The Emotional States of the Consumer in Stores: The PA (Pleasure-Arousal) Adapted to the Algerian Context

Sabrina ELBACHIR* and Abderrahmane CHENINI

University of Mascara, Algeria

The purpose of this paper is the proposal of a scale for measuring emotional states experienced within a point of sale, for non-English speaking consumers. Since the validity of the measuring instruments may affect the relevance and quality of managerial decisions, the development of a sufficiently reliable measurement that take into account the specificity of a country becomes necessary. Following a literature review that allowed us to highlight existing measuring instruments of emotional states and their disadvantages, we have developed a measurement scale based on two emotional dimensions: pleasure and arousal (stimulation). Following the Churchill Paradigm, the results of our analysis show that the reliability and construct validity of our scale were improved.

Keywords: Emotional States, Pleasure-Arousal, Stores, Verbal Measures, Measurement Scale

JEL Classification M310

1. Introduction

Few years earlier, many researchers have demonstrated that it was important to understand the emotional reactions of consumers (Batra and Ray 1986; Derbaix and Pham, 1991; Babin and Darden, 1994; Hui, Dubé and Chebat, 1997). Research on emotional reactions and their measurements have induced real progress since the polemical article by Zajonc (1980) which has argued for the primacy of the affect (Derbaix and Poncin, 2005).

For Westbrook and Oliver (1991), 'emotion is indeed a primary source of human motivation, since it exerts a substantial influence on the memory (via its psychological manifestations) and on the thought processes'. According to these authors, the most emotional aspects of consumption experiences occur with greater or lesser magnitude in virtually all consumer situations, which is a promising field of study for research specializing in consumer behavior. For Batra and Ray (1986), introducing affective states deepens the analysis since it helps to go beyond cognitive assessments of the good or bad nature of the stimulus. Mirral (1994) adds that the stimulus is not evaluated sequentially, analytically or objectively (cognitive evaluation) but subject to

Sabrina Elbachir. PhD Student in Marketing, Faculty of Economics, Commercial and Management Sciences, University of Mascara, Algeria.

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^{*} Corresponding Author:

an overall estimate, holistic or subjective (affective evaluation). Display quotations of over 40 words, or as needed

Moreover, empirical research in stores showed that commercial environments provoke emotional responses (Machleit and Eroglu, 2000). The latter influence the customer's purchasing behaviour (time spent in point of sale, number of purchases made, communication with employees, intention to purchase or return) (Donovan and Rossiter, 1982; Babin and Darden, 1994; Attaway, 2000; Yalch and Spangenberg, 2000; Lemoine, 2001). Beside this, the affect also influences the perceived value, satisfaction and store image (Plichon, 1999; Babin and Attaway, 2000; Yalch and Spangenberg, 2000). These numerous studies show the importance of seeking to know and measure the different emotional reactions experienced by consumers in stores.

When it comes to measurement scales of emotional states, this domain is widely dominated by the works of native english speaking researchers. Yet, the adaptation of these scales has shown its limits for studies that occur in non-English speaking countries (Drungeon-Lichtlé, 1998; Plichon, 1999), especially in terms of reliability and validity (Lichtlé and Plichon, 2004). Indeed, these scales, elaborated by psychologists do not ensure that they are appropriate to a commercial environment. Moreover, they do not always allow taking into account the particularities and diversity of emotional states felt by consumers in stores.

Therefore, the aim of this paper is the proposal of a scale for measuring emotions felt in the point of sale as far as the Algerian consumer is concerned. Considering that the latter is linguistically and culturally different from consumers on which the Pleasure-Arousal scale of Mehrabian and Russell (1974) was developed and applied. Our research is part of a no 'ethnocentrism' approach (Samiee and Jeong, 1994), not taking for granted that these are universal measuring transcripts.

2. Theoretical Framework

2.1. The Development of Affective Measures

According to Filser (1996), it is important to introduce the affective dimensions in the study of consumer behaviour because 'decision analysis in areas such as leisure shows the limitations of behavioural models that take into account only the cognitive dimensions of consumption.'

For Derbaix (1987): 'the emotional reaction is characterized by its whole, irrevocable character, instant, disrupting, by somatic changes it generates and encountered difficulties in its verbal description.' Two years later, and still in the purpose of clarification of the concept, Derbaix and Pham (1989, 1991) speak of a 'full emotional'. This concept expresses the emotional reactions experienced by consumers from exposure to a stimulus. It is therefore a reaction experienced by consumers and triggered by a target stimulus. The 'full emotional' emanates from the consumer or rather his perception or his mental representation of the stimulus (Derbaix and Poncin, 2005). Following Pieters and Van Raaij (1988), Derbaix and Pham (1989) identified seven categories of affect on a continuum from pure affective states (emotions, disconnected from cognitive background) to affective states retained by cognition-affect sequence attitude (Pietr, 1998). These categories are classified in order as follows:

- Emotions;
- Feelings;
- Mood (According to Tines and Lempereur (1984), the mood is 'instinctive emotional disposition giving moods a pleasant or unpleasant tone');
- Temperament;
- Preference;
- Attitude;
- Appreciation.

In this logic introductory of affective variables, Holbrook (1986) offers an expanded pattern of consumption behaviour, by representing the nature of this behaviour and incorporating all the phenomena that can occur during a consumption experience. He propounds the model 'TEAV - Though, Emotion, Activity, Values.' 'Though' corresponds to dreams, imaginary, fantasy; 'Emotion' means all forms of feelings, behaviours and physiological expression (muscle tension, brain activity ...) 'Activity' to introduce the physical and mental events related to the actions and reactions; and 'Values' to refer to evaluative judgments (Löfman 1991).

TEAV model assumes that consumption experiences are complex processes and suggests interdependencies between its structures. From there, the traditional sequence 'CAB' (cognition, affect,

behaviour) which treats consumers as 'rational' human beings who make purchase decisions after collecting information and considering all alternatives, should be replaced by the emotional sequence 'CEV' (conscience, emotion, value) (Holbrook and Hirschmann, 1982). The definition of consciousness was developed by Hilgard (1980). His model introduces all the states of the unconscious awareness (belief, dreams, imagery, mental processes, and unconscious fantasy). In this model Holbrook (1986) makes use of the environmental psychology (Mehrabian and Russell, 1974), to emphasize the subjective perceptions and emotions, which result from the interaction of consumer and the environment. As suggested by Holbrook (1986), man is not a machine (CAB model), man is an animal governed by emotions.

The role of emotion in consumer's behaviour and also in the consumer's decision process is demonstrated in other works following the publication of the article of Holbrook (1986). Among these works, there as those of: Milliman (1986), Holbrook and Anand (1990), Holbrook and Gardner (1994), Kellaris and Kant (1991), Kellaris and Rice (1993).

2.2. The Concept of Emotion and the Definition of Emotion

Following the turning point that began in the eighties, marked by an explosion of scientific work on emotion, emotion is now considered a key factor in explaining human behaviour (Wehrle and al., 2000; Izard and King, 2009; Coppin and Sander, 2010). Hence, it seems important, in any area of research that focuses on the behaviour of the individual, as is in marketing, to consider the theories and concepts of emotion.

It has been shown that emotions can direct decision making without the individual being aware of it, and affect reactions and behaviours (Davidson, Scherer and Goldsmith, 2003). Emotions influence the body of the individual, the contraction of facial muscles, the electrical activity of the brain, systems of blood circulation and breathing (Graillot, 1998). These changes affect the perceptions, memory (France, Shah and Park, 1994; Walliser, 1996), thought and imagination, the actions of a person, and even the personality development (Izard, 1977).

Generally, the emotion is defined as a brief state, intense, difficult to hide. It is a response of the body to the unusual circumstances of the environment (Darpy, 2007). To account for the diversity of emotions, some researchers propose lists of basic emotions (discrete approach of emotions): joy, anger ... On the contrary, others defend the idea that emotions result from combination of dimensions. In this sense, every emotion is characterized by its 'details' on each dimension and therefore, it is difficult to identify emotions called 'pure' (continuous approach of emotions).

- The discrete emotions. Izard (1991) identifies ten fundamental emotions that interact (as primary colors mix): interest and joy (positive emotions), anger, disgust, contempt, shame, guilt, sadness and fear (negative emotions) and surprise (neutral emotions).
- The continuous emotions. These emotions results from a combination of dimensions that can be represented on a pin system. This will provide a pleasure/displeasure and quiet/exciting axis (Russell and Pratt, 1980). For Mehrabian and Russell (1974) all emotions can be characterized by their degree of 'pleasure' (positive or negative) and degree of 'arousal' (also known as 'Stimulation', which can be strong or weak). Each emotion is associated to two coordinates in the plan formed by the stimulation (arousal) and pleasure.

The continuous emotions approach includes the pleasant and exciting emotions (exultation), the pleasant and calm emotions (quietude) unpleasant and exciting emotions (distress) and unpleasant and calm emotions (boredom).

2.3. The Measurement of Emotions

Despite the existence of a multitude of theories, they all agree to recognize that the emotional response is a multidimensional construct with four dimensions to remember; the realization by the individual, the direction (polarity), intensity and content (Derbaix and Pham, 1989). The latter factor has three components (Izard, 1979) which require the use of different measurement methods (Detbaix and Pham, 1989). These factors are:

(1) Neurophysiological and biological component. Buck (1984) refers to it as emotion 'I'. It concerns the mechanisms of adaptation and maintenance of homeostasis via the endocrine system and the autonomic nervous system (Derbaix and Poncin, 2005). It is the subject of physiological measures such as: heartbeat, electrodermal responses ...;

- (2) An expressive component. Buck (1984) refers to it as emotion 'II'. It concerns the spontaneous expression of emotional state. It is measured through observation, the study of body movements, and voice or facial expressions;
- (3) An experiential subjective component, which Buck (1984) refers to it as emotion 'III'. It is measured through verbal and/or pictorial report.

It is this last component that uses verbal measures that are based on emotional adjectives presented as semantic differential. It is the most common method in marketing. These items (emotional adjectives) are typically subjected to factorial analysis procedures to detect common factors summarizing them (Derbaix and Poncin, 2005). The measure that matters in our work is the experiential subjective one.

3. The Research Methodology

Measuring emotional states of consumers in stores is quite different from an author to another. These include for example:

- Yalch and Spangenberg (1990), Bourdeau (1997), Groppel-Klein (1998) and Geuens (2004) used the PAD scale of Mehrabian and Russel (1974);
- Donovan and Rossiter (1982), Yalch and Spangenberg (1993), Greenland and McGoldrick (1994), Areni, Sparks and Dunne (1996), and Lemoine (2001) worked with the PA dimensions of Mehrabian and Russell (1974);
- Herrington (1993) used the scale of Russell and Pratt (1980);
- Sibéril (1994) created its own scale by transforming the two dimensions identified by Russell and Pratt into four items

As part of this research, we developed a scale to measure emotions around the concepts of pleasure and stimulation, and this for several reasons:

- 1. The adaptation of measurement scales of emotions from English speaking areas has shown its limits (Drungeon-Lichtlé, 1998; Plichon, 1999), especially in terms of reliability and validity (Lichtlé and Plichon, 2004). A multicultural study showed the difficulties in translating vocabulary expressing emotional reactions. This study that took place in six different countries (Belgium, France, Switzerland, Italy, Great Britain, Canada, and Netherlands) shows that if we can find in different cultures the same words to express emotional states, their frequency varies considerably (Van Goozen and Frijda, 1993);
- 2. The scale of Mehrabian and Russell (1974) can be confusing. Indeed, some items are similar and seem repetitive;
- 3. When the PA (Pleasure-Arousal) is used in English, it is easy to find the two dimensions and good Cronbach alphas. However, when the PA is submitted in other languages (including French and Arabic), it is difficult to find two dimensions. To illustrate this, Chebat Gelinas-Chebat and Filiatrault (1993) point out that trying to find the factor structure of the scale, lead to four dimensions: pleasure (32.5%), stimulation (18,2%), dominance (14%) and being 'asleep' vs. 'awakened' (9%). Similarly, Drugeon-Lichtlé (1998) notes that the stimulation dimension consists only in two bipolar items which are: edgy-cool and nervous-apathetic. Therefore, it seems that there is a problem on this scale;
- 4. Several items on PAD scale developed by Mehrabian and Russell (1974) seem incomprehensible to respondents. The term 'apathetic' is complex and poorly understood. To say that a person is full of hope is a bit strong in a shopping context. Moreover, terms such as 'relaxed / bored' are not really opposites (Rieunier, 2000);
- 5. The French translation (French being the second principal language in Algeria) does not give the same results according to researchers. Bourdeau (1997) translated one of the items as 'relaxed vs bored' while Drugeon (1998) translated the same item as 'being entertained vs getting bored' If we just compare the words 'relaxed' and 'be entertained', they do not have the same meaning;
- 6. The introduction of Mehrabian and Russell's scale is not easy to assimilate. It is usually formulated in this way: 'Each pair of words below describes an emotional state. Some of these pairs can possibly appear a little unusual, but you should definitely feel closer to a state than the other ... For each pair, check the box next to the adjective that best describes your emotional state towards the atmosphere of the store. Thank you for taking your time to get to write your emotional state'. For Rieunier (2000), it does not seem obvious that clients understand what an emotional state towards the atmosphere and do not confuse it with their attitude towards the store;

- 7. It is better to offer a short scale to consumers, because they do not necessarily have much time to devote to the investigation;
- 8. Algerian culture is very different with the Arab-Berber background, the French colonialism history and for which traditions and values tend to persist; it would be interesting to see what adjectives are used to express the emotions felt in such an environment.

For these reasons, the decision to develop a scale to measure the emotional states was taken. Therefore, we follow the Churchill paradigm. Churchill (1979) developed a methodological approach. It aims to integrate knowledge about the theory of measurement and appropriate techniques to improve it in a systematic procedure. It thereby allows building rigorously measuring instruments for multi-scale questionnaires type (Benraiss and Peretti, 2001). According to Gregory (1995), this approach provides the best measures in marketing, because at each step, the researcher uses specific investigative techniques. It has been widely used in marketing (Amin, 1993; Evrard and al, 2003; Laurent and Kapferer, 1986; Bearden and al, 1999; Parasuraman and al, 1990).

3.1. Domain of Construct

To specify the domain of construct, it is important to recall the definitions of the two dimensions of 'pleasure' and 'stimulation'. Pleasure 'reflects the degree of well-being of the person,' or various feelings such as happiness, contentment or satisfaction. Stimulation (Arousal) translated 'the degree of awakening and activation'. It refers to how the individual feels excitement in its environment (Mehrabian and Russell, 1974).

3.2. Generate Sample of Items

In this step, which is part of the exploratory phase described by the paradigm of Churchill, we generate statements to build the questionnaire. For that, we first considered the existing measures (Tremblay, 1991; Milkovich and al, 1996), then we conducted a qualitative study; textual analysis from semi-structured interviews with a sample of 60 consumers after they leave clothing stores of a shopping mall in the city of Algiers during the months of April and May 2015.

First, the literature review allowed us to bring together all of the vocabulary used in:

- 1. The pleasure scale of Mehrabian and Russell (1974), Russell and Pratt (1980) and Yoo, Park and MacInnis (1998);
- 2. The stimulation scale of Mehrabian and Russell (1974) and Russell and Pratt (1980).

The sample selection for the 60 semi-structured individual interviews was conducted to allow us to get different opinions; Consumers who were interviewed, were different from age perspective, place of residence... We have identified and listed all of the vocabulary used to express pleasure and stimulation experienced in relation to the atmosphere of the stores. The table below lists all the adjectives used by consumers.

Table 1. Summary of the vocabulary used by consumers

Pleasure	Arousal
Pleasant (14) ^(a)	I was calm (15)
Feeling good (17)	Quiet (4)
Feeling comfortable (8)	Reassured (3)
I was satisfied (14)	Energetic (4)
Content (11)	Stressed (6)
Happy (2)	Annoyed (8)
Bored (3)	Relaxed (10)
Very good release (6)	Tired (5)
Anxious (1)	Dynamic (1)
Confident (1)	Stimulated (2)
Embarrassed (2)	Amused (1)
Zen (2)	Safe (2)
Disappointed (2)	Curious (2)
Depressed (2)	
Delighted (2)	
Relieved (12)	
Pessimistic (2)	
Comforted (1)	

⁽a) Figures in parentheses are the numbers of consumers who have used this vocabulary.

This first phase gives us a list of 31 items. It is important to have several items in order to subsequently achieve all the desired statistical treatments and purify the scale. We will summarize the adjectives used in the anterior emotions scales and those used by consumers on our research.

Table 2. The whole vocabulary used to express emotional states (b)

Discours	
Pleasure	Stimulation
Happy	Intense
Unfortunate	Inert
Content	<u>Stimulated</u>
Dissatisfied	Sleepy
Satisfied	Active
Unsatisfied	aimless
Gay (welcomed)	Living
Sad (upset)	Lazy
Full of hope	Excited
Hopeless	Relaxed (quiet)
Been entertained (relaxed)	Annoyed
Have got bored (bored)	Casual (serene)
Unknown	Energetic (full of energy)
Seduced	Calm (quiet)
Excited	Nervous (restless)
<u>Delighted</u>	Without energy
Relieved	(lethargy)
<u>Pessimistic</u>	Awakened
Comforted	Reassured
Feeling no good	<u>Safe</u>
Proud	<u>Curious</u>
Beautiful	Empathic (peaceful)
Disagreeable	Asleep (relaxed)
Pleasant	Energetic
Repulsive	Slow
Nice One	<u>Stressed</u>
Uncomfortable	<u>Tired</u>
Angry	<u>Dynamic</u>
<u>Nice</u>	<u>Amused</u>
Feel good	
Feel comfortable	
<u>Anxious</u>	
Zen Zen	
<u>Disappointed</u>	
<u>Depressed</u>	

⁽b) The words written in bold are those used in previous scales. The underlined words are those used by consumers. Words that are both in bold and underlined are those used in the measurement scales and by consumers.

Adjectives that have priority for our scale are those that have been both used in previous scales and by consumers. However, if we analyze Tables 1 and 2, we can see that it is possible to distinguish two types of adjectives: those which truly qualify an emotional state and those which qualify rather an evaluation of the store. This conducts us to this scale:

Q: Please indicate your level of agreement with the following statements:

Today in the	Strongly	disagree	Neither agree	Agree	Strongly
store, I feel	Disagree		nor disagree		Agree
Нарру	1	2	3	4	5
Content	1	2	3	4	5
Satisfied	1	2	3	4	5
Relaxed	1	2	3	4	5
Annoyed	1	2	3	4	5
Anxious	1	2	3	4	5

Stimulated	1	2	3	4	5
Nervous	1	2	3	4	5
Calm	1	2	3	4	5
Energetic	1	2	3	4	5

3.3. Collect Data and Purify Measure

The scale obtained was administered to a convenience sample of 76 people as a first gathering data. Customers from different clothing stores were interviewed at the end of their visit.

The data obtained were processed in 4 steps:

- 1. Examine the values of KMO and Barlett tests, as they measure the adequacy of the sample for factorial analysis (Malhotra, 1993).
- 2. PCA analysis with oblimin rotation. Then, we verified that the variable is related to a factor (<0.5), and if it has good commonality (<0.5) (Edvard, Pras and Roux, 2003)
 - 3. After treatment, we verified that the factorial analysis explain at least 60% of the variance.
- 4. Finally, alpha Cronbach of each dimension of the scale is calculated, and analyzed in terms of its value to be greater than 0.6. However, it is noted that Cronbach's alpha is mechanically pulled down when: (1) each factor has a small number of items and / or (2) Each item is measured on few degrees. These two conditions are filled up in this research since our scale contains 10 items that are evaluated on 5 levels. It is therefore not surprising that the alphas obtained are low. Furthermore, when a scale is in the development stage, a Cronbach's alpha equal to 0.5 may be acceptable (Nunnally, 1978; Rieunier, 2000).

Before performing the first analysis tests, on our scale, the item 'energetic' was removed. This has created some misunderstanding among people. As well as confusion was manifested by consumers on two items 'happy' and 'content'. For many, these adjectives express the exact same thing. We therefore withdraw the 'content' item.

Barlett test (p = 0.00) and KMO (0.623) give satisfactory results and indicate that the scale is factored. The table below shows the correlation matrix between the first two factors emerged from the factorial analysis with oblique rotation.

Table 3. Matrix of correlations

	Factor 1	Factor 2
Factor 1	1.00	
Factor 2	-0.10	1.00

The correlation coefficient between the axes is moderately high. A factor analysis with oblimin rotation was therefore carried out.

Table 4. PCA analysis with oblimin rotation

Items	Dimension 1	Dimension 2
Нарру	0.696	0.297
Satisfied	0.825	0,015
Relaxed	-0.476	0.794
Annoyed	0.75	-0.29
Anxious	0.75	0.20
Stimulated	-0.255	0.843
Nervous	-0.17	0.757
Calm	-0.355	0.753
% Of explained variance	42,01	20.54
Alpha Cronbach	0.80	0.72

Factorial analysis above reveals the existence of two dimensions: the first one reflects a state of pleasure close to good mood while the second dimension reflects a state of stress 'activation/stimulation'.

The obtained Alpha Cronbach gives us an indication of the fidelity of the scale for each of the identified dimensions. The results we get are very good for an exploratory study, which means that the scale has good internal consistency.

However, a second data gathering was conducted on a sample of 192 consumers to ensure that our measurement scale keeps the same psychometric properties as our first sample.

Items	Pleasure	Arousal	
Нарру	0,869	0,301	
Satisfied	0,847	-0,49	
Relaxed	-0,447	0,78	
Annoyed	0,646	-0,375	
Anxious	0,913	-0,211	
Stimulated	0,14	0,773	
Nervous	-0,447	0,594	
Calm	0,391	0,709	
% Of explained variance	44,714	15,95	
Alpha Crophach	0.72	0.64	

 Table 5. PCA analysis with oblimin rotation

Factor analysis allows finding the structure and reliability of the scale as our first test on our first sample had highlighted. Nunnally (1978) recommends an alpha greater than 0.6 to decide on the reliability of measurements. Our values are greater than 0.6 indicates that our scale is reliable enough.

4. Conclusion

Considering that the emotional reactions experienced by the consumer on stores are in the field of experiential marketing, we find the idea that the job of the distributor is no longer limited to the sale of products; it must also seek to improve the framework and conditions of selling. To this end, one solution may be to play on the emotions that may experience a consumer. It is well-known that retail environments are sensory, and they create emotional reactions, the measurement scale of emotional states could be used to evaluate the effectiveness of their environment.

This paper has attempted to clarify the status of the concept of emotion by highlighting the difficulty in finding, among the existing measures, a scale used directly in a non-English-speaking context. The aim was also to provide a first test corresponding to the emotions felt by the Algerian consumer. Beyond the fact that this measuring instrument would reinforce the instrumental validity of our research in many areas such as: the study of in-store behavior, the analysis of satisfaction or the product choice process at the sales point, it would have many managerial implications. In addition, affects felt in a store could contribute towards building the retailer's identity. Affective states seem to be an effective way of positioning brands and therefore retail names.

A comparison of the dimensions revealed by our empirical study with some original Anglo-Saxon scales allows us to highlight certain commonalities. In particular, we find two dimensions of PAD Scale (Mehrabian and Russell, 1974). The scale also reflects the customer perception (evaluated through face-to-face method). Furthermore, being developed in Algeria, it does not suffer from translation problems faced by most scales form Anglo-Saxon contexts.

Finally, this scale is short and therefore easy to administer in stores. If one of its limits is to contain only eight items whereas exploratory study has used much more. This limit reflects the complexity of the construct.

However, the results must be interpreted with caution due to the limitations related to the exploratory research. The participants in this study are all residents of the Algerian Capital area; the small sample size cannot be generalized. Also, we focus on only two emotional dimensions. Yet emotional states felt in a store can be understood in several other dimensions.

Other qualitative and quantitative phases are needed to confirm or refute these results, integrate the concept of emotions to a more global model and test the convergent, discriminant and predictive validity of the scale. 'In order to be able to identify which atmospheric elements do influence affective reactions in stores. It is necessary to use a measuring instrument which is both efficient and adequate' (Derbaix and Poncin, 2005) with respect to the local context. It may be interesting, not only from the point of view of marketing practices, but also from that of any field related to the valuation of human experience. It has been noted by Badot and Filser (2007) that, such an approach can also contribute towards providing more stable grounds for the attempts

at re-enchantment seen in shopping malls. It would also be interesting to link up emotions felt at a sales outlet to consumers' various shopping scenarios (Kaltcheva and Weitz, 2006).

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