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APPLIED QUASI EXPERIMENTAL RESEARCH DESIGN IN PERSONAL SALES - A CASE STUDY

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Abstract: The aim of the following article is to shed some light on the applied quasi experimental research method in personal sales and to provide a practical step-by step guideline for researchers. At the beginning of a customer visit or when entering the shop, a customer often forms a purchase intention or rejection within a very short period (first impression). It is striking that this judgement is often independent of the factual content of the interaction. The theory of thin slices is applied to personal selling within the framework of a laboratory experiment. Professional salespeople from different industries serve as test subjects. The fundamentals of an experimental method are discussed. The main step of an quasi experimental study design are presented: 1) derivation of theoretical fundamentals; 2) hypotheses formulation; 3) selection of participants (subjects); 4) quasi experimental set-up and procedure; 5) observation technique and 6) data evaluation. Finally, the advantages and limitations are discussed.

Keywords: Quasi Experimental Study Design, Marketing Research, Personal Sales

JEL Classification: M31

INTRODUCTION

The use of experimental research has become more common in marketing research, as well as in many other business and non-business areas in recent years. As already shown in this article, there are several different methodological approaches to performing experiment as well as quasi experiment-based studies (Jewitt, 2012).

Due to their high internal validity, experiments are often referred to as the gold standard of scientific research. The problems of social science experiments, however, are often seen in the unresolved transferability of their results to the 'real world'. Not least because of its disputed external validity, the experimental method still encounters a fair amount of opposition, especially in sociology (Keuschnigg and Wolbring, 2015). At this point it should be stated, that in order to ensure the external validity, the study is restricted to the German speaking market.

The efforts of social scientists to discover causal connections in different areas of human life have brought about a revaluation of the quasi experiment as a research method in recent years (Keuschnigg and Wolbring, 2015). Despite this, since the method requires much more work and greater experience on behalf of the researchers, it is not very often used.

The aim of the following article is to shed light on the applied quasi experimental research method in personal sales and to provide practical step-by step guidelines for researchers. A case study is provided as a practical example.

1. APPLICATION OF EXPERIMENTAL DESIGN IN SOCIAL STUDIES

„Experiments have a decisive methodological advantage over other research designs: The triad of group formation, randomisation and manipulation, while keeping the wider decision environment constant, facilitates the testing of causal behavioural statements." (Keuschnigg and Wolbring, 2015)

Although representative population surveys can still be considered the most important form of social science data collection, experimental methods are now used in many fields of empirical research. Field and survey experiments have joined the classic experiment, which aims to identify cause-effect relationships in the laboratory by comparing changes in attitudes or behaviour between an experimental and a control group (Keuschnigg and Wolbring, 2015). In psychology and social science experiments, it is generally less possible to precisely control the independent variables. Strict reproducibility cannot be demanded here; instead, validity and reliability are considered. The control of confounding factors is a crucial part of the experiment (Marguin et al., 2019). The problem of objectively valid measurement is exacerbated in the social sciences because observers and observed interact in a social interaction (Esser, 1975). Thus, for an objective experiment, it is indispensable to compare traditional results with experimental findings and, if necessary, to have the courage to reject the traditions. In this process, however, it should not be forgotten that humans tend to form subjective opinions and hypotheses and must lead themselves to objectivity through thorough experimentation and self-criticism (Reips, 2000). Furthermore, according to Creswell (2014), an experiment is a type of the study in which one or more independent variables are manipulated to see how one or more dependent variables are affected, on the other hand, when individuals are not randomly assigned, the procedure is called a quasi-experiment. In the present study, the participants have not been randomly selected. According to Zimmermann, the experiment is understood as a repeatable observation under controlled conditions; one or more independent variables are manipulated in such a way that it is possible to test the underlying hypothesis, i.e., the assertions of a causal relationship, in different situations (1972). According to Atteslander, the experiment has three decisive advantages (2008):

1. It offers the possibility of inserting experimental subjects into an 'artificially' designed process and thus of representing social connections and control.
2. It can be used to depict 'extreme situations'.
3. It is considered the safest method in empirical social research for establishing causal relationships.

While conducting an experiment, documentation of the experiment is required. The documentation must be sufficiently meaningful. It should, among other things, mention and discuss known or possible uncertainties and measurement errors. It should give information not only about facts and prevailing conditions, but also about hypotheses and intentions; nothing essential should be omitted. Which facts are essential and which are not varies between disciplines. While the experimenter's clothing in a physical experiment can obviously be left to his choice, in psychological experiments it can influence the subject's behaviour (Atteslander, 2008). A typical outline of the quasi experimental method is as follows: 1) Derivation of theoretical fundamentals and research question, 2) Hypothesis formulation and variable definition, 3) Selection of study participants (subjects), 4) Experimental set-up and procedure, 5) Experiment observation and 6) Data evaluation. The presented quasi experiment was conducted accordingly.

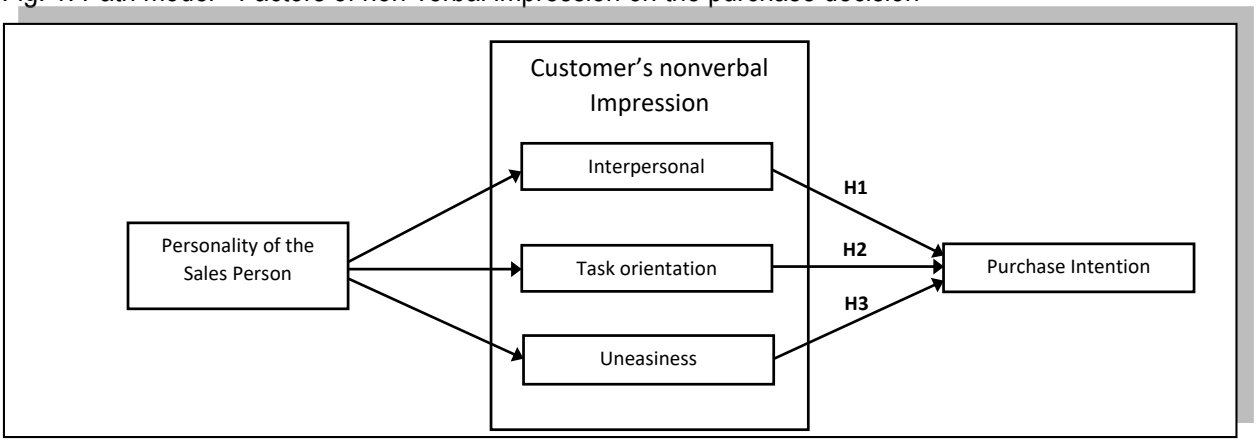
2. THEORETICAL FUNDAMENTALS AND RESEARCH QUESTION

In personal selling, the customer's perception of the salesperson has a decisive influence on sales success and has been studied in detail by Ambady and Krabbenhoft (2006) and Leigh and Summers (2002). It can be shown that judgements about salespeople based on thin slices provide accurate predictions about their sales effectiveness. Independent observers judged 30-second conversations with a salesperson on a variety of parameters, such as anxiety, analytical behaviour, and emotion, using the thin slice method. These judgements showed a high correlation with sales effectiveness as assessed by the salesperson's supervisor. Leigh and Summers were also able to show that the non-verbal behaviour of customers has a significant impact on the sales effectiveness of a salesperson (2002). The question thus arises, 'Which components are decisive for the effect underlying the thin slice theory?'

The decision whether to conduct an experiment to gain the best research outcome is essentially determined by the research question, the actual research subject, and the hypotheses, and this has been widely discussed in research method-related literature (Bortz and Döring, 2006).
The following model is based on the existing theory (Figure 1): The non-verbal impression model is based on these considerations. According to Leigh and Summers (2002) and Ambady and Krabbenhoft (2006), the model assumes that a non-verbal impression is based on the following three fundamental components:

1. The interpersonal component refers to personal interaction, such as the buyer's sympathy with the salesperson's point.
2. The task orientation component refers to the professional impression of the salesperson.
3. The uneasiness component refers to the self-confidence of the salesperson.

Fig. 1: Path model - Factors of non-verbal impression on the purchase decision



Source: Author's own

3. HYPOTHESIS FORMULATION AND VARIABLE DEFINITION

Altogether, three hypotheses were put forward to test the effectiveness of the thin slice technique in personal selling. It has been shown that a positive interpersonal perception, a lower restlessness (greater self-confidence of the salesperson), and a lower task-oriented perception (sales orientation of the salesperson) have a positive influence on the intention to buy. These results are empirically supported with the available data. Based on these results, the following three hypotheses were formulated:
H1: A salesperson's interpersonal skills have a positive influence on purchase intention.
H2: The task orientation of the salesperson has a positive influence on the purchase intention.
H3: The salesperson's anxiety (uneasiness) has a negative influence on the purchase intention.

From the listed hypotheses, variables were defined to survey the non-verbal impression of salespeople as well as the purchase decision.
1. Interpersonal perception was described by the following five independent variables:
   - cooperative
   - emotional
   - enthusiastic
   - supportive
   - understanding
2. Task orientation was described by the following five independent variables:
   - confident
   - goal-oriented
   - influential
   - professional

- controlled

3. Anxiety was described by the following independent variable:
   - anxious (uneasy)

4. The dependent variable in this study was purchase intention, which was determined by the question 'Would you buy a product from this salesperson?'

In order to validate the above proposed hypotheses, a laboratory quasi experiment was chosen as a suitable method for the planned study (Bortz and Döring, 2006). In this type of experiment, an issue or process is investigated under planned, simplified, 'pure' conditions.

4. SELECTION OF STUDY PARTICIPANTS

Since each industry has its own special characteristics with regard to the way personal selling is practised, a variety of different industries was aimed at when selecting the subjects. Salespeople from seven different industries participated in the study (Table 1).

Tab. 1: Subject profiles

Branch	Seller	Product
Insurance industry	A	Life insurance
Higher education industry	B	Course
IT Industry	C	Toner Cartridge
Management Consultant	D	Concept
Life science industry	E	Nasal irrigation
Financial services industry	F	Investment product
Telecommunications industry	G	Mobile phone contract

Source: Author's own

5. EXPERIMENTAL SET-UP AND PROCEDURE

The experiment was conducted according to the following steps:

1) Preliminary information of the test persons

The participants of the experiment were informed in advance by e-mail. They received the same information in advance in order to create the same starting situation for all test subjects:

- Date, place, time and room
- Overview of the procedure and duration of the experiment (no longer than 10 minutes)
- Instructions to bring the subject's own sales documents, such as brochures, catalogues, leaflets or sales samples, but no electronic media

2) Standardised sales talk

A sales talk is a targeted dialogue between a salesperson and a potential customer aimed at concluding a contract. Since each customer and salesperson had their own unique personalities, each sales talk was different from the next. The talks in the study differed further by the type of product being promoted. It was therefore not possible to determine a precise schedule for the sales talks in advance. Nevertheless, the sales talks conducted in this study can be divided into the following sections:

- Greeting: 'Good afternoon, I'm pleased to...'
- Everyday conversation or small talk: 'Have you found your way here well...'
- The product promotion: Introducing the product or service and clarifying general customer questions
- Conclusion/farewell: 'Thank you very much for taking the time...'

During the third part of the conversation, the actor-customer attempted to discompose the salesperson. This was done either by asking critical questions, giving critical comments such as 'You can't be serious...' or 'I've heard this presented better by one of your competitors!' or by trying to put the salesperson under time pressure.

3) Questionnaire on the subject's state of mind

Following the sales talk, the subjects were asked to complete a prepared questionnaire consisting of the following questions. The respondents evaluated the questions using a scale of one to seven where 1 = clear disagreement, 4 = neutral, and 7 = complete agreement (Likert et al., 2007):

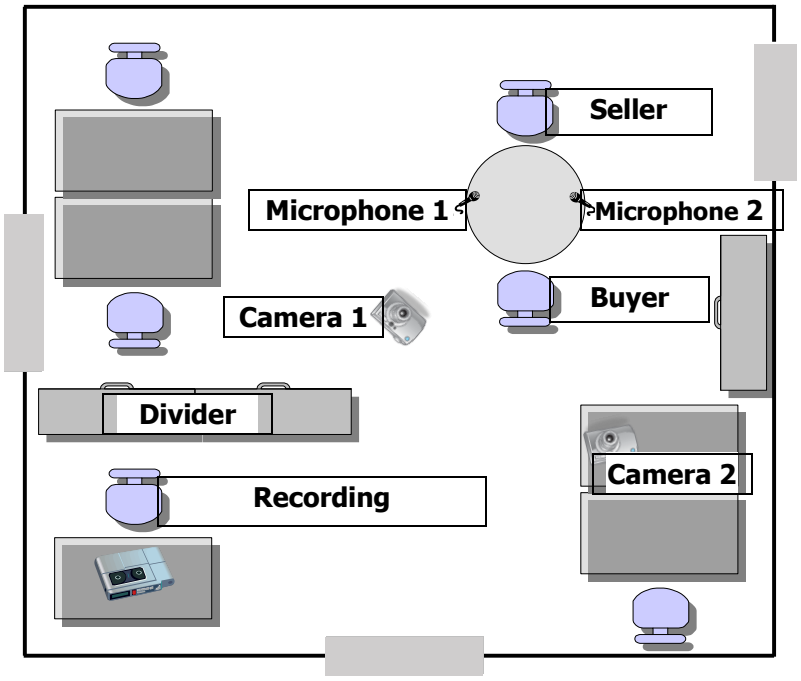
1. How would you rate your current state of mind on a scale of one to seven?
2. Were you able to convey your sales information?
3. How did you feel about the atmosphere of the sales meeting?
4. What do you think you did well during the sales talk?
5. What would you do differently next time?
6. How did you prepare for the interview?
7. How satisfied were you with the trial process?
8. Are you in a 'good' mood right now?
9. While answering these questions, I feel very cheerful.
10. For some reason, I don't feel very well at the moment.
11. I feel nervous or irritable at the moment.

The questionnaire was designed to test the respondents' fresh impressions and state of mind after the sales talk that had just taken place. The questionnaire enabled researchers to determine whether any unconsciously perceived factors could have influenced the sales talk and thus falsified the result.

4) Design of the experimental room

The experimental room shown in Figure 2 was set up for the sales talk (Figure 2).

Fig. 2: Schematic representation of the set-up and layout of the experimental room.



Source: Author's own

The sales talks took place at a round table with two chairs, where the two microphones (Microphones 1 and 2) were also placed. The recording supervisor monitored the conversation from behind two filing cabinets (Divider). The placement of the recording equipment behind a partition was intended to minimise any possible distraction caused by the presence of the recording supervisor during the sales conversation. The conversations were filmed from two different camera perspectives (Cameras 1 and 2).

5) Procedure

The participants were received by the researchers in a waiting room adjacent to the experiment room and were briefed again.

A total of seven sales talks were filmed with professional salespeople (seller) from the profiles mentioned in Table 1 and three actor-customers. The role of the actor-customers (buyer) was taken by the researchers. Care was taken to ensure that the actor-customers (buyer) were not personally known to the salespeople (seller).

At the beginning of the experiment, the test participants were placed in front of the camera by the researcher and a short test was carried out to ensure the equipment was functional. The cameras were switched on by the recording supervisor before the conversation started and were not moved during the conversation. In order to provide unbroken observation of the test participants, the following protocol was observed during the recording of the sales talks:

- The actor-customer (seller) sat at the table before the conversation began and remained in his or her seat during the greeting so as not to obscure the camera image.
- The entire sales conversation took place at the table.

Since in the survey conducted later, the first impression of the salesperson was the topic of interest, the recording focused on the salesperson. The customer (buyer) added to the conversation at times by interjecting or asking questions.

6) Production of the video sequences

A short film sequence (30 seconds) was created from the recording (initial long video) for each sales talk. Consequently, a total of 7 video sequences were produced (seven sales talks), each consisting of three sequences of ten seconds each. The first sequence included the greeting during the sales talk. The second sequence began when the seller turned to the buyer with the product in her hand, and the third sequence contained the conclusion of the sales talk. In each video, the independent variables (interpersonal perception, task orientation, uneasiness) were either emphasized or not emphasized. Sound editing was conducted to ensure that the participants' voices could be heard but content would not be understood. Whether this subjective selection of the sequences had an influence on the result of the study is not pursued further in this article.

Regarding the video production, there are a few methodological issues that need to be addressed. Some researchers see video recording as distorting social interaction. Some attempt to minimise the presence of the camera and the researcher using small wall or ceiling mounted cameras operated by a pre-set program or remote control or the use of one-way mirrors to ensure the validity of the data (Jewitt, 2012). Consequently, the question of where to position a camera is an important aspect for all video-based studies. It gives a sense of the relationship to the event being established and is central to the type of data to be recorded (Jewitt, 2012). The videos of the illustrative example where produced using trained actors that had to follow a given script (role play), consequently, the positioning of the camera was not a critical issue.

6. EXPERIMENT OBSERVATION

After the short films were edited, they were shown to 25 people who then evaluated the filmed sales talks. The evaluation was done by means of a questionnaire that the respondents filled out after each short film. Diversity in age and social background was striven for in respondent selection.

The questionnaire was comprised of 12 questions as below shown, 11 of which asked about the salesperson's (seller) non-verbal behaviour. The questions were arranged in a random order within the questionnaire as designed by Atteslander (2008). The respondents evaluated the questions using a scale of one to seven where 1 = clear disagreement, 4 = neutral, and 7 = complete agreement (Likert et al., 2007). The variables used in the following questionnaire had already been partially validated and applied in earlier studies by Ambady and Rosenthal (2006) and Hari and Stros (2008).

1. restless / unrestless
2. confidently cooperative (responds to customers) / uncooperative
3. purposeful - leads the conversation / does not lead the conversation
4. emotional / unemotional
5. enthusiastic / unenthusiastic

6. influencing / not influencing
7. professional (competent) / unprofessional
8. controlled / uncontrolled
9. would you be satisfied (when buying) with such a salesperson? (customer satisfaction)
10. supportive, supporting customers in their decision / not supportive
11. understanding / not understanding
12. would you buy a product from this salesperson? (purchase intention)

7. DATA EVALUATION

In a final step, the data obtained from the survey and video coding were merged (all data were combined on an Excel file) and standardized for further analysis in SPSS. The quality of the data was tested and checked for outliers, missing values, skewness and kurtosis. No abnormalities were observed. The data were normally distributed.

8. RESULTS

The hypotheses H1, H2 and H3 were tested by means of multivariate regression analysis. For the analysis, "purchase intention" was used as the dependent variable and the variables "interpersonal", "task-orientation" and "uneasiness" as independent variables (see also Figure 1). As a result, the hypothesis H1 (beta = 2.006; sig. = 0.019) and hypothesis H3 (beta = -0.839; sig. = 0.034) were confirmed. On the other hand, hypothesis H2 could not be confirmed, as a negative relationship was found (beta = -0.925; sig. = 0.132). For a detailed study outcome, please refer to Stros and Riha (2018).

9. DISCUSSION

In this article, the quasi experimental design of a study to investigate the effect of thin slices in personal selling was described and the procedure was comprehensively explained. The methodological approach used was based on Atteslander (2008).

First impressions about other people are made quickly, and the judgements formed can last for a long time. As the proverb says: 'You never get a second chance to make a first impression'. It is thus interesting to consider the accuracy of first impressions. Nalini Ambady and her team investigated this question with the help of the thin slice technique (Ambady and Rosenthal, 1993) and (Ambady et al., 2000). Thin slices are short or very short documentations of the dynamic behaviour of people, which are recorded audio-visually or only auditorily. The behaviour of the salesperson is of particular interest. The methodology was based on the realisation that the first impression of a salesperson decisively influences the buyer regardless of the informational content of the sales talk; the decision to buy is made unconsciously by the customer prior to hearing the promotional content of a salesperson's conversation (for the study outcome, please refer to Stros and Riha, 2018).

CONCLUSIONS

As a result, the following conclusions can be drawn:

1. Composition of the sample: 25 people participated as respondents in the described study. The sample was characterised by the following socio-demographic structure: 12 women (48%) and 13 men (52%) participated in the study. The age distribution showed a concentration on the age groups of 35 to 45 years (12 study participants) and older than 50 years (12 study participants); only one of the subjects was a youth (17 years). With the exception of three test persons who had already retired, as well as the student, all of the participants were employed. In contrast to other studies (Ambady, 2002; Ambady and Krabbenhoft, 2006; Ambady and Rosenthal, 1993; Ambady et al., 2000; Leigh and Summers, 2002), the participants were primarily not students. The study participants differed in age as well as social background. Nevertheless, it is difficult to ascertain whether the sample is representative, since younger age groups (20 to 30 years) were not considered in the study.

2. Training of the study participants: In order for a study participant to adequately answer the questions asked, he or she must understand a question's purpose and what kind of information is expected. The participants in the experiment had never before taken part in an empirical study of this kind. The procedure was thus not routine for the participants, and the test subjects occasionally found it difficult to answer the questions. This could possibly have been avoided by better training of the study participants by means of more detailed standardised instructions on the use of the questionnaire.
3. Tendency towards a medium evaluation by the participants: During the evaluation of the data, a tendency of the participants towards a neutral evaluation was observed. There are two possible reasons for this. Either the test participants were very cautious in their assessment of the salespeople and tended to avoid positive or negative assessments (the willingness of the test participants to give an 'extreme' evaluation of the salespeople, i.e. 1 = complete rejection or 7 = complete agreement, was not very pronounced), or the study participants had difficulty in interpreting the variables.
4. Persuasiveness of the salespeople: As mentioned above, the assessment of the salespeople by the study participants tended to be neutral. This suggests that the first impression the participants had of the salespeople was not persuasive. In order to be able to determine to what extent the subjective judgements obtained correspond to reality, objective measures should have been collected from the salespeople in advance of the study (for example, sales efficiency).
5. Robustness of the ratings by the subjects: Robustness refers to the likelihood that the ratings assigned by the study participants would be the same if the experiment were repeated. Considering that the study participants had never before taken part in an empirical study of this kind, it seems possible that a repetition of the experiment could result in somewhat different evaluations.
6. Number of evaluations by the test subjects: Each test person had to evaluate seven sales types with 12 variables within the framework of the study for a total of 154 evaluations. In contrast to the study by Hari and Stros (2008) in which the participants only had to evaluate two videos with regard to 20 variables (a total of 40 evaluations), the participants in this study had to make almost four times as many judgements. In order to eliminate possible sources of error (declining concentration, etc.), the number of judgements should be reduced in future studies.
7. Unfamiliar situation for the test participants when evaluating short films with low volume: Some test participants reported after the examination that they had not initially felt comfortable with this type of evaluation, which was unfamiliar to them. It is possible that unconscious errors crept into the assessment due to the unfamiliar assessment situation.

Limitations

In marketing research, the use of video observational methods enables additional information to be gathered. Furthermore, it enables research to be conducted that would not be possible with classical methods such as surveys and questionnaires due to their limitations. Consequently, new scientific contributions can be expected if this method is used more frequently. However, experimental design studies are usually labour-intensive, and in order to fulfil the research criteria of objectivity, reliability, and validity, a study must be correctly designed and conducted. As a result, researchers must be both experienced and proficient in quantitative research.

Although the methodology used in the current study resulted in an acceptable level of reliability and validity, limitations still exist. First of all, for further empirical studies, a larger sample should be produced. However, it needs to be stated the current study design has already led to a high workload. Second, the location of the study poses a potential limitation. The fact that the experiment was conducted in Switzerland raises the question about whether the findings can be generalized to other business markets and varying cultural environments.

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