this perspective, we will go through two stages: the first relates to the explanation and adjustment of the measurement model through three tests: reliability, convergent and discriminant validity. The second will consist first in evaluating the overall validity of the model and then in testing the hypotheses of the structural model. We will use Smart PLS 2.0 software for this purpose.

The measurement model, also called an external model, represents the assumed linear relationships between the latent variables and the manifest variables. To get it, we will have to follow the following three steps:

– Reliability of items
– Convergent validity
– Discriminant validity

Reliability of items

The reliability of the items is verified by the “loadings” saturations, which consist in examining the correlation of the measurement indicators while respecting their theoretical constructs. Traditionally, it is evaluated using Cronbach’s Alpha, the threshold
accepted by researchers is 0.70 (Chin 1998). The results after iterations are presented in the table below (Table 1).

Table 1. The results after iterations

| Indicators       | Loading | Alpha Cronbach |
|------------------|---------|----------------|
| Anxiety          |         |                |
| ANX4             | 0.851   | 0.714          |
| ANX8             | 0.875   |                |
| Economy          |         |                |
| ECON2            | 0.876   | 0.752          |
| ECON3            | 0.711   |                |
| ECON4            | 0.857   |                |
| Consumer’s behavior |       |                |
| COBE5            | 0.922   | 0.701          |
| COBE7            | 0.965   |                |

This study allowed us to retain the most relevant indicators, thus, for anxiety, of the nine items identified in the literature; two of them actually measure it. Regarding to the economy, out of 5 items, the PLS analysis made it possible to retain three, and finally for consumer behavior, two indicators out of nine found in the literature were validated.

Convergent validity

Now we move on to the verification of convergent validity, which is calculated, based on the average variance shared between a variable and its items (Hulland 1999). Researchers who used PLS used internal consistency, developed by Fornell and Larcker (1981) and adopted the instructions proposed by Nunnally (1994), who considers the threshold of 0.7 as a record for “modest” compound reliability (composite reliability) (Table 2).

Table 2. Values of convergent validity

| Variables          | Composite Reliability |
|--------------------|-----------------------|
| Anxiety            | 0.728                 |
| Economy            | 0.759                 |
| Consumer’s behavior| 0.813                 |

The values of convergent validity are acceptable. Indeed, the constructs relating to consumer’s behavior have a strong internal coherence with a composite reliability that exceeds 0.9.

The other constructs have good internal consistency with values greater than 0.8.
Discriminant validity

Discriminant validity represents the traditional methodological complement of convergent validity. It consists in proving that the item is linked more strongly to its variable (AVE) than to the other constructs in the model. It happens when “the squared correlation between 2 latent variables is lower than the AVE index of each latent variable. Chin (1998) recommends that the AVE should have a value greater than or equal to 0.5” (Mourre 2013) (Table 3).

|          | AVE     | Anxiety | Economy | Consumer’s behavior |
|----------|---------|---------|---------|---------------------|
| Anxiety  | 0.778145 | 0.810023 |         |                     |
| Economy  | 0.891263 | 0.759271 | 0.989941 |                     |
| Consumer’s behavior | 0.891654 | 0.710342 | 0.905925 | 0.96512 |

As this table indicates, all the cross-contributions of the variables are less than the square root of the AVE, which implies the validation of the discriminate validity of our construct.

By using PLS regression, the analysis of the results obtained allowed us to stabilize the measurement model. In the following, we will assess the overall validity of the model and then test the hypotheses of the structural model.

The Goodness of fit index is a statistical test that determines the level with which the sample data correspond to a normal distribution of a population.

For our model, the GoF, which is calculated on the basis of the average of the different constructs of the explained variance ($R^2$), the redundancy index and the community, presents a satisfactory level, $GoF = \sqrt{(0.30 \times 0.56)} = 0.38$. The threshold recommended in the literature being 0.30, this reflects on the one hand, a good quality of the links between the measurement variables and the latent variables, and on the other hand, a good quality of the structural relationships.

After having evaluated the predictability of the model through the Goodness Fit index, we will proceed in this second step to testing the hypotheses. It consists first of all in examining the level of significance of the standardized coefficients (Path coefficient) of the relationships between the latent variables. A Bootstrap type simulation is carried out for this purpose. Thus, in order to test the research hypotheses, we calculated the correlation coefficients between the variables (Path coefficient) under the Smart-PLS software. The results are shown schematically in the table below (Table 4).

The strong association between the social anxiety and the change in consumer behavior was confirmed by this study.
### Table 4. Testing the hypotheses

| Hypotheses                                                                 | B(correlation coefficient) | t-student (Boots Trap) | Decision |
|---------------------------------------------------------------------------|----------------------------|------------------------|----------|
| H1: The rise in the level of social anxiety during covid-19 influences strongly the change in consumer behavior | 0.651                      | 6.731                  | V        |
| H2: the change in the economic situation of citizens during covid-19 influences strongly the change in consumer behavior | 0.791                      | 7.582                  | V        |

In addition, the change in the economic situation of citizens during covid-19 also influences strongly the change in consumer behavior. This was confirmed by the statistical analyses carried out on SmartPLS.2, with a correlation level of 0.79 and a t-Student of 7.58.

### 6 Discussion

Current research aims to better understand the impact of social anxiety and the change in the economic situation of Moroccan consumers on their consumption behavior during the spread of covid-19.

The results of this research stem from numerous lessons which are as follows:

- An increase in the average consumption of basic prevention of the epidemic, cleansers, food and drinks.
- The use of E-commerce platforms as a place to buy in order to avoid the risk of contamination. In fact, in this period of pandemic, E-commerce has become a reality in Morocco. The panic of displacement thus gives way to incessant orders on online platforms. Our sample is reluctant to go shopping in supermarkets and adoring the sedentary economy. This seems to explain why the average online shopping during Covid19 recorded a strong increase (4.10).
- The use of television, cooking, surfing on social networks and sleep to pass the time during confinement.

On the other hand, the change of economic situation pushes Moroccans to avoid spending their income on goods and services which are not strictly necessary such as entertainment tools and food supplements which are considered in this crisis as luxury products.

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