

## EFFECTIVENESS AFFECTS SALES BEHAVIOUR.

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**Abstract:** The gestural behavior influence on salesperson's achievements shows skills impact (for good, average, weak salesperson's groups) on gestures number. Quantitative studies based on Main Components Analysis, Averages Tests, Manova Tests, Newman Keuls Test, Khi-2 test, Factorial Analysis indicate gestures importance on good salesperson's and opposite results obtained for weak or average salesperson's. This study, built on 1205 gestures, 382 sales calls, for an average 11 minutes length, 191 salespersons, 90 doctors, 6 judges on pre-test, with 304 average achievers salespersons, 39 high achievers and 39 low achievers is bringing a new material for marketing and opens new training fields in this area.

**Key words:** sales, salespersons, situation, stress, calm, achievement, gestures, behavior, negotiation, negotiator.

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## **Main Text**

Researches on verbal communication are numerous while few efforts have been done on non verbal communication. Our research brings elements which may improve this field. The theoretical frame puts the emphasis mainly on achievements. Four hypothesis associate achievement, gender and situation variables with gestures such as hands, eyes and glances, legs and feet. The sample chosen, we define our criteria, evaluation and selection methods. The experimentation defines doctor and judges panels. Results offer a correlation analysis, rank achievers, define factors and show achievement variables interaction. Numerous tests and factorial analysis give some indications, in order to validate or not, hypothesis.

## **INTRODUCTION**

The research in sales and marketing achievements has been currently conducted with classical models, such as Churchill, Ford, Walker (1993) works. They have been among the first one to introduce this model, considered as a real sales achievement tool. Later, they recognized that their measurements have not been able to explain a large percentage of variations in sales achievement. Some others researchers were interested on subjects such as “lack of listening in sales” or “salesperson’s communication apprehension” ( Boorum, Goolsby, Romsey, 1998; Aguilar, 2006) or “sales adaptivity” (Trappe, Tullis, 2005) or “salesperson’s communication qualities” (Cronin, 1994; Nuel, 2008). On the other hand, lack of researches about salesperson’s non-verbal communication gave us a chance to introduce a new approach on salesperson’s gestural behavior. We have tried to answer questions on achievement influence on salesperson’s gestures. It was important to measure this influence, because researches about salesperson’s communications were only interested by verbal language. We measured

variables impact in order to increase achievement. The best targets are salespersons who wish to improve their achievement with their clients, sales managers favoring sales efficiency or personal managers trying to get a clearer perception from their interlocutors.

#### THE THEORETICAL FRAME

Churchill Ford and Walker (1993) examined a few factors. When they considered the “aptitude” (sex and empathy, sociability, aggressive and dominance), they realized that this factor did not give a good explanation of achievement variations. When they studied the variable “personal, organizational and environmental”, they confirmed, “our studies have presented little success in identifying characteristics associating sales attitudes and sales achievement”. It seems that Churchill’s model was too general for salespersons, confronted with immediate results, expected from their management.

The most interesting works on sales achievement, in marketing theory, are empirical salesperson’s adaptivity studies of Spiro and Weitz, (1990) and Trappe Tullis, 2005. They show that sales achievements result mainly from their capacity to create and modify messages during an interactive communication, with their clients. These results, confirmed by searchers majority (Moulinier 2005; Bercoff, 2007; Corcos, 2008) consider two important factors as success keys in sales achievement: communication sense, in general (Webster, 1968, Michaux, 2007) and salesperson’s communicator talents, in particular (Cronin, 1994 ; Grikscheit, 1979 ; Souni, 2005). Boorum, Goolsby and Ramsey (1998) study underline research absence on communication capacity in adaptative selling. They also consider that searchers show sales communication importance as an axiom. Different researches (Delahahaye, 2005, Vélu, 2007) seem to demonstrate that salesperson’s are not communicative persons: they would speak too

much, would not listen to their clients (Neveu, 2008), would not speak at the right time (Butler, 1996, Geisler, de Monicault, Person, 2004). Boorum, Goolsby and Ramsey, 1998) have explained this lack of achievement by their Communication Apprehension (AC), a bad feeling felt by salespersons. A better achievement training, a cognitive modification and an improvement in selling process could improve it. Their other criteria, Interaction Implication (II), would permit to develop a better client listening, a better empathy and a capacity to find flexible solutions (Di Gaeteni, 1982; Benito, Combes, Filleau, 2005). Factors limits rest on a limited choice of their research field: insurance. Some other works, such as François Delivré (1995, 2005), prefer to work on «Process Communication Management» (PCM). Each salesperson would have a psychological and personal assessment and would be close to one on six personality types (Perseverant, Dreamer, Promoter, Work alcoholic, Rebel, Empathic). Each personality would privilege different “doors”. Paul Ware, mentioned in Khaler (1989) has distinguished three doors: “thought door, feeling door and action door”. PCM used to add another door: “opinion door”. Each one of us would prefer to pass under one door and avoid carefully passing under others. A “work alcoholic” would prefer to enter in relation by the thought door (intellectual discussion), where a salesperson would prefer the action door (to act), but would resist passing thru the thought door.

#### VARIABLES TO STUDY

The indicators are representing variables on which is built our research. We are working with following variables " gender, situation" and “achievement” associated with “explained variables”. We consider differences observed for variables. Then, studying differences between group’s achievements, we realized that different achievement groups produced different non-verbal behavior. We continue our research by examining

three groups achievements and gestures associated to achievement types.

*The influence of feminine gender* on gestures has been evoked by authors such as Julienne (1997), Vandecappelle, (2005) gestural seduction influence by Scheflen and Scheflen (1972), women natural attraction power by Descamps (1989), Porot, (2004).

*The influence of masculine gender* on gestures has been evoked by authors such as Cook and Lalljee (1972), on men smiling efforts, in positive situations by Davis and Weitz, (1981) on legs mobility by Drosdowska in Descamps (1989).

*The influence of stress situations* on the gestures has been detailed by Albert (1994), Hamon, Lézin, Toullec, (2004) for auto contacts in stress situations (example of auto contacts: hands contacts, neck, nose, legs...), by Montagner (1978) for body tensions.

*The influence of calm situations* influence on gestures has been studied by Ellsworth (1975), Mehrabian (1972), Guillaume-Hoffnung, (2005): calm situations relax bodies, Collignon (1994): calm situations relax arms, Mac Govern (1981): positive feeling releases head mobility. These gender and situations variables presented in the literature permitted to settle assumptions.

#### ASSUMPTIONS ASSOCIATED WITH ACHIEVEMENTS

The literature synthesis establishes indications permitting to propose hypothesis.

#### *ACHIEVEMENT AND GENDER (WOMEN, MEN).*

The gender is associated, in numerous works, to hands movements. Authors have observed these types of relations. Their studies ( Rimé, 1982; Lannoy and Leyn, 1973, Chabreuil, Chabreuil, 2005) show a dominant gestures number, for efficient women, in persuasive situations.

Assumption (H1) is the following:

« *In persuasive situations, a good saleswoman expresses more hand movements than a*

*good salesman (H1) »*

*ACHIEVEMENT AND SITUATION (STRESS, CALM)*

We shall consider hands, glances and eyes, feet and legs.

### *Hands*

Different approaches made by authors have permitted to associate from numerous articles (underneath), some privileged relations between situation and “hands” variable.

These relations can be translated the following way:

Stress--→Higher hands mobility
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Calm--→ Lower hands mobility
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Literature about hands (Rosenfeld, 1966; Rimé, 1982, Paraschiv, 2004), shows a gesture increase for good salespersons in stress situations. Less efficient salespersons offer a lower gestures number in case of trouble (Rimé, 1982). Some other researches show that situation influence hands mobility (Lannoy, Leyn, 1973; Pooler, Pooler, Farney, 2004). Assumption (H2) “*Hands mobility, for a good salesperson increase in stress situations*”(H2).

### *Eyes*

Researchers underline relation importance between eyes and situations. These privileged relations for good salespersons are described by Edelman and Hampson (1981), Hildenbrandt and Fritzerald (1978) and Thayer (1977). Another study showing less clearly relations with stress but underlines a status aspect (Ellyson, Dovidio, Carson 1998; Legrand, Martini, 2008). It seems that stress would encourage a dominated salesperson to look more often a dominating client. The documentary analysis drive us to the following Assumption (H3):

*“A good salesperson increase glances number more often in stress situation than in calm situation (H3).”*

### *Feet and legs*

Feet and legs mobility literature study permitted to find relations between legs and different explaining variables. Among those, situation variables (stress particularly) were considered dominant. Works synthesis shows the strong impact of stress situations on legs (Davis and Weitz, 1981; Duncan and Fiske, 1977, Combes-Lebourg, 2005) for good salespersons. For example, the discussion between two sales interlocutors starts with high legs mobility, depending on situation type. For Schlosberg (1954), the stress situation produces a great legs mobility. Even if, for Ariès (1981) and Sadik-Rozsnyai, Pinon (2004) stress blocks leg mobility. The documentary study permits to present the following Assumption (H4):

*« During sales calls, stress situations provoke, for good salespersons, a greater legs movements number, than in quiet situations (H4). ».* While our hypothesis is set, we are organizing our experiment and starting by the sample choice.

## MATERIAL

### *THE SAMPLE CHOSEN.*

This chapter defines the criteria used in order to select the individuals participating to our experience. These criteria were established during two tests of a quarter of an hour each. Candidates are graded on five sales potential factors presented by main authors. We did not consider Weitz, Castleberry and Tanner (1992) criteria because selling does not depend only on sales knowledge, but also on a selling diplomacy potential. Our approach differs from Knowles, Grove and Keck (1994), who prefers a sensitive and perceptive tendency. Our choice includes five criteria, selected among many authors, cited

underneath. These criteria are the information, the diplomacy, the patience, the humor, and the organization. The information is called " an exchange chance" by Lax and Sebenius (1995), " preparation " by Audebert Larochoas (1995). The diplomacy is called "common action" by Kissinger " (1979). The patience is called "conciliation" by Audebert Larochoas (1995), or "conflictual element perceived" (Lax and Sebenius, 1995). The humor is called " surprise " by Audebert Larochoas (1995). The organization is called "relations between actors, chances of success" by Audebert Larochoas (1995). Each criterion corresponds to a sales competence.

The information must be presented clearly, the diplomacy moderates a client aggression, the patience moderates the salesperson's enthusiasm, the humor helps to get out from difficult situations, the organization helps to build a good sales calls management. Attitude scales from 0 to 7 measure these criteria during a 50 sales calls pre-test. Our selection criteria keeps candidates presenting a grade from 4/7 to 7/7 on each of the 5 criteria. The selection has permitted to keep 64 % candidates from 597. Chosen individuals were 382 individuals, ranging 18 to 22 years old with 20 years old average age, a BA, an average 2 years selling experience, living in Paris suburban area. These individuals are chosen among a group of young salespersons trained by a business school. These salespersons have been selected on socio-professional criteria with results obtained during tests. This sample being presented, we can study our experience map in order to define different research spaces ( tableau n°1).

The experience map permits to find twelve factors combinations and to visualize the research field. The gender, the situation and achievements are explicative variables.

Tableau N°1: experience map.

	<b>Achievement</b>		
	Strong group	Average group	Weak group
<b>Gender</b>			
Women	I	V	IX
Men	II	VI	X
<b>Situation</b>			
Stress	III	VII	XI
Calm	IV	VIII	XII

Gestures are variables to explain such as hands, feet and legs, eyes.

## METHODS

### *THE EXPERIMENTATION*

Medical information was supplied by each salesperson presenting one product, chosen among specialties, from two hundreds largest pharmaceutical companies. Salespersons have stayed a 30 minutes maximum in the doctor's office, in order to inform him about innovations. Practically, sales calls were finished after an average 11 minutes. It corresponds to usual sales calls timing and pharmaceutical institutions experience.

### *Doctors panel*

Doctors are medical students in their 6 th year. A script defines their role. These doctors, helped by some pharmaceutical laboratories, know salesperson's practices and work currently with them. These 96 doctors intervene during 382 sketches. We required such a large number of doctors, in order to avoid habits. Each doctor meets 4 different salespersons from different dyads (men-women, men-men, women-men, women-women). Doctors and salesperson's had to read their role, in a folder, before playing it. Salespersons used a grid, where each action is mentioned: their prescription, their usual approach and their possible behavior. Doctors have to apply a situation, their own

prescription and habits. Doctors considered, here, as clients, listen to the salesperson and can prescribe, if they consider that sales have been good. If sales calls do not answer to their expectation, they will not prescribe. This evaluation is built on three grades Q, F, C. Q indicating the information quality transmitted, F indicating the individual reliability given to the salesperson and C the capacity to convince an interlocutor. The main components analysis underlines variables different roles for each group (strong, average and weak). It shows that sales achievement (strong, average and weak) is associated to sales actions, prescription and satisfaction measurement. Doctors effect is reduced, because the process is indicated and role are set in advance.

#### *Judges panel*

Each salesperson is exposed to Doctor's observations that checked gestures expressed during sales calls. These gestures have been selected by judges. They were 6. Estes (1991) researches have shown that for 50 observers, only 10 were able to control efficiently variables to observe. We have selected, in same proportions, best observers. They checked gestures on a 50 role-plays pre-test with 50 candidates as judges. Measurement tools confidence have been validated because gestures selected by judges were almost the same, as those observed by the other judges, with a very weak percentage of conflict (4,9%), due to little chance to interpretation and descriptive facts only. They intervene in case of disagreement between doctors on gestures observed.

#### SALES CALLS CONCEPTION.

Sales calls are conceived in order to offer best selling conditions to salespersons. Then, a good objectives definition for each one (salesperson's, judges, doctors) has permitted to optimize operations. The research is concentrated on gestures occurrence and their number, in order to show gestures differences, between individuals. These differences

are examined between gender and situations associated to achievements in a time process: month M, the salesperson is confronted to a certain situation or gender for each achievement and one month later, M+1, to another situation, gender, achievement. This two steps analysis and this month difference constitute an innovation in front of researches, already presented by Descamps (1989). This innovation is accentuated by role plays number which usually do not go over 60 in past researches, compared to our 382 calls and length of their sales calls, which do not exceed 2 minutes (Despuech and Valensi and Drosdowska in Descamps, 1989) for past studies, to be compared to an average 11 minutes, in our research. This quantitative comparison underlines efforts value presented in this research.

#### *ACHIEVERS CHOICE.*

The whole operation is representing 382 sales calls in different situations: 191 stress situations, 191 calm situations for 191 men and 191 women. Calls are divided in 3 groups: average group (304 sales calls), strong group (39 calls), weak group (39 calls). These two 39 calls latter groups (high or weak achievement) are representing an average deciles of 382 sales calls. This decile choice is discussed by Maubert (1990), Whiting (1995), Auzouy (1995) and Darmon (1998). These books show that best salesperson's are representing a small salespersons group's percentage (around 10%). This means that for 382 sales calls, we have chosen 10%, around 39 high achievement calls, because we wanted to be selective. Taking 20 % could have been risky because our high achievers impact would have been diluted and differences would have been less visible. The same approach goes for the weak group, for which we take 10 %, meaning 39 weak sales calls. The remaining 304 sales calls are considered to be done, by average achievers. We have not chosen to consider 20 best or 20 weakest, because we had an important

sales calls number and it was easier to work on quantitative researches with 39 people rather than 20.

#### *METHODS*

The salesperson achievement analysis will detail and explain precisely our statistical work. We start by best, average and weak salesperson's group constitution, evaluated by doctors. Then, we work with a Main Components Analysis in order to define what represents and explains significant variables, in strong, weak and average groups. This achievement level is defined by "information quality" transmitted by salesperson's, "salesperson's reliability", "capacity to convince". We continue by a gender, situation and achievement Manova analysis related to gestures number. Then, we examine differences between averages, by a test of Newman Keuls. The Khi-2 test permits to evaluate gestures statistical significance. The multiple correspondences factorial analysis reduces variables number and summarizes information by measuring variables contribution to axis explanation.

#### *THE CORRELATION MEASUREMENT.*

Results analysis is built on 2 following rules:

- Individuals have been distributed equally and by odds. Women and men profiles are defined, during the pre-test.
- Gestures number expressed during negotiation is measured.

A ventilation of these gestures has been realized on salesperson's achievement. Salesperson's achievements are measured with grades established by doctors. These results permit to establish a salesperson ranking and an attribution to strong, average and weak groups. Grading has been established as follows.

### *Achievers grading*

Grades, given by doctors, consider three variables, measured on a scale from 0 to 7 (the best salesperson can obtain, for example, 21/21, the weakest can obtain 0/21). Three variables chosen are the following:

#### “Information quality transmitted” (Q)

This variable choice imposed itself because it corresponds to professional pharmaceutical industry and institutions requirements. The information quality shows the presentation type, means used for information selection. Some authors have underlined such variables importance in their researches (Lezin and Toulec, 1993; Gabillet, 1994, Perrotin, Loubere, 2005)

#### “Reliability to the salesperson” (F)

A salesperson tries to transmit a fiable information. In order to succeed, he (she) will give facts, number or references, easy to verify or check. This information crossed with external factors will permit to validate information transmitted to doctors. The speech reliability helps to create a confidence climate with clients. Confidence constitutes a main salesmanship settlement (Darmon,1993; Bromberger, 1993; Auzouy, 1995; Zeyl and Dayan, 1996; Gelfand, Brett, 2004).

#### “Salesperson capacity to convince interlocutors” (C)

This variable has been considered because it constitutes a decision factor in the purchasing act. Main books consider conviction as a key element in sales process (Schuler, 1995; Macquin, 1993; Lauféron, 2008)

### *Achievers ranking*

Salespersons call on doctors and inform them about product innovations. They are participating to 382 sales calls for this research. The distribution between the strong,

average and weak groups has been presented. The doctor evaluates each salesperson on three variables basis Q, F and C measuring different dimensions. Salespersons are ranked in groups, corresponding to grades obtained. We study, underneath, correlations between Q, F and C in a Main Component Analysis.

Main achievement factors correlation

With 382 individuals, total population, a Main Component Analysis shows, herewith, correlations between variables. We analyze positions, individuals importance, contributions and correlation circles (Saporta, Bouroche, 1993). We have, at first, analyzed main variables factors, for all groups together, then for strong and weak salespersons. Factors choice number in the Main Component Analysis has been made by Kaiser criteria. Values obtained are presented on tableau 2.

Tableau 2: Main Components Analysis values.

	Value	Percentage	Cumulated
1	1,4526	48,42	48,42
2	1,0434	34,78	83,20
3	0,5040	16,80	100,00

The analysis shows first two factors, which can be considered. The third does not need to be mentioned. Factors analysis can be studied from the following tableau 3.

Tableau 3: Main variables factors for total population

	Factor 1			Factor 2		
	Coord	Cor	Ctr	Coord	Cor	Ctr
Q	0,84	0,70	0,48	-0,27	0,07	0,07
F	0,09	0,01	0,01	0,97	0,95	0,90
C	0,86	0,74	0,50	0,15	0,02	0,02

Element of discussion: Our Main Components analysis based on the total population presents following results.

*The first factor* reflects information quality transmitted by salespersons and their

conviction capacity (variables respective correlation Q and C: 0,70 and 0,74). This is a context variable generally associated with the salesperson work.

*The second factor* expresses the salesperson reliability. Variable F, as expected, explains it. The opposition between the conviction capacities, the information quality and salesperson reliability explains, for example, that desire to convince can be independent from the salesperson reliability. This work will be developed for the strong group.

Main factors correlation for the strong group

Correlations are presented in Tableau 4.

Elements of discussion. The variables F and C are positively correlated to factor 1 (respectively 0,56 and 0,57). The factor 1 contribution is relatively important (respectively 0,42 and 0,43). The variable Q is weakly correlated to factor 1 (0,19) and strongly correlated to factor 2 which presents a good contribution to factor formation.

Tableau 4: Main variables in the strong group

	Factor 1			Factor 2		
	Coord	Cor	Ctr	Coord	Cor	Ctr
Q	-0,43	0,19	0,14	-0,90	0,81	0,86
F	0,76	0,56	0,42	-0,28	0,08	0,08
C	0,76	0,57	0,43	-0,23	0,05	0,05

This analysis permits to distinguish, two variables types: variables associated with sales techniques (information reliability) and variables associated with product knowledge (information quality). The opposition between the information reliability, the convincing capacity and the information quality means, for example, that the desire to sell seems independent from conviction in the strong salesperson group. We continue our work on weak salespersons study.

Main factors correlation in the weak group.

We study main variables factors. This factor analysis can be studied from the following tableau (tableau n°5).

Tableau n° 5: Main variables factors in the weak group.

	Factor 1			Factor 2		
	Coord	Cor	Ctr	Coord	Cor	Ctr
Q	0,76	0,58	0,46	0,20	0,04	0,04
F	-0,77	0,59	0,47	-0,13	0,01	0,01
C	0,27	0,07	0,05	-0,96	0,92	0,93

Variables Q and F are positively correlated with factor 1 (respectively 0,58 and 0,59).

The factor 1 contribution to axis building has been relatively high (respectively 0,46 and 0,47). The variable C is weakly correlated with the factor 1 (0,07) and highly correlated with the factor 2. It presents a good contribution to this factor building. The reliability and the information quality are associated. This fact has not been observed in the strong salesperson group. For the weak group, conviction efforts seems to be heightened, due to salesperson hard work to compensate their difficulties. We can see that, depending on groups, the variables Q, F and C do not play the same role as shown in the next tableau (tableau n° 6).

Tableau 6: The influence of Q, F and C in the groups

	Factor 1	Factor 2
Total group	Quality of information associated to conviction potential	Salesperson reliability
Strong group	Conviction capacity associated to reliability	Quality of information
Weak group	Quality of information associated to reliability	Conviction capacity

The different values of Q F and C in the three groups show that the achievement (strong, average, weak) is associated with salesperson's actions. These actions can be different with three variables and justify their study.

*The choice of Q.*

This selling competence is required from all salespersons, in pharmaceuticals industry. It is specifically controlled, in France, by an exam, confirming the information quality transmitted.

*The choice of F.*

This variable is justified by selling requirements and regularly discussed by doctors, able to recommend competitive products.

*The choice of C* is justified by results shown from medical panels (IMS) presenting sales and prescription results obtained.

*GESTURES FREQUENCY MEASUREMENT ASSOCIATED WITH MAIN VARIABLES.*

This part presents individuals number and gestures occurrence observed for gender and situation variables.

*Individuals number and gestures frequency for gender and achievement (tableau 7).*

Tableau 7. : Individuals repartition between gender and achievement.

Individuals repartition	Men	Women
Average group	152	152
Strong group	20	19
Weak group	19	20
Total	191	191

The tableau 7 shows that there are 191 women and 191 men divided in 304 individuals in the average group and 39 in two other groups. We can see that the repartition between women and men is the same in the average group (152) whereas it is almost identical in the strong and weak groups (respectively 20 and 19 for strong group then 19 and 20 for weak group). As a matter of fact, we were wishing to take group number in account - 39 - (representing around 10 % of the population) available. Then, we have tried to keep this numerical singularity in our statistical study. Gestures number

associated with achievement are observed for gender and situations. Salespersons express with gestures. They depend on their gender or situation and achievements. Gestures number associated with gender and achievement are presented in the following tableau n° 8: Gestures number repartition between gender and achievement

Number of gestures	Women	Men
Average group	523	385
Strong group	93	80
Weak group	69	55
Total	685	520

We can see, here, that women move more (685 gestures) than men (520), whatever the group achievement. The same study, with the situation (stress and calm), shows an identical salesperson's repartition.

*Individuals number and gestures frequencies between situation and achievement.*

Results obtained between situation and achievement are presented underneath (Table 9).

Tableau 9: Individuals repartition associating situation and achievement

individuals repartition	Stress	Calm
Average group	151	151
Strong group	20	19
Weak group	20	19
Total	191	191

Gestures number expressed by salespersons in two different situations is the following in Tableau 10. We can see, in this tableau, that stress develops more gestures (692) than calm situations, whatever the group achievement.

Tableau 10: Gestures repartition associating situation and achievement

Gestures number	Stress	Calm
Average group	483	425
Strong group	137	36
Weak group	72	52
Total	692	513

*Influence of gender and achievement on gestures number.*

We process a Manova analysis, in order to study two factors impact (gender and achievement) on gestures number (tableau n° 11).

Tableau n°11: Manova gender and achievement analysis associated with gestures number.

Source of Fluctuation	FD	Square sum	Average square	F	Significant
Gender	1	71,26	71,26	151,60	Significant
Achievement	2	54,11	27,05	56,00	Significant
Interaction	2	39,12	19,56	41,16	Significant
R	376	178,53	0,47		
Total	381	343,02	118,34	248,76	

FD: freedom degree

Elements of discussion. Gender and achievement factors have an influence on gestures number because tests are statistically significant. Averages comparison (tableau 12) shows that average gestures number is higher for women (average gestures number is 3.58) than for men (average gestures number is 2.72).

Tableau 12: Averages comparison between achievements and gender

	Women	Men	Together	Test NK
Average group	3,44	2,53	2,65	NS
Strong group	5,15	4,00	4,43	S
Weak group	3,85	3,10	3,17	NS
All groups	3,58	2,72	3,15	NS

We also show group achievement results and situations when we study groups with a Newman Keuls test. The averages analysis explains differences between groups in the following tableau ( tableau 12Bis).

Tableau n° 12 bis: Averages comparison between achievement and situation.

	Stress	Calm	Together	Test NK
Weak group	3,37	2,73	4,85	S
Average group	3,60	2,79	3,08	S
Strong group	6,85	1,89	2,92	S
All groups	3,62	2,68	3,02	S

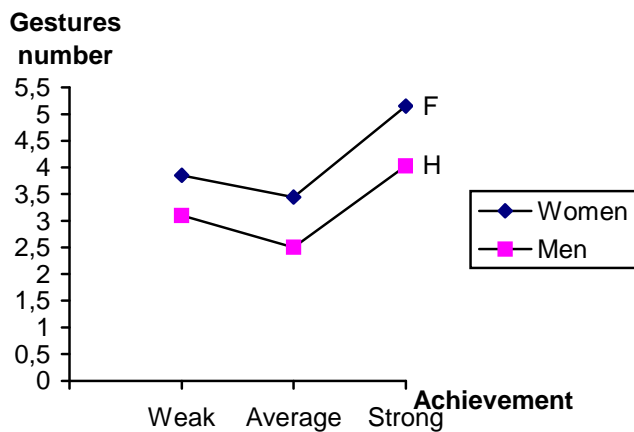
The average multiple comparisons show that:

Weak and average salespersons have an average gestures number non statistically significant

Strong salespersons behave differently from weak and average salesperson on gestures number. They do more gestures (graph 1).

Gestures, related to achievements, show competence influence for strong groups, whatever the gender, because average group offers the largest differences. The same analysis, for situation, is proposed.

Graph 1: averages graphic comparison



*Influence of situation and achievement influence on gestures number.*

Average gestures number comparison (tableau 13) shows that strong group gestures number differs seriously in stress and calm situations.

Tableau 13: Gender Khi-two analysis

	Women	Men	TOTAL	Khi Two
	Nbr obs.	Nbr obs.		
Hands	131	69	200	S
Others	554	451	1005	NS
<b>TOTAL</b>	<b>685</b>	<b>520</b>	<b>1 205</b>	<b>NS</b>

In stress situation, the strong group offers the largest number of gestures (6,85), whereas, for calm situations, they offer the lowest. These numbers are presented on graph 2.: Averages graphic comparisons between situation and achievement.



This graph describes visually achievement and situation influence on gestures number, as seen above. It shows also that weak and average groups present approximatively an identical gestures number (seen on the tableau 13 with 3 grey tones). This work permits to realize the significant situation and achievement influence on gestures number.

#### ASSOCIATION BETWEEN GESTURES AND MAIN VARIABLES

The tableau shows the association between different gestures and an explaining variable: the gender ( tableau 14).

Tableau 14 : Khi two test between situation and gestures number.

	Stress	Calm	TOTAL	Khi Two
	Nbr Obs.	Nbr Obs.		
Hands	100	100	200	NS
Feet	25	2	27	S
Glances	72	22	94	S
Eyes	22	5	27	S
Legs	103	18	121	S
Others	247	145	442	NS
<b>Total</b>	<b>692</b>	<b>513</b>	<b>1.205</b>	<b>NS</b>

The tableau indicates that women would use more hand gestures. Women would react more often with their hands. The same analysis of influence is done with situation variable, as follows on tableau n°15.

Tableau n°15: square cosines associating gender (women and men) along axis.

	Square Cosines				
	Axe 1	Axe 2	Axe 3	Axe 4	Axe 5
Women	0,001	0,011	0,000	0,098	0,009
Men	0,001	0,011	0,000	0,098	0,009

This tableau indicates following points: glances number and eye mobility seem to increase in stress situations, because a positive ambiance traduces a better exchange. Feet and legs mobility would increase in stress situation, because salesperson's psychological concentration, in this situation, would produce a better research for legs comfortable positions.

*GESTURES STRUCTURATION RELATED TO THE GENDER*

Gestures structuration follows different steps: active variables are divided in classes and supplementary variables, because their important number (men or women number, stress or calm situations number) could have produced mistakes in axis representations. We do not present any elements about relative contributions to inertia explained by axis, associated with gender or situation. These last variables, considered as supplementary, do not present indicators, whereas active variables do. The square cosines are presented for each axis and corresponding variables in Tableau 16.

These results demonstrate gender weakness on axis.

Tableau 16: square cosines associating stress and calm on axis.

Square Cosines					
	Axe 1	Axe 2	Axe 3	Axe 4	Axe 5
Stress	0,069	0,012	0,012	0,019	0,017
Calm	0,069	0,012	0,012	0,019	0,017

*Axis 1:* the square cosines analysis gives a good contribution of axis 1 to variable building. Stress and calm variables have a better position on axis 1 than in any other axis. But this representation is weak.

*Axis 2, 3, 4, 5:* stress and calm situations are barely represented on axis 2, 3, 4, and 5.

Elements of discussion. The achievement analysis has shown that salespersons strong groups desire to do well. Their achievement appears independent from their conviction. Meanwhile, for weak achievers, the conviction is heightened, due to difficulties: it seems that efficiency hides conviction efforts whereas low achievers show too much their efforts and loose their conviction power. The Manova a measurement analyzes verify differences between achievements significant character. The Khi-2 test shows that the gender associated with hands is a significant variable. On the other hand, eyes, glances and legs have shown their significant role in association with stress situations. Finally the factorial analysis does not bring significant results. Our initial hypothesis are validated, as follows (tableau n°17).

Tableau n°17: validation of hypothesis. (V for validation)

Nb	Hypothesis	V
H1	In conviction situation, a good saleswoman expresses more hands movements than a good salesman.	V
H2	Good salesperson's hand mobility would be increase in stress situation.	V
H3	A good salesperson glances or eyes movements number would increase more often in stress situation.	V
H4	Stress situations would provoke, for good salespersons, a greater legs gestures number.	V

## FUTURE POSSIBLE RESEARCHES

Future researches can establish analysis by activity type or by training comparisons.

### *COMPARISONS BY ACTIVITY*

Different works have given indications on relations between salespersons, purchasers and their activity (Bellenger, 1995 ; Xardel, 1992, Lebel, 1989). Our work will bring new approaches on gestural comparisons by activity and could help to understand differences between *salespersons* and *key account sales managers*, for example. Salespersons, just recruited in the gas world leader company, have permitted to show that ten engineers selected to sell more efficiently gas were finally the worst salespersons. Each one was so eager to enter in technical details without perception of non-verbal messages (gestures), that they did not realize expectations from their clients. Key account salespersons integrate company data, stakes, verbal and non verbal communication - including gestures- and build a model, which final goal is to sell (Author, 1997). It would be interesting to compare gestural language of these two populations.

In the literature, others jobs or activity are compared, such as salespersons or medical salespersons.

It would be interesting to compare gestural differences between these groups, knowing that different motivations can have an influence on gestures number expressed. We pursue our work by comparisons in the training field.

### *COMPARISONS IN TRAINING*

Jolibert and Tixier (1992) researches underline sales learning negotiation influence. Comparisons with gestures could be done between good, average and weak salesperson's in order to build a best salesperson's profile. Our research can be applied

to different selling fields and new applications for different salesperson's activities. Different researches possibilities show many sales activities. Our work presents practical consequences for salespersons, purchasers, sales managers and trainers.

#### *MARKETING IMPLICATIONS*

The marketing implications interest salespersons, purchasers, managers, and trainers.

##### *The consequences for salespersons*

Gestural analysis differences can show, for a salesperson, a better communication reading with their interlocutors. This communication can guide their behavior. Then, a good salesperson will help clients to touch products, look for behaviors, use arguments more targeted, and wear pleasant clothes. While a weak salesperson will show a monotone tune, legs moving too much, too frequent contacts with his or her body, and too many body positions change.

##### *Consequences for purchasers*

Having a decoding tool, purchasers can feel salesperson's weaknesses and can come back on subjects that the salesperson wishes to avoid. The gesture knowledge will give them a strategic and decisive advantage in negotiations. A high gestures number can, for example, indicate a good salesperson. The purchaser will observe hands moving during stress situations, in order to determine salesperson's situation perception. He will try to create a stress situation, in order to check salespersons achievements in such a situation.

##### *Consequences for sales managers.*

Better systematic and quantified gestural approach knowledge will help to improve empathy, lead their team and develop their sales. This psychological perception gives more professionalism to sales activity.

##### *Consequences for trainers.*

Sales trainers traditional approach is built traditionally around welcoming, calling clients, arguments, orders follow up, role playing, where salespersons improve their verbal presentations. Our approach draws attention on non-verbal language and situations. It underlines a gestures trend associated to explicative variables. Then trainers may develop their techniques and qualify this approach, where non-verbal aspects could complete their traditional approach.

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