THE DETERMINANTS OF TRUST IN DRUG: RELATION PHARMACEUTICAL-PHYSICIAN LABORATORIES

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ABSTRACT

The relationship "pharmaceutical-medical laboratory" is a concept little explored in marketing. This research allows identifying the main antecedents of the institutional trust in the relation pharmaceutical-physician laboratories. The results of a survey of 220 medical specialists show that the reputation of pharmaceutical laboratories and the experience are a antecedent of the doctors trust in the drug.

Keywords; Relation Pharmaceutical-Physician Laboratories, Trust in Drug, Reputation, Experience

INTRODUCTION

A study, conducted in France, indicates that more than 130,000 hospitalizations directly attributable to drugs occur each year and that the average length of hospitalization is 9 days, which clearly means that the side effects are serious. The survey even goes so far as to point out that the number of deaths in France due to drugs is between 8,000 and 13,000 per year[1] In recent years, a series of drug-related health crises has accentuated health problems. Such health crises have tarnished the brand image of pharmaceutical laboratories in the eyes of doctors. When prescribing medication, doctors have to take into consideration the risks and side effects of drugs. However, with the pressure of competition and the risk of disappearing from the market, pharmaceutical companies race to increase their financial profitability by selling as many of their products as possible.

Today, "*the medication industry suffers from a trust paradox observable between the nobility of the mission to save lives and the suspicion cast on its medication-related operations*". Accordingly, the role of pharmaceutical companies has shifted towards restoring trust with healthcare professionals. This amounts to building and strengthening trust of doctors towards drug. To better develop this "*laboratory-doctor*" relationship, this study proposes to model trust between pharmaceutical companies and doctors.

The concept of trust has been the subject of several marketing studies and researchers have emphasized its important role in relationship marketing. Indeed, trust is a very broad and ambiguous construct, and it varies depending on research contexts, trust is known as a cornerstone of any exchange relationship.

The relationship marketing literature has identified three research streams that examined the concept of relationship. The first strand focuses on the nature of relationships and their evolution. This strand consists of studying strategic marketing from a strategic point of view. The second strand highlights the behavioural dimensions bearing on relationships, like customer stress, reciprocal commitment and trust, as these variables play a central role in developing an

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effective relationship (Doney & Cannon, 1997; Morgan & Hunt, 1994). This research strand focuses on trust in a supplier/seller relationship. The third strand explores relationship outcomes, such as customer satisfaction, perceived quality and relationship duration (Paulin et al, 1997).

This present study bears on such a relationship perspective and examines the behavioral mechanisms affecting relationships in the pharmaceutical sector. Indeed, previous relationship marketing research has extensively studied industrial marketing. However, a rather limited number of studies has focused on studying trust towards medication. In this regard, this study examines the role of trust in a pharmaceutical company-doctor relationship. Specifically, it aims to identify the factors and determinants of trust towards medication.

Review of the literature

In an effort to reconcile the different accounts on the construct of trust, marketing research has identified two types of trust, one interpersonal, and the other institutional (Sirdsmukh et al., 2002; Kennedy et al, 2001; Doney & Cannon, 1997). Interpersonal trust "*involves a relationship between two natural individuals, in a business context, it informs the state of the relationship between industrial or service buyers and sellers*" (Ochi, 2006). Institutional trust is "*the willingness to rely on the reliability and benevolence of a trusted party in a risky situation*".

The pharmaceutical-doctor relationship is a relationship between an organization and an individual. Research in this area has named this type of trust as institutional trust Doney & Canon, 1997). Institutional trust represents a niche of industrial B to B marketing research, yet it remains a concept that is little studied (Gatfaoui, 2005), its application in management research is more recent (Gatfaoui, 2007) and it is approached as a cognitive process. In the 1990s, this concept evolved and was conceived as a conceit in the relationship between companies and customers.

In an industrial context, building trust reports to a process of creating, developing and maintaining a relationship between a customer and an institution. Indeed, laboratories that wish to establish a lasting relationship based on knowledge and customer identification (health professionals) do so mainly through honesty and reputation.

Trust in medication is a very delicate concept, like the drug itself, and covers a variety of dimensions. Dimensions of medication have been defined by pharmaceutical companies as a specific consumer product (MA, benefit/risk ratio, dispensed in pharmacies), high-level research, mandatory information (mandatory packaging, information for professionals, etc.), an industry subject to strict regulations and rules, and companies that integrate societal concerns (environment, public health, etc.). Bearing on these attributes, and on a review of the literature on consumer behavior, trust in drug has five dimensions: drug reliability, investment, information transparency, social responsibility and medical supplier credibility. Accordingly, this study proposes to measure general trust in medication within a pharmaceutical company-doctor relationship.

The first empirical study on the factors of institutional trust was developed by Doney and Cannon, (1997). According to their results, reputation, size, opportunistic behavior, information sharing and duration of the relationship contribute to institutional trust. For company size and opportunistic behavior, these two variables will not be taken into consideration in our study.

This study is a qualitative exploratory study designed using a set of semi-structured interviews conducted with a sample of 14 doctors. The aim to determine the factors explaining development of trust in a medical environment. The results of this study allowed us to identify

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laboratory reputation and professional experience as factors explaining doctors' trust in a drug (Ayeb & Ben Rached, 2017).

Corporate Reputation

Supplier reputation is defined as the extent to which companies and people in the industry believe that the supplier is honest and concerned about its customers (Doney & Cannon, 1997). Firm reputation, as experienced by its stakeholders, is critical as it reduces transaction costs, and positively influences the firm's bottom line (Shapiro, 1983) and it directly bears on customer variables such as consumer trust and loyalty Roberts & Dowling, 2002; Rose & Thomsen, 2004). Loyalty is presented as an important factor in the success of businesses. It infuses trust in investors, which is why manager's rally to ensure that reputation is consistent over time (Nguyen & Leblanc 2001).

Under this perspective, reputation is an important dimension influencing trust formation. The relationship between reputation and trust has been the subject of several marketing studies. Indeed, several authors Caruana et al., (2004); Nguyen et al., (2008); Doney & Cannon (1997); Gardberg & Fombrun (2002); Fombrun & Rindova (2000) have emphasized the importance of this relationship in industrial marketing claiming that it is the most significant variable (Akrout & Akrout, 2011).

Previous research Gardberg & Fombrun (2002); have suggested that firms with a positive reputation have a competitive advantage and are likely to attract more customers.
Bearing on the above proposals, the following hypothesis is formulated:

H_1 *Pharmaceutical companies' reputation has a positive impact on doctors' trust in a drug.*

H_2. *Reputation has a positive impact on drug reliability*.

H_3. *Reputation has a positive impact on investment in innovation*.

H_4 *Reputation has a positive impact on information transparency*.

H_5 *Reputation has a positive impact on medical suppliers credibility*.

H_6. *Reputation has a positive impact on corporate social responsibility*.

Experience

The distinguished three dimensions in the notion of experience. "The first dimension relates to the individual. The second highlights collective workers, i.e. collective knowledge, human capital, which can take the form of a work yard, a company or a factory. The third dimension focuses on collective bargaining and uses the notion of professional experience as a basis for collective recognition of a right to seniority.

This study subscribes itself to the first dimension. Accordingly, we assume that an experienced person is the one who can claim competences to their practice of a professional activity. According to Gharb (1998), experience "*represents the history of practical interactions between the individual and the product or activity and the information attached to it*".

It allows customers to assess quality of a product and/or a service (Gatfaoui, 2005). The concept of work experience has been addressed in several areas of consumer behavior such as information quality, trust formation and development, satisfaction and decision making.

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However, empirically, this concept has not been studied in the context of other consumer and marketing concepts such as choice, attitudes, consumer satisfaction, or brand equity (Schmitt, 2010).

The marketing literature has found that trust develops and increases over time (Donney & Canon, 1997). Indeed, trust is likely to be affected by experience and interaction with an individual (Gulati & Sytch, 2008). Furthermore, personal experience will, in each case, change perceptions, attitudes, and intentions of the end customers in a significant way (Salo & Karyaluoto, 2007). While assessing some factors explaining trust, previous experience is signaled out (Gulati & Sytch, 2008). Then, recognition of the endogenous nature of institutional trust has led some researchers to postulate that direct experience is, at times, necessary to assess and ensure a partner's willingness to engage in a trustworthy behavior (Arrow, 1974; Sako, 1991). Gulati & Sytch (2008) found that previous experience is likely to affect the measurement of trust between firms. The knowledge-based concept of trust develops over time through experience and interaction with a partner (Ben Naoui, 2014)

In the medical field, trust in medication does not only bear on product quality, but also on knowledge and experience. The literature highlighted the importance of experience in explaining and developing trust. Therefore, our second hypothesis is formulated.

H_1 *Experience has a positive impact on doctors' trust in a drug.*

H_2 *Experience has a positive impact on reliability.*

H_3 *Experience has a positive impact on investment in innovation.*

H_4 *Experience has a positive impact on information transparency.*

H_5 *Experience has a positive impact on supplier credibility.*

H_6 *Experience has a positive impact on corporate social responsibility.*

The conceptual model of the study Figure 1 is constructed to study and determine the causal relationship between the reputation of pharmaceutical companies, experience and doctors' trust in a drug.

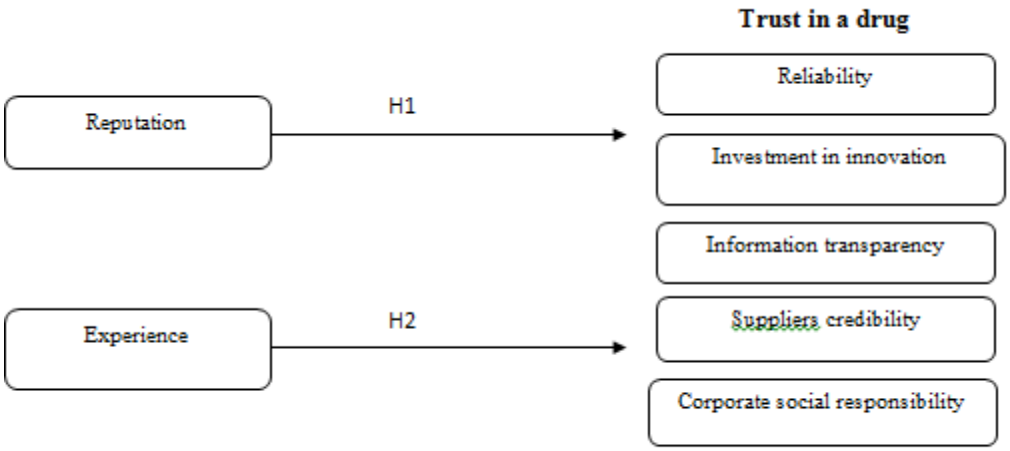

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FIGURE 1

CONCEPTUAL MODEL

RESEARCH METHODOLOGY

In this section, we present the research methodology used to operationalize the studied variables and to validate the different measurement instruments.

The Sampling Method

This study examines a set of data collected face-to-face from a convenience sample consisting of 220 Tunisian doctors. The sample consists of (46.4%) males and (53.6%) females; 59% of them operate in the private sector; and 41% in the public sector. Our variables were measured using multi-item measurement scales known for their validity and reliability (Peter, 1979).

To measure the construct of trust in medication, we adopted five-dimension scale: trustworthiness, investment in innovation, information transparency, supplier credibility, and social responsibility. Each dimension consists of 6 items, except "*information transparency*" which has 9 items. Each item is evaluated by a six-point Likert-type scale (1: strongly agree; 6: strongly disagree).

To measure reputation of pharmaceutical companies, we used the Doney and Cannon's (1997) scale. This scale includes 3 items, the third of which is inverted, and is measured by a 7-point Likert scale ranging from 1 "*strongly agree*" to 7 "*strongly disagree*".

To measure professional experience in terms of doctors' seniority in the medical field, we used the interval scale of Nilson et al., (2013). As a follow-up step, we tested the psychometric quality of our measurement scales. The final drug trust measurement scale included 33 items. After several purification analyses, it was reduced to 20 items. The items that were eliminated have a relatively low psychometric quality.

After purifying our measurement scales, we proceeded to a confirmatory analysis in order to study our latent variables. We used the structural equation method, which allows for introducing several variables to be explained in the same analysis and for studying the causal relationships between the independent and the dependent variables (Roussel et al., 2002). In addition, we estimated the parameters of our model using the Partial Least Square (PLS) method. The choice of this method suits our sample size of 220 doctors.

Results

The confirmatory analysis allowed us to test the validity of the hypothesized relationships (Roussel et al., 2002). Indeed, factor loadings of the items vary between 0.6122 and 0.9670, an exception is the information transparency item, INF2: "*information available on the package of a drug is clear and understandable*". Then, eliminating this item would improve convergent validity (Fornell & Larcker, 1981). However, a second PLS-based CFA allowed us to conclude that factor loadings of the items are satisfactory and good (between 0.68 and 0.98). According to Evard et al., (2003), internal validity (reliability of the scales) is respected if it meets the following conditions:

Jökersberg's rhô should be greater than 0.7(Chin, 2000) and Cronbach's Alpha should be

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greater than 0.7 (Chin, 1998). The results of these estimates affirm that these conditions are met.

Moreover, Fornell & Larcker (1981) indicate that for a measurement model to be valid it's convergent and discriminant validity should also be checked. Convergent validity coefficients of our model are satisfactory AVE> 0.5 Table 1. And discriminant validity conditions are met (AVE of each variable is greater than the square correlation of all other latent variables) Table 2. Therefore, we can conclude that our measurement model is valid.

Table 1
THE CONVERGENT VALIDITY OF CONSTRUCTS

Constructs	AVE	CR	Alpha de Cronbach
Reputation	0,664	0,8920	0,8634
Experience	1,000	1,000	1,000
Reliability	0,6433	0,8973	0,8923
Investment in innovation	0,6884	0,9432	0,8674
Information transparency	0,6970	0,9122	0,7822
Suppliers credibility	0,6656	0,8962	0,8469
Corporate social responsibility	0,7922	0,8989	0,8671

Table 2
THE DISCRIMINANT VALIDITY

Constructs	Corporate social responsibility	Suppliers credibility	Experience	Reliability	Information	innovation	Reputation
Suppliers credibility	0,0503	0,815					
Experience	0,1759	0,3376	1,0000				
Reliability	0,2683	0,1121	0,1200	0,8020			
Information	0,0671	0,3921	0,0685	0,0383	0,834		
innovation	0,1635	0,0231	0,2562	0,0952	0,1486	0,8296	
Reputation	0,2803	0,0988	0,0492	0,1342	0,1344	0,1874	0,8148

The results of the structural model analysis show that explained variance as well as predictive validity are satisfactory. However, our model has a GOF= 0.46 which is higher than 0.36, indicating that our model fit is good (Tenenhaus et al., 2004; Wetzels et al., 2009) Table 3.

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Table 3 THE RESULT OF THE HYPOTHESIS TEST			
Hypothesis	**B**	**T value**	**Acceptance/Rejection**
expérience -> RSE	0,1645	2,2224**	Acceptance
expérience-> credibility	0,4385	3,6422**	Acceptance
expérience -> reliability	0,1589	1,9456*	Acceptance
expérience -> information	0,0731	0,8083	Rejection
expérience -> innova	0,2771	2,934**	Acceptance
reputation -> RSE	0,2824	3,618**	Acceptance
reputation -> credibility	0,8479	1,7822*	Acceptance
reputation-> fiabilité	0,1809	1,9451*	Acceptance
reputation-> information	0,1491	1,833*	Acceptance
reputation -> innovation	0,3239	1,8922*	Acceptance

*Seuil de 10% ; **Seuil de 5%.

DISCUSSION

The results of our study allowed us to conclude that reputation of pharmaceutical companies perceived by doctors exerts a positive and significant effect on doctors' trust in a drug. This finding provides a better understanding of how different dimensions of drug trust can be influenced by reputation of pharmaceutical companies. In this study, reputation of pharmaceutical companies can affect doctors' trust in a drug. Today, pharmaceutical companies should seek to build up the pharmaceutical-doctor relationship through their reputation (honesty). Faced with a very tough competition and to be able to meet patient needs, pharmaceutical companies should integrate the concept of trust into their corporate strategies in order to reassure and retain doctors to prescribe their medication.

In addition, the results on the causal relationship between work experience and trust in a drug indicate that there is a partially positive relationship. Several studies have shown that experience has a positive effect on trust. For example, Doney & Cannon (1997); Gulati & Sytch (2008) highlighted that a relationship between two parties takes time. Trust development often depends on a direct experience with the company and its suppliers (Donney & Cannon 1997).

On the other hand, hypothesis H_2.3, assuming that experience does not have a significant impact on information transparency, was rejected. Such a finding can be explained by the fact that initial trust is based on information (McKnight et al., 1998). Moreover, given that our sample consists of doctors who are experts and competent in the medical field, as a result, doctor trust is still in its developmental and maintenance stages. Therefore, the rejection of this hypothesis replicates the conclusions of McKnight et al., 2002).

The results also contributed in identifying and empirically modeling the relationship between pharmaceutical laboratories and doctors. Two contributions are highlighted. The first is managerial and bears on the evolution of the pharmaceutical sector and more specifically on a context of a health crisis. The second is theoretical, which is modeling the concept of trust which is not well defined in the field of health marketing.

From a management point of view, this study identified the levers on which pharmaceutical companies should act in order to develop a sustainable trust-based relationship with doctors. As a recommendation, pharmaceutical companies are called upon to optimize the benefits of managing their relationship with doctors. Indeed, pharmaceutical companies need to leverage efforts to convince doctors to prescribe their medication. It is therefore strongly

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recommended to reassure them and to create a climate of trust for them. Customer trust can also increase significantly when the company is perceived as having a good reputation (Doney and Cannon 1997; Jarvenpaa et al., 1999).

Laboratories should communicate well with their doctors on the attributes of their products and the company, namely: drug reliability, information transparency and clarity, investment, supplier credibility and social responsibility.

This study showed the benefits of exchange within a sustainable relationship between pharmaceutical companies and doctors. The results allowed us to highlight the role of reputation of pharmaceutical companies, which has a positive effect on doctor trust in a drug.

Nevertheless, the study has some sample-related limitations. It would be interesting to conduct a study on a specific medical specialty with a specific company profile.

ENDNOTES

[1]https://www.senat.fr/questions/base/2009/qSEQ090709333.html

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