

# **E-marketing and the Health Crisis: An Analysis of Pharmaceutical Purchasing Practices during the Covid-19 Pandemic in Algeria**

**Phd student, Oussama BENABID,**

Higher School of Commerce – Koléa (Algeria), Laboratory of Practical Studies in Commercial and Management Sciences  
[o\\_benabid@esc-alger.dz](mailto:o_benabid@esc-alger.dz)

**Pr. Karim GACEM**

Higher School of Commerce – Koléa – (Algeria),  
Laboratory of Practical Studies in Commercial and Management Sciences  
[k\\_gacem@esc-alger.dz](mailto:k_gacem@esc-alger.dz)

## **Abstract:**

The Covid-19 crisis profoundly transformed pharmaceutical purchasing practices in the wilaya of Bordj Bou Arreridj. Through interviews conducted with 12 pharmacists, the study shows that the pandemic accelerated the adoption of remote ordering and delivery, mainly through informal digital tools such as WhatsApp, Facebook, and the telephone. Remote pharmaceutical counselling became a major issue, requiring professionals to develop alternative strategies. The absence of a clear legal framework nevertheless created persistent uncertainty. Pharmacists consider these changes to be lasting and to mark an irreversible transformation of the profession. This research therefore provides a local perspective on the emerging digitalisation of the sector and its challenges.

**Keywords:** E-marketing; community pharmacist; consumer behaviour; Covid-19; digitalisation; home delivery; pharmaceutical counselling.

## **Introduction**

The health crisis caused by the Covid-19 pandemic in March 2020 profoundly destabilised economic and social systems worldwide. To curb the rapid spread of the virus, governments introduced unprecedented measures: strict lockdowns, restrictions on movement, closure of businesses considered “non-essential,”

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and the implementation of rigorous health protocols. In this context, the distribution sector, including health products, had to undergo rapid and sometimes radical adaptation.

Although the digital transition had already begun in several fields, the pandemic considerably accelerated its deployment. Consumers, compelled to reduce travel and wishing to limit the risk of infection, widely adopted digital solutions. E-marketing—including online ordering platforms, the commercial use of social networks, and delivery services—thus became an essential distribution channel for many sectors.

The pharmaceutical sector, often considered relatively resistant to digitalisation because of strict regulation and the sensitive nature of its products, was nevertheless drawn into this transformation. In Algeria, as in many countries, community pharmacies had to reconsider how they interacted with customers by implementing alternative solutions to ensure continuity of care while respecting social-distancing rules.

In the wilaya of Bordj Bou Arreridj, a territory that is both industrial and agricultural and located east of Algiers, consumers had long favoured direct interaction with the pharmacist, regarded as a reliable source of advice and support. However, the arrival of the pandemic and lockdown measures profoundly disrupted these well-established habits.

Faced with movement restrictions, difficulties in accessing public transport, and fear of contracting the virus in crowded places, users had to find new ways of obtaining medicines and health products. It was in this context that e-marketing tools—which had previously been little used in the local pharmaceutical sector—began to develop: orders by telephone or social networks, payments by bank transfer, and delivery services provided by pharmacists or external providers.

This development leads to the central question underlying our study: how, in the face of movement restrictions and fear of infection, did consumers in Bordj Bou Arreridj integrate e-marketing tools—ordering platforms, social networks, and home delivery—into their purchasing practices for pharmaceutical products during the Covid-19 crisis?

This question requires examination not only of visible changes in purchasing practices, but also of the psychosocial, technological, and contextual determinants that facilitated or hindered digital adoption. To address this issue, our study is structured around three major objectives:

- Analyse changes in pharmaceutical purchasing behaviour before, during, and after lockdowns, highlighting changes in the distribution channels used, purchasing frequency, and categories of products concerned.
- Identify the factors influencing the adoption of pharmaceutical e-marketing in the particular context of Bordj Bou Arreridj, distinguishing crisis-related factors (fear of infection and lockdown), supply-side factors (services developed by pharmacies), and individual characteristics (age, digital equipment, and trust in digital tools).
- Assess the degree of trust consumers place in digital channels for purchasing pharmaceutical products by analysing their perceptions of product safety, the quality of counselling, and the reliability of delivery services.

This research has both theoretical and practical significance. Theoretically, it enriches still-limited literature on consumer behaviour during health crises by proposing a study rooted in a specific territory. It also makes it possible to question the relevance of classical consumer-behaviour models in the face of a

major externally induced disruption. From an empirical and managerial perspective, the study provides valuable local insight into the wilaya of Bordj Bou Arreridj, a territory that remains relatively under-researched in studies of pharmaceutical e-marketing in Algeria. It highlights how a historically regulated sector based on strong interpersonal relationships had to adapt rapidly to new demand. The findings consequently offer useful insights for pharmacists, public decision-makers, and digital-sector actors seeking to understand the drivers and obstacles to the digitalisation of this strategic sector.

## Theoretical and Conceptual Framework

The objective of this first part is to establish the conceptual foundations necessary for analysing pharmaceutical purchasing practices during the health crisis. We successively present the specificities of e-marketing applied to the pharmaceutical sector, the main theories relating to consumer behaviour in a crisis context, and the characteristics of the study setting, namely the wilaya of Bordj Bou Arreridj.

### 1.1. E-marketing in the Pharmaceutical Sector

#### 1.1.1. Definition and Specificities of E-marketing

E-marketing, or digital marketing, encompasses all marketing methods and actions that mobilise digital channels to promote products or services, build customer loyalty, and facilitate commercial transactions (Chaffey & Ellis-Chadwick, 2019). In the pharmaceutical sector, this concept covers a variety of practices whose development remains uneven from one country to another, depending on regulatory frameworks and the dynamics specific to each market.

*Table 1. Main components of pharmaceutical e-marketing*

| Component           | Description                                                                                           | Examples in the Algerian context                                                                |
|---------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Pharmacy websites   | Institutional platforms presenting the pharmacy and its services, sometimes with a product catalogue  | Limited development before the crisis; a few pioneering pharmacies in the Algiers region        |
| Mobile applications | Dedicated applications allowing orders, delivery tracking, and medication-taking reminders            | Virtually non-existent before 2020; emergence of local initiatives during the crisis            |
| Social networks     | Use of Facebook, Instagram, and WhatsApp for commercial purposes (product posts and order management) | The most widely used channel in Algeria because of its free access and familiarity to consumers |
| Home delivery       | Logistical service transporting products to the patient's home                                        | Marginal before the crisis; became a major competitive issue during the pandemic                |

A major specificity of the pharmaceutical sector lies in the singular nature of its product. A medicine cannot be equated with an ordinary consumer good: it is a health product subject to strict safety standards and whose purchase normally requires professional guidance. This particularity profoundly distinguishes pharmaceutical e-marketing from that of other sectors such as clothing or electronics.

Moreover, the relationship of trust between patient and pharmacist constitutes a pillar of the traditional model. The pharmacist provides counselling, monitoring, and support that go far beyond the purely transactional dimension. The integration of digital tools into this relationship therefore raises specific issues concerning the preservation of this essential human dimension.

### **1.1.2. Algerian Regulation of Online Medicine Sales**

The Algerian legal framework governing the online sale of medicines remains characterised by a degree of ambiguity, oscillating between the absence of specific provisions and the existence of general texts that may be interpreted restrictively.

Law No. 18-11 of 2 July 2018 on health constitutes the principal reference. Article 127 stipulates that “the sale of medicines by correspondence or by electronic means is prohibited.” At first sight, this wording clearly excludes any possibility of online sales. Nevertheless, during the health crisis, a degree of tolerance was observed on the part of the authorities, which allowed certain local initiatives to develop in order to ensure continuity of care.

Furthermore, Executive Decree No. 92-285 of 6 July 1992, establishing the conditions for opening and operating community pharmacies, makes no mention of online sales, thereby creating a legal vacuum. At the height of the pandemic, this lack of clarity contributed to the emergence of empirical practices designed to respond to the health emergency.

This situation places pharmacists in a zone of legal uncertainty. On the one hand, they must meet increased consumer demand for remote ordering and delivery solutions. On the other, they remain exposed to possible sanctions if the regulations in force are interpreted strictly. This tension between practical imperatives and regulatory constraints largely shaped the sector's evolution during the crisis.

### **1.1.3. Ethical and Health-Safety Issues Related to Online Sales**

The use of e-marketing in the pharmaceutical sector raises several ethical and health-related issues that must be taken into account.

- a) Product authenticity and quality: online sales increase the risk of counterfeit medicines entering circulation. According to the World Health Organization (WHO), approximately 10% of medicines in low- and middle-income countries are estimated to be falsified. In a digital-commerce context, ensuring traceability becomes more complex, particularly when orders are placed through informal channels such as social networks.
- b) Pharmaceutical counselling: the Algerian pharmaceutical code of ethics (Executive Decree No. 93-194) emphasises the importance of personalised patient support. Without dedicated mechanisms such as tele-counselling or online chat, digital sales risk reducing the pharmaceutical act to a commercial transaction, depriving patients of essential information concerning product use, possible interactions, and side effects.
- c) Health-data protection: medicine orders involve the exchange of sensitive medical information (medical conditions and ongoing treatments). The use of unsecured platforms such as WhatsApp or Facebook Messenger exposes patients to risks of confidentiality breaches and data leakage.

d) Equity of access: digitalisation is not uniformly accessible to everyone. Older people, low-income households, or residents of areas with poor Internet coverage may be excluded from these new purchasing methods. This digital divide raises the question of equality of access to healthcare.

These issues show that pharmaceutical e-marketing cannot be regarded as a simple adaptation of traditional commercial practices. It is an innovation requiring rigorous regulation to guarantee product safety, patient protection, and the quality of the care relationship.

## **1.2. Consumer Behaviour in a Crisis Situation**

### **1.2.1. Theories of Purchasing Behaviour**

The analysis of consumer behaviour is based on a set of theoretical models intended to explain the mechanisms underlying purchasing decisions. Among them, the stimulus-response model (or S-R model), developed by Kotler and Dubois (2016), is particularly relevant to our study. This model distinguishes three components:

- Stimuli: external elements that influence the consumer, notably the marketing mix (product, price, distribution, and communication), as well as environmental factors such as economic, technological, sociocultural, and, in our specific case, health conditions.
- The consumer's black box: the internal processes through which stimuli are transformed into decisions. This dimension includes individual characteristics (age, income, personality) and cognitive processes such as perception, learning, and memory.
- Observable responses: the behaviours actually adopted by the consumer, such as product choice, point of sale, timing of purchase, or, in the context of our analysis, whether or not digital channels are used.

With the health crisis, environmental stimuli intensified to an unprecedented level: movement restrictions, pressure on healthcare structures, rising anxiety, and persistent uncertainty regarding the duration of the pandemic. These factors profoundly influenced the consumer's "black box" and led to new behaviours, including the adoption of pharmaceutical e-marketing.

Other models provide complementary insight. The Theory of Planned Behavior (Ajzen, 1991) emphasises the decisive role of intentions, which are themselves constructed from three elements: attitudes (positive or negative judgement of the behaviour), subjective norms (perceived social pressure), and perceived behavioural control (the estimated ability to perform the behaviour). The use of digital tools to purchase medicines can thus be interpreted through these three dimensions.

### **1.2.2. The Impact of Fear and Health Restrictions on Purchasing Decisions**

The Covid-19 pandemic introduced a decisive psychological factor into consumption behaviour: fear. This emotion, characteristic of a health-threat situation, considerably influenced individual choices. The work of LaTour and Rotfeld (1997) on fear appeals shows that fear can be a powerful driver of behavioural change. In our case, two principal forms of fear played a key role:

- Fear of infection: this encouraged consumers to limit travel and avoid highly frequented places, including pharmacies, which were perceived as potentially risky spaces.

- Fear of supply shortages: this resulted in stockpiling behaviour, particularly visible at the beginning of the pandemic for masks, hand sanitising gels, and certain medicines.

Health restrictions—lockdown, curfews, and movement limitations—reinforced these dynamics by imposing a material constraint that made conventional access to pharmacies difficult. This situation pushed consumers towards alternative solutions, giving rise to a genuine form of “forced innovation.”

Recent analyses, particularly those of Sheth (2020), describe this phenomenon as “pandemic-induced behavioural transformation.” According to this author, major crises produce disruptions strong enough to permanently reshape consumption habits by profoundly disturbing established routines.

### **1.2.3. Emergence of New Consumption Habits: “Constraint” as a Driver of Behavioural Innovation**

An essential contribution of behavioural sciences lies in the idea that consumption habits are generally characterised by strong inertia. Individuals tend to reproduce familiar purchasing patterns even when more efficient alternatives exist, because of switching costs, whether material, cognitive, or psychological.

The health crisis acted as a genuine breaker of inertia. By making the traditional purchasing channel—the physical pharmacy—difficult, risky, or temporarily unavailable, it forced consumers to test new supply methods. This forced experimentation often highlighted the benefits of e-marketing: time savings, no need to travel, the possibility of comparing offers, and greater flexibility.

The concept of “creative constraint,” originating in the sociology of innovation, helps explain this process. An external constraint—here, health restrictions—can paradoxically encourage the adoption of innovations that might have been perceived as too disruptive under normal circumstances. The crisis thus served as a “real-life test” for remote ordering and sales systems that might otherwise have remained marginal.

However, this dynamic raises a central question for our study: to what extent are these new practices likely to persist after the crisis? Research on post-crisis behaviour (terrorist attacks, natural disasters, and health crises) shows that the persistence of change depends on several factors: satisfaction with the new solution, the disappearance or persistence of the initial constraint, and the consolidation of lasting learning. These elements determine whether temporary behaviours become established habits.

## **1.3. The Wilaya of Bordj Bou Arreridj as a Study Setting**

### **1.3.1. Socio-demographic and Economic Characteristics of the Region**

The wilaya of Bordj Bou Arreridj, located approximately 200 km east of Algiers, represents a particularly relevant setting for analysing the adoption of pharmaceutical e-marketing. Its specific characteristics provide a favourable framework for understanding the influence of contextual factors on purchasing behaviour.

*Table 2. Demographic data according to the National Office of Statistics, latest census*

| Indicator        | Data                                                                                |
|------------------|-------------------------------------------------------------------------------------|
| Total population | Approximately 700,000 inhabitants                                                   |
| Density          | Variable: high urban concentration in the provincial capital, scattered rural areas |

|                   |                                                          |
|-------------------|----------------------------------------------------------|
| Age structure     | Relatively young population (median age around 30 years) |
| Urbanisation rate | Approximately 60%                                        |

#### Digital infrastructure

The Internet penetration rate in the wilaya has increased steadily, encouraged by the deployment of fibre optics in urban areas and the expansion of 4G. According to data from the Regulatory Authority for Post and Electronic Communications (ARPT), the number of mobile Internet subscriptions in the wilaya increased by approximately 40% between 2018 and 2021. This development constitutes a decisive prerequisite for the growth and adoption of e-marketing.

#### 1.3.2. The State of the Pharmaceutical Network

The pharmaceutical network of Bordj Bou Arreridj is characterised by generally satisfactory coverage, but with geographical disparities and varying levels of digital equipment.

Number and density of pharmacies: the wilaya has approximately 130 community pharmacies, unevenly distributed:

- A high concentration in the provincial capital (Bordj Bou Arreridj city) and the major daïras (Bordj Ghedir, Ras El Oued);
- Lower coverage in mountainous areas and remote municipalities.

This geographical distribution has implications for access to pharmaceutical products, particularly during periods of movement restrictions.

## 2. Research Methodology

### 2.1. Research Approach

We adopted a qualitative approach in order to understand the meaning that actors attribute to their practices, identify the underlying logic of the behaviours observed, and explore dimensions not covered by the questionnaire. Semi-structured interviews with community pharmacists therefore made it possible to collect their perceptions of the transformations underway, the difficulties encountered, and their vision of the profession's evolution.

### 2.2. Presentation of the Semi-structured Interviews with Pharmacists

As part of this research, we conducted semi-structured interviews with community pharmacists in the wilaya of Bordj Bou Arreridj. This section presents the characteristics of the participants, the conditions under which the interviews were conducted, and the main contextual elements emerging from these exchanges.

As part of this research, semi-structured interviews were conducted with community pharmacists in the wilaya of Bordj Bou Arreridj. This section presents the participants' socio-demographic characteristics, the conditions under which the interviews took place, and the main contextual elements derived from these exchanges.

## 2.3. Presentation of the Interviewed Pharmacists

### 2.3.1. Sample Composition

A total of twelve interviews were conducted between January and March 2022 with community pharmacists distributed throughout the wilaya of Bordj Bou Arreridj. This number of interviews made it possible to reach theoretical saturation. The sample was constituted according to a maximum-variation strategy so as to reflect the plurality of practice contexts observed across the wilaya. The table below presents the main socio-demographic and professional characteristics of the participants.

*Table 3. Summary characteristics of participants*

| Code | Geographical area                    | Area type  | Pharmacy size | Digital services before crisis | Sex | Experience |
|------|--------------------------------------|------------|---------------|--------------------------------|-----|------------|
| P1   | Bordj Bou Arreridj city              | Urban      | Large         | None                           | M   | 15 years   |
| P2   | Bordj Bou Arreridj city              | Urban      | Medium        | Facebook page                  | F   | 8 years    |
| P3   | El Annaser                           | Urban      | Large         | None                           | M   | 22 years   |
| P4   | El Annaser                           | Urban      | Small         | Facebook page                  | F   | 5 years    |
| P5   | Bordj Ghe-dir                        | Peri-urban | Medium        | None                           | M   | 12 years   |
| P6   | Mansoura                             | Peri-urban | Small         | None                           | F   | 7 years    |
| P7   | Mansoura                             | Peri-urban | Medium        | Facebook page                  | M   | 10 years   |
| P8   | Medjana                              | Rural      | Small         | None                           | M   | 18 years   |
| P9   | Medjana                              | Rural      | Medium        | None                           | F   | 6 years    |
| P10  | Ras El Oued                          | Rural      | Small         | None                           | M   | 25 years   |
| P11  | Mountain municipality (Ouled Brahim) | Rural      | Small         | None                           | F   | 4 years    |
| P12  | Bordj Bou Arreridj city              | Urban      | Large         | Website + delivery             | —   | —          |

### 2.3.2. Summary Profile of Participants

Distribution by geographical area:

- Urban: 5 pharmacists (P1, P2, P3, P4, P12)
- Peri-urban: 3 pharmacists (P5, P6, P7)
- Rural: 4 pharmacists (P8, P9, P10, P11)

Distribution by pharmacy size (estimated on the basis of the number of daily customers before the crisis):

- Large (more than 100 customers/day): 3 pharmacists
- Medium (50 to 100 customers/day): 5 pharmacists

- Small (fewer than 50 customers/day): 4 pharmacists

Distribution by gender and experience:

- Sex: 7 men, 5 women
- Average experience: 12.7 years (4 to 25 years of practice)

Level of digital equipment before the crisis:

- No digital service: 8 pharmacists (67%)
- Facebook page (information): 3 pharmacists (25%)
- Website and structured delivery: 1 pharmacist (8%)

### 2.3.3. Recruitment of Participants

The recruitment of pharmacists was conducted according to a rigorous procedure organised in several stages.

- Identification: pharmacists were identified from the official directory of the Directorate of Health and Population (DSP) of Bordj Bou Arreridj, supplemented by exploratory visits conducted in the different areas of the wilaya to ensure comprehensive territorial coverage.
- Initial contact: each professional was contacted by telephone and informed in detail about the objective of the study, which focused on analysing purchasing practices during the pandemic, as well as the participation arrangements, consisting of an interview lasting approximately one hour. No refusal was recorded, indicating a marked interest among pharmacists in the issue under investigation.
- Appointment scheduling: the interviews were then scheduled on the dates, at the times, and in the locations selected by the participants, respecting their professional constraints and optimising the conditions for data collection.

### 2.3.4. Locations and Conditions of the Interviews

*Table 4. Locations and conditions of the interviews*

| Method          | Number of interviews | Observations                                                                 |
|-----------------|----------------------|------------------------------------------------------------------------------|
| At the pharmacy | 9                    | In the pharmacist's office, outside peak hours                               |
| Videoconference | 3                    | For pharmacists living farther away or with particularly demanding schedules |

The interviews conducted at the pharmacy provided an immersive context: observation of the layout, customer flows, and delivery arrangements. These observations were recorded in a field notebook and enriched the analysis. The average duration of the interviews was 62 minutes, ranging from 45 to 90 minutes. Each interview followed the following standard sequence:

- Reception and contextual reminder (5–10 min): presentation of the research, reminder of the confidentiality commitment, and signing of the consent form.
- Interview proper (45–75 min): guided by the interview guide, with freedom of expression granted to the participant.

- Conclusion and thanks (5 min): collection of impressions and request for authorisation for possible follow-up information.

## 2.4. Initial Emerging Themes

*Table 5. Initial emerging themes*

| Theme                                  | Emerging content                                                                                                                |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| The crisis as an accelerator           | All pharmacists agreed on the abrupt nature of the change: “everything changed within a few days” (P3)                          |
| Delivery as the first adaptation lever | Home delivery was the service most extensively developed, often even before digital ordering tools                              |
| Social networks as substitutes         | In the absence of structured solutions, Facebook and WhatsApp served as “technological crutches” (P12)                          |
| The counselling issue                  | A central concern among pharmacists: how can the quality of counselling be maintained remotely without direct contact?          |
| The legal vacuum as a constraint       | The absence of a clear legal framework generated insecurity: “we were navigating by sight” (P10)                                |
| Changing customer relationships        | Perception of a lasting change in the relationship: “customers have become more demanding about availability and delivery” (P1) |

### 2.4.1. Thematic Analysis of the Interviews

The analysis of the semi-structured interviews conducted with the twelve community pharmacists in the wilaya of Bordj Bou Arreridj was carried out using thematic content analysis. This approach made it possible to identify the main themes structuring the professionals' accounts, highlight their internal connections, and reflect the diversity of experiences expressed. We present below the five major themes emerging from this analysis, each divided into sub-themes and illustrated with relevant verbatim excerpts.

#### Theme 1: The Health Crisis as a Sudden “Accelerator” of Transformation

1.1. A sudden and unexpected shift: all interviewed pharmacists agreed on the abrupt and unexpected nature of the changes imposed by the crisis. The expression “everything changed within a few days” recurred frequently, highlighting the lack of preparation for the scale of the phenomenon.

“Frankly, we did not expect it. In March 2020, within one week, everything changed. Customers no longer came as before; they were afraid. And we had to continue providing the service. We had to adapt on the spot, without any instructions.” (P1, urban, large pharmacy)

“It was like an earthquake. Overnight, habits built over 20 years of practice were disrupted. People who came every day at the same time no longer set foot in the pharmacy.” (P3, urban, large pharmacy)

This perception of a radical shift was shared regardless of geographical area and pharmacy size, demonstrating the systemic scale of the shock.

1.2. Emergency adaptation without preparation: almost all pharmacists emphasised that they had to improvise solutions in response to the influx of requests and movement restrictions.

“We did what we could with the resources at hand. No one had trained us for this. We had to learn how to manage orders by telephone, organise deliveries, and continue working normally at the same time. It was very demanding.” (P5, peri-urban)

“At first, it was chaos. Calls multiplied, customers wanted us to deliver everything, and some products were out of stock... We were really navigating by sight.” (P10, rural)

1.3. A paradoxical intensification of activity: several pharmacists reported a paradoxical increase in their activity despite the decline in physical attendance. This phenomenon can be explained by household stockpiling and the expansion of the catchment area through delivery.

“There were fewer customers coming, but they were buying more. Many wanted to stock up, especially on chronic medicines, masks, and gels. The average basket increased significantly.” (P12, urban, large, digitalised pharmacy)

“We felt as though we were working more than before even though there were fewer customers in the pharmacy. It is invisible work: calls, order preparation, and organising delivery rounds.” (P7, peri-urban)

## Theme 2: Home Delivery as the First Adaptation Lever

2.1. A service that became indispensable: home delivery represents the transformation most widely shared by all pharmacists. Before the crisis, this service was marginal and reserved for specific cases (older people and chronic patients). During the pandemic, it became a general customer expectation.

“Before, I might deliver two or three times a week, for older people or families I knew well. During lockdown, it was 20 to 30 deliveries a day. It became a basic service, not an option.” (P8, rural)

“Those who did not offer delivery lost customers. It is as simple as that. People no longer wanted to go out, and they went to pharmacies that could bring products to their homes.” (P2, urban)

Table 6. Diversity of delivery organisational models

| Method                               | Pharmacists concerned | Advantages               | Disadvantages                        |
|--------------------------------------|-----------------------|--------------------------|--------------------------------------|
| Delivery by pharmacist               | P5, P6, P8, P10       | Proximity, trust         | Time, unavailability at the pharmacy |
| Delivery by pharmacy staff           | P1, P3, P7, P9        | Speed, control           | Additional workload                  |
| External providers (taxis, couriers) | P2, P4, P12           | Outsourcing, flexibility | Cost, less control                   |

“At first, I delivered myself in the evening after closing. But it was exhausting. I eventually hired a young man who makes deliveries in his own car. I pay him per trip. It is simpler and allows me to remain at the pharmacy.” (P4, urban)

“I work with a taxi service. My customers call, I prepare the order, and a taxi comes to collect it. It is a little more expensive for the customer, but it is reliable.” (P12, urban, large pharmacy)

2.3. Logistical constraints in rural areas: pharmacists in rural areas (P8, P9, P10, P11) highlighted specific constraints related to distance and the absence of professional delivery services.

“Here, the distances are considerable. I may have to deliver to hamlets 15 or 20 km away. And there are no couriers like in the city. It is me or my assistant who makes the rounds, often in the evening.” (P8, Medjana)

“In rural areas, delivery is not a luxury; it is a necessity. Transport is scarce, and many older people do not have a car. If I did not deliver, they simply would not have access to medicines.” (P11, Ouled Brahim)

### **Theme 3: Digital Tools between Improvisation and Structuring**

3.1. The telephone as the universal transition tool: in the emergency, the telephone emerged as the most accessible and universally used tool. It constituted the first link in digitalisation, even though its use does not strictly fall within e-marketing.

“The first reflex was the telephone. People called, dictated their list, and we prepared it. It was simple; everyone had a phone.” (P5, peri-urban)

“The telephone was the basic solution. Even older people knew how to use it. But very quickly we were overwhelmed with calls. It was impossible to manage.” (P1, urban)

3.2. WhatsApp, the pharmacist's “Swiss army knife”: to compensate for the limitations of the telephone, WhatsApp became the central tool of the digital customer relationship. Its free access, simplicity, and functions (photos, voice messages, and document sharing) made it highly popular.

“WhatsApp became indispensable. Customers send a photo of the prescription; I check it and prepare the order. We can communicate by voice message; it is faster. It became the standard.” (P2, urban)

“I created a WhatsApp group for my regular customers. It allows me to send them information and remind them about available stock. It is a wonderful tool, even though it was not originally intended for this.” (P7, peri-urban)

“WhatsApp is a bit like the pharmacist's Swiss army knife in a crisis. It filled the gap left by professional solutions.” (P12, urban, large pharmacy)

3.3. Facebook, from showcase to commercial tool: the use of Facebook evolved during the crisis. Before the pandemic, only a few pharmacists (P2, P4, P7) used the platform mainly for informational purposes. The crisis transformed these pages into genuine ordering and commercial-communication tools.

“My Facebook page was just to show that I existed and to publish information about opening hours. During lockdown, people started ordering through the page. It forced me to be much more responsive, to publish availability, and answer messages.” (P2, urban)

“Facebook became a real shop. People look at what I post and ask me questions by message. It is more complicated to manage than WhatsApp, but it reaches a wider audience.” (P4, urban)

3.4. The exception of the digitalised pharmacist: only one pharmacist (P12) had developed a structured digital strategy before the crisis (website, application, and partnerships). His testimony illustrates the gap between professional approaches and the improvisation observed elsewhere.

“I invested in a website as early as 2018. Many colleagues thought I was crazy. But when the crisis arrived, I was ready. My online ordering system took over. I even had to increase my delivery capacity.” (P12, urban, large pharmacy)

“The difference is that I have a customer database, computerised monitoring, and traceability. Those who only have WhatsApp cannot reach this level of professionalism. The problem is that most of them cannot afford to invest.” (P12)

3.5. Limitations and frustrations of improvised tools: several pharmacists expressed frustration with using non-professional tools for an activity requiring rigour and traceability.

“WhatsApp is good, but it is chaotic. We receive messages at all hours, we have to respond quickly, requests can be lost, and there is no follow-up. It was not designed for this.” (P3, urban)

“I receive prescriptions through WhatsApp, but then how do I archive them? It is complicated. And there is also the issue of confidentiality. I am not sure it is legal to circulate prescriptions this way.” (P9, rural)

#### **Theme 4: Remote Pharmaceutical Counselling, a Central Challenge**

4.1. The added value of counselling in the pharmacy: all interviewed pharmacists emphasised the importance of personalised counselling as a distinctive element of their profession. This dimension, traditionally associated with physical contact, was challenged by remote sales.

“Our job is not just selling boxes. It is listening, advising, and reassuring. When we sell remotely, we lose this dimension. That is what bothered me most during the crisis.” (P6, peri-urban)

“A prescription is not merely a list of medicines. It is a person with a history, concerns, and particular circumstances. Direct contact makes it possible to capture all of this. Behind a screen, it is more difficult.” (P10, rural)

*Table 7. Strategies for compensating for remote counselling*

| Strategy                | Description                                       | Pharmacists |
|-------------------------|---------------------------------------------------|-------------|
| Telephone follow-up     | Call the customer after delivery to check on them | P1, P5, P8  |
| Detailed voice messages | Send explanations through WhatsApp voice messages | P2, P7, P9  |
| Providing leaflets      | Attach or send information leaflets               | P3, P4, P12 |
| Counselling sheets      | Create documents to send with the order           | P11, P12    |

“For every order, I add a leaflet with precautions for use, especially for new medicines. And I systematically call the next day to ask whether everything is going well. It takes time, but it is essential.” (P8, rural)

“With WhatsApp, I often send voice messages to explain dosages. It is more personal than a written message. The customer can listen again if necessary.” (P7, peri-urban)

4.3. Trust as a central issue: remote counselling rests on a pre-existing relationship of trust. Several pharmacists stressed that the quality of the previous relationship with the customer conditioned the success of the adaptation.

“Customers I have known for years trusted me to order remotely. With new customers, it was more complicated. They needed to come, see me, and talk to me.” (P1, urban)

“Trust is not built on WhatsApp. It is the result of years of presence, counselling, and availability. Those who had worked on this relationship before the crisis resisted better.” (P3, urban)

4.4. An evolving customer relationship: several pharmacists perceived a lasting change in their relationship with customers, marked by a certain “dehumanisation” but also by the emergence of new forms of connection.

“Customers have become more demanding, more consumer-oriented. They want things to be fast and delivered, and they compare prices and services. The relationship is less personal than before.” (P1, urban)

“I have the opposite feeling. With WhatsApp, I am in contact with my customers much more often. I know them better. It is different, but it is not less personal.” (P7, peri-urban)

### **Theme 5: Vision of the Future and Lasting Transformations**

5.1. A transformation considered irreversible: the majority of pharmacists believe that the changes observed are lasting and that there will be no return to the previous situation.

“We will not go back. Customers have discovered the convenience of remote ordering and delivery. They no longer want to do without it. It is an acquired benefit.” (P2, urban)

“The crisis removed a barrier. Now people know that it is possible. Even those who were reluctant before have tried it. It is a profound transformation.” (P7, peri-urban)

5.2. An evolving profession: pharmacists perceive a transformation of their profession, which now incorporates new skills (managing online orders, logistics, and digital communication).

“Today, being a pharmacist is no longer just about knowing how to advise. You also need to know how to manage a Facebook page, organise delivery rounds, and respond to WhatsApp messages. The profession has become richer.” (P4, urban)

“Some colleagues struggle to keep up. But I see this as an opportunity. A pharmacist who does not adapt will lose market share. It is an inevitable evolution.” (P12, urban, large pharmacy)

5.3. Necessary investment: several pharmacists stressed the need to invest in tools and skills to make these practices sustainable.

“We need to professionalise what we did in an emergency. WhatsApp was useful as a stopgap, but it is not sustainable. We need genuine, secure, integrated online ordering solutions.” (P1, urban)

“I have started training in digital marketing. It is an investment, but it is the future. Young pharmacists entering the profession are already trained in this.” (P3, urban)

5.4. Concerns for pharmacists who have not adapted: conversely, some pharmacists expressed concern for colleagues who were unable or unwilling to adapt.

“There are colleagues, especially older ones, who have not changed their habits. They continue as before. But I fear customers will gradually abandon them.” (P7, peri-urban)

“In rural areas, we have fewer choices. But even here, people compare. If one pharmacy delivers and the other does not, the choice is quickly made. Adaptation has become a matter of economic survival.” (P8, rural)

5.5. The need for public action: finally, several pharmacists called for public authorities to support this transformation.

“Public authorities must take responsibility. Clarify the law, support digitalisation, and help pharmacies that want to invest. We cannot leave everyone to manage alone.” (P12, urban, large pharmacy)

“There should be an official, recognised, secure platform, like what exists for medical appointments. Pharmacists could connect to it. It would solve many problems.” (P3, urban)

### **3. Conclusion of the Thematic Analysis**

- The thematic analysis of the interviews conducted with pharmacists in Bordj Bou Arreridj reveals several major findings:
- The crisis acted as a sudden accelerator of transformation, imposing emergency adaptations in a context of uncertainty.
- Home delivery became the structuring service of adaptation, with organisational arrangements varying considerably according to geographical areas.
- The digital tools used remain largely empirical, with WhatsApp and Facebook dominating a landscape characterised by the absence of professional solutions.
- Remote pharmaceutical counselling constitutes the central challenge, with varied compensatory strategies but a shared concern about preserving the quality of the relationship.
- The legal vacuum generates persistent insecurity, tempered by tolerance from the authorities but calling for clarification.
- The transformations are considered lasting, with an evolution of the profession perceived as irreversible by the majority of pharmacists.

### **4. Discussion and Implications**

The thematic analysis of the interviews conducted with pharmacists in Bordj Bou Arreridj highlighted the dynamics of adaptation in the pharmaceutical sector in response to the health crisis. This section discusses these findings in relation to the theoretical framework presented in the first part, draws implications for the various stakeholders (pharmacists, public authorities, and consumers), and identifies the limitations of the study and avenues for future research.

#### **4.1. Discussion of the Findings**

##### **4.1.1. The Crisis as an Accelerator: Confirmation of the Stimulus-Response Model**

The findings of our study confirm the relevance of the stimulus-response model (Kotler & Dubois, 2016) for analysing behavioural changes in the pharmaceutical sector. The Covid-19 crisis constituted an environmental stimulus of exceptional intensity, combining:

- Objective stimuli: movement restrictions, lockdown, and closure of non-essential businesses;

- Psychological stimuli: fear of infection, anxiety, and uncertainty.

These stimuli entered the “black box” of consumers and pharmacists, generating new behavioural responses. The recurring expression among pharmacists—“everything changed within a few days”—illustrates the disruption caused by this stimulus to established routines.

Our study provides specific insight into a sector in which behavioural inertia is traditionally strong. Community pharmacy, because of its strict regulation and the sensitive nature of its products, constitutes a case study for observing how an external constraint can break resistance to change.

#### **4.1.2. Constraint as a Driver of Behavioural Innovation**

The concept of “creative constraint” discussed in our theoretical framework finds a concrete illustration here. Health restrictions, by making the traditional purchasing channel unavailable or risky, forced pharmacists and consumers to explore alternative solutions. Several mechanisms explain this dynamic:

*Table 8. Constraint as a driver of behavioural innovation*

| <b>Mechanism</b>                             | <b>Illustration in the interviews</b>                         |
|----------------------------------------------|---------------------------------------------------------------|
| Removal of the traditional alternative       | The impossibility of travelling made delivery indispensable   |
| Discovery of the benefits of the new channel | Pharmacists noted that customers appreciated the time savings |
| Formation of new routines                    | Several pharmacists believe that going back is impossible     |

This phenomenon is consistent with Sheth's (2020) work on pandemic-induced behavioural transformations. The author argues that major crises create “windows of opportunity” for adopting new practices by temporarily suspending habitual resistance. However, our study qualifies this optimistic view. Although constraint did accelerate adoption, it also led to technological improvisation (WhatsApp and telephone) that does not necessarily constitute mature digitalisation. Constraint encouraged innovation, but often in an empirical and unstructured form.

#### **4.1.3. Pharmaceutical E-marketing: Between Improvisation and Professionalisation**

One of the major findings of our study is the gap between observed e-marketing practices and what the academic literature normally designates by this term. Pharmaceutical e-marketing in the wilaya of Bordj Bou Arreridj is characterised by:

*Table 9. Characteristics of pharmaceutical e-marketing in the wilaya of Bordj Bou Arreridj*

| <b>Dimension</b> | <b>Observed practice</b>      | <b>Theoretical reference</b>                                |
|------------------|-------------------------------|-------------------------------------------------------------|
| Channels used    | WhatsApp, Facebook, telephone | Absence of professional websites or dedicated applications  |
| Methods          | Empirical, unstructured       | Absence of a formalised marketing strategy                  |
| Traceability     | Low or even non-existent      | Difficulties archiving prescriptions                        |
| Data security    | Concerning                    | Circulation of sensitive information on unsecured platforms |

This situation can be explained by several factors:

- The absence of professional solutions adapted to the Algerian context;
- The legal vacuum discouraging structural investment;
- The economic constraints of small and medium-sized pharmacies;
- Emergency responsiveness favouring rapid solutions over sustainable ones.

#### 4.1.4. Remote Pharmaceutical Counselling: A Theoretical and Practical Issue

The issue of remote counselling constitutes an original contribution of our research. The literature on pharmaceutical e-marketing often addresses transactional aspects (ordering and delivery) but deals less systematically with the counselling dimension. Our findings show that this dimension is central to pharmacists' perception of their profession. The recurring expression “our job is not just selling boxes” reflects a professional identity defined to a large extent by personalised counselling.

#### 4.1.5. Territorial Specificities: Bordj Bou Arreridj as a Case Study

Our study highlights the importance of territorial factors in analysing pharmaceutical e-marketing practices. The wilaya of Bordj Bou Arreridj presents characteristics that influenced the dynamics observed:

*Table 10. Dynamics observed in Bordj Bou Arreridj*

| <b>Territorial factor</b> | <b>Observed influence</b>                                              |
|---------------------------|------------------------------------------------------------------------|
| Urban/rural duality       | Disparities in access to digital services and delivery arrangements    |
| Industrial base           | Presence of customers with higher incomes and better digital equipment |
| Pharmaceutical density    | Concentration in urban areas and under-density in rural areas          |
| Digital infrastructure    | Uneven development of 4G and fibre optics                              |

These findings confirm the importance of a territorialised approach to analysing consumption behaviour, which cannot ignore local specificities. They invite us to relativise claims about the homogenisation of digital practices and to take account of contextual diversity.

## 4.2. Theoretical Implications

### 4.2.1. Contribution to E-marketing Theory

- The specificity of the health product: a medicine is not an ordinary consumer good. This specificity requires e-marketing models to be reconsidered so that they incorporate dimensions of health safety and professional counselling.
- Technological improvisation as a mode of innovation: in contexts of weak institutional structuring, digital innovation may follow empirical paths, using mass-market tools such as WhatsApp for professional purposes.
- The articulation between physical and digital channels: our findings confirm that the binary opposition between pharmacy sales and online sales is insufficient. An omnichannel relationship is emerging, in which channels combine and complement one another.

## **Conclusion**

This research aimed to analyse pharmaceutical purchasing practices during the Covid-19 crisis in the wilaya of Bordj Bou Arreridj, focusing on the integration of e-marketing tools in response to health restrictions and fear of infection. The study, based on a qualitative approach and conducted through semi-structured interviews with 12 community pharmacists, produced several key findings.

First, the health crisis acted as a genuine catalyst for transformation in the local pharmaceutical sector. Faced with movement restrictions and customers wishing to avoid public spaces, pharmacists had to implement, on an improvised basis, remote ordering and home-delivery arrangements. Within a few weeks, these adaptations profoundly changed long-established professional practices and consumption habits.

Second, the digital tools mobilised were more indicative of technological improvisation than of a structured digital strategy. WhatsApp, Facebook, and telephone calls served largely as the main ordering supports because of the absence of professional solutions and suitable legal frameworks. Although effective in an emergency, these practices now present limitations in terms of traceability, data security, and service sustainability.

Third, remote pharmaceutical counselling proved to be a major issue. Aware of the importance of their proximity-based role, pharmacists developed alternative strategies—follow-up calls, voice messages, and counselling sheets—to maintain the personalised dimension of care despite the imposed distance.

Finally, most pharmacists believe that these transformations are likely to last. The crisis removed previously persistent resistance, and new practices (remote ordering and delivery) are expected to continue, although their future structuring remains to be defined.

In conclusion, this research, centred on pharmacists' lived experience, provides a relevant local perspective on an accelerated transformation of the pharmaceutical sector in a crisis context. It also opens avenues for further research, particularly a quantitative survey of consumers to assess the scale of behavioural changes, as well as extending the study to other wilayas in order to obtain a more comprehensive view of national dynamics.

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