

Sales Training Effectiveness: Modeling the Predictors in Pharmaceutical Industry



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In this study the results of a study examining the relationship between predictors and training effectiveness in India have been discussed. Data collected from four hundred sales professional using mixed method research has been used to test a model using linear regression analysis. Mediator analysis using regression has also been done to test the effect of mediator perceived usefulness. The results of the study support the relationship of predictors pre-training motivation, supervisor support, perceived usefulness and learning orientation with training effectiveness. Insights gained from this investigation provide opportunity to enhance training effectiveness with specific reference to pharmaceutical industry.

Keywords: Training Effectiveness, Perceived Usefulness, Pre-Training Motivation, Learning Orientation, Supervisor Support

1. Introduction

Sales training is important for an organization as it cultivates a learning culture, compassion for sales task, leads to better relationship between sales people and their clients. Sales training contributes to sales force productivity, competitiveness, value creation, interpersonal and technological competencies (Salas and Stagl, 2009). It facilitates behavioral and technological competencies and enables sales professionals to attain excellence. Since investments in sales training are substantial, management is always keen to know about the explicit benefits gained i.e. return on investment (ROI) or return on expectation (ROE) (Kirkpatrick, 2011).

Training effectiveness refers to achievement of intended purpose or objectives through a sales training programme. Goel (2007) has reported that in the growing Indian healthcare industry there exists a gap between the talent pool and industry demand.

This study is significant because it focuses on understanding the current status of sales training in pharmaceutical industry in India and discusses and models the predictors that determine the effectiveness of the sales training program. The constructs used as predictors are identified along with items and their scales from the literature. Through regression analysis and further mediation analysis these predictors are analyzed to test and develop a model which can capture the predictors and their relationship with training effectiveness measures.

2. Training Effectiveness and Its Predictors

Training effectiveness is an important phenomenon, thus, it is essential to identify the fundamental factors that enhances training effectiveness. Researchers have attempted to identify the determinants of training effectiveness. Based on literature review Grossman (2009) had categorized the determinants as organization related, training design related and trainee related. Major predictors have been identified using relevant literature and an explorative qualitative study using in-depth interviews.

2.1 Training Content (Pelham and Kravitz, 2008)

Today's workforce wants to learn content, in a style that fits their work-life demands. The emerging topics are technology usage and ethnic diversity (Gonzalez et al. 2010), ethical behavior, adaptability, time management and socialization (Salopek, 2009; Noonan, 2009). Driskell (2011) concluded in his study that, type of training implemented, training content and trainee expertise important determinants of the training effectiveness. Leach and Liu (2003) found that use of training materials at work is positively related to achieving sales training outcomes and contributes to training effectiveness.

H1: Training content enhances training effectiveness.

2.2 Perceived Effort During Training (Long, 2005)

Perceived effort shows the amount of energy the sales professional is willing to put in as effort in the exercise in order to perform (Davis, 1989). Perceived effort is positively related to training effectiveness (Arthur, Bennett Jr, Edens and Bell, 2003).

H2: Perceived effort enhances training effectiveness.

2.3 Pre-Training Motivation (Long, 2005)

Trainee's motivation has been identified as a foremost skill contributor (Holladay et al., 2003). Motivation is the ability to work hard and is vital in context of sales people's inclination and persistence to acquire skills (Baldwin et al., 2009). Pre-

training motivation enhances aspiration subsequently sales people's goal attainments (Robbins and Judge, 2009). Motivation to learn is a significant predictor to training effectiveness (Tziner et al. 2007).

H3: Pre-training motivation enhances training effectiveness.

2.4 Perceived Trainer Performance (Giangreco, 2009)

The trainer should ensure that the knowledge, skills, concepts, attitudes or behaviors acquired meet the strategic business needs. Thus, the decision of who will impart internal training is critical. Internal trainer is often a sound choice as trainees can relate to the instructor (Daniels, 2003). Prior research indicates that partnership between internal and external trainers is more beneficial (Hardingham, 1996). Perceived trainer performance has a direct significant positive relationship with training effectiveness (Arthur, Bennett Jr, Edens and Bell, 2003).

H4: Perceived trainer performance enhances training effectiveness.

2.5 Learning Orientation (Sarin, Sego, Kohli, and Challagalla, 2010)

Firms should shift attention on cultivating a learning culture and expect commitment to continual learning. The learning orientation of trainees has a positive repercussion on performance (Farell, 2000).

H5: Learning orientation enhances training effectiveness.

2.6 Perceived usefulness of Training (Giangreco, 2009)

Higher perceived usefulness increases the chances that the trainee will be motivated and thus more involved in the training further leading to higher training effectiveness. Giangreco, Sebastiano, and Peccei (2009) study revealed that perceived usefulness of training had the strongest effect on training effectiveness. Grossman (2009), argues that trainee attributes perceived usefulness has significant impact on sales training effectiveness.

H6: Perceived usefulness enhances training effectiveness.

2.7 Supervisory Support (Jackson et al., 2007)

Managerial feedback and support is regarded as imperative to productivity (Honeycutt et al., 1995). Supervisor support also emerged as considerable indicator of learning transfer (Blume et al., 2010) and has significant relationships to successful training (Jackson et al., 2007). Supervisor involvement has positive relationship with training transfer outcomes (Gilpin-Jackson and Bushe, 2007). Haslinda & Mahyuddin (2009) found that lack of support from top management and peers, employees' individual attitudes, job -related factors and also the deficiencies in training practice are the main factors which affect the effectiveness of training. Supervisory encouragement has noteworthy relationships to effective training (Jackson et al. 2007).

H7: Supervisor support enhances training effectiveness.

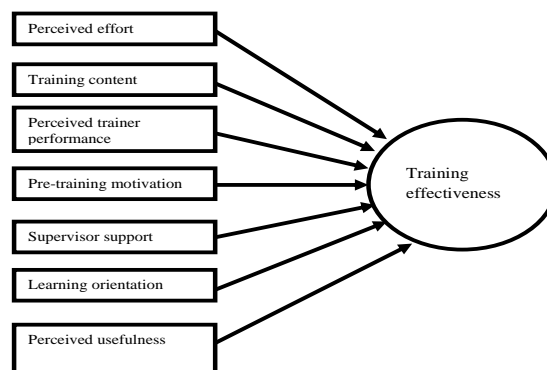


Figure 1 Conceptual Model for Predicting Sales Training Effectiveness

3. Research Methodology

In this study, mixed research method has been used which comprises of both qualitative research followed by quantitative research method. Mixed method is a sequential procedure, in which the researcher seeks to elaborate on or expand the findings of one method with another method. This may begin with a qualitative method for exploratory purposes and following up with a quantitative method with a large sample so that the researcher can generalize results to a population (Creswell, Clark, Gutmann, and Hanson, 2003; Tashakkori, A., & Teddlie, C. (Eds.), 2010).

Primarily our research philosophy is positivism. As discussed by Crowther and Lancaster (2008), since our study is positivist so we have adopted deductive approach. The research strategy adopted in our study is survey method. The targeted population for the current investigation comprises of sales people working in the pharmaceutical sector in National capital region (NCR) and Agra city.

Sampling unit in this study includes sales professionals working in the pharmaceutical sector. For qualitative research, the sampling units were sales professionals who had attended training (trainees) and who used to impart training (trainer) to the sales people in the pharmaceutical industry. In case of quantitative research, sales professionals who were involved in sales

related activities in the pharmaceutical industry were chosen. In this study the qualitative data has been collected using discussion guide with open-ended questions.

In quantitative method the total numbers of responses collected from the field were 432. The total numbers of valid responses after dropping off 32 incomplete responses were 400. Therefore, valid sample size for the quantitative study is 400. The preferred instrument here included a questionnaire using multiple choice questions and seven point Likert scale. To maintain the validity and consistency, questionnaire was constructed using scales identified through an extensive literature review.

The questionnaire was properly checked for reliability using pilot study which was conducted using a sample size of 50 respondents. The content validity was checked through expert interview.

Table 1 Variables Retained after Pilot Study

| Variables | Type of Variable | Number of Items in the Construct before Pilot Study | Number of Items in the Construct after Pilot Study | Cronbach's Alpha |
|-------------------------------|----------------------|---|--|------------------|
| Training effectiveness | Dependent variable | 8 | 7 | .810 |
| Learning orientation | Independent variable | 5 | 5 | .873 |
| Supervisor support | Independent variable | 5 | 5 | .752 |
| Training content | Independent variable | 4 | 4 | .796 |
| Perceived usefulness | Independent variable | 5 | 5 | .892 |
| Perceived effort | Independent variable | 5 | 4 | .599 |
| Pre-training motivation | Independent variable | 4 | 4 | .741 |
| Perceived trainer performance | Independent variable | 4 | 4 | .697 |

4. Data analysis

4.1 Sample Profile

In this study, total sales experience of majority of the respondents (68%) was within 6-10 years and less than 5 years. However, sales experience in the current organization is 41 % for 2-5 years of work experience and 36 % have less than two years in the same organization, while 41.5 % of the respondents attended training for a period of 1-2 weeks. The most frequently used training delivery methods were classroom lectures, group discussions and case studies. Many a times marketing managers were the trainers, while least preferred trainers were sales management consultants and sales academicians. Majority were graduates (65%). Almost 50% of respondents were working for multinational corporations, 47 % were holding entry-level executive position whereas 37 % were middle level managers. The survey reveals that majority of respondents (67%) belong to the age group of 25-35 years.

4.2 Regression Analysis And Hypotheses Testing

The qualitative study has helped in understanding the training effectiveness requirements in pharmaceutical organizations. The quantitative analysis of data has been done primarily using regression analysis. Regression analysis is carried out to test several hypotheses which were formulated based on the supporting literature review, qualitative study, and expert opinion. The regression analysis has helped in testing the hypothesized association between the training effectiveness and its predictors.

Hypothesized Relationships:

In the following Table 2, the details of the hypothesized relationship between the predictors and training effectiveness are presented.

Table 2 Relationship between Predictors and Training Effectiveness

| Hypothesis | Predictor/ independent variable | Direction of relationship | Dependent variable |
|------------|---------------------------------|---------------------------|------------------------|
| H 1 | Training content | → | Training effectiveness |
| H 2 | Perceived effort | → | Training effectiveness |
| H 3 | Pre-training motivation | → | Training effectiveness |
| H 4 | Perceived trainer performance | → | Training effectiveness |
| H 5 | Learning orientation | → | Training effectiveness |
| H.6 | Perceived usefulness | → | Training effectiveness |
| H 7 | Supervisor support | → | Training effectiveness |

Regression analysis determines the best linear association of perceived usefulness, supervisor support, learning orientation, training content, perceived effort, perceived trainer performance, and pre-training motivation in order to predict sales training effectiveness.

This combination of variables (learning orientation, perceived usefulness, supervisor support, and pre-training motivation) positively predicted training effectiveness, $F(4, 395) = 119.964, p < .001$. The variables training content, perceived effort and

perceived trainer performance were found to be contributing insignificantly to prediction of sales training effectiveness. The adjusted R square value was found to be 0.544 which indicates that out 54.4 % variance in sales training effectiveness is accounted by these four variables that are learning orientation, perceived usefulness, supervisor support, and pre-training motivation. According to Cohen (1988), this is a significant and large effect. The value of tolerance is above 0.25 and VIF below 4 thus indicating that the independent variables are not violating the assumptions of multicollinearity (Hair et al. 2006). The normal Histogram P-P plot of regression standard residual demonstrates that the assumption of normal distribution is not violated. Since the dots were densely scattered in the scatter-plot between the regression standardized predicted values and regression standardized residual, it can be concluded that the independent variables are correlated with training effectiveness.

Table 3 Correlations between Training Effectiveness and its Predictor Variables

| Pearson Correlation | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | Training effectiveness | 1.000 | | | | | | | |
| 2 | Training content | .538 | 1.000 | | | | | | |
| 3 | Perceived effort | .507 | .571 | 1.000 | | | | | |
| 4 | Pre-training motivation | .571 | .637 | .591 | 1.000 | | | | |
| 5 | Perceived trainer performance | .539 | .645 | .539 | .610 | 1.000 | | | |
| 6 | Learning orientation | .596 | .492 | .528 | .542 | .538 | 1.000 | | |
| 7 | Perceived usefulness | .665 | .580 | .551 | .650 | .609 | .690 | 1.000 | |
| 8 | Supervisor support | .589 | .536 | .421 | .485 | .505 | .474 | .549 | 1.000 |

Note

- a. Dependent Variable: Training effectiveness.
- b. All the correlations are significant at .001 levels. (N= 400)

Table 4 Model Summary

| Model Summary | | | | | | | | | | | |
|---|-------------------|------------|---------------------|-----------------------------|-------------------|------------|-----|-----|---------------|---------------|--|
| Model | R | 'R' Square | Adjusted 'R' Square | Standard. Error of Estimate | Change Statistics | | | | | Durbin-Watson | |
| | | | | | Change 'R' Square | 'F' Change | df1 | df2 | Sig. F Change | | |
| 1 | .741 ^d | .548 | .544 | .53881 | .012 | 10.796 | 1 | 395 | .001 | 2.049 | |
| a. Predictors: (Constant), Perceived usefulness , Supervisor support, Learning orientation, Pre-training motivation | | | | | | | | | | | |
| b. Dependent Variable: Training effectiveness | | | | | | | | | | | |

Table 5 Analysis of Variance

| Analysis of variance | | | | | | |
|---|------------|----------------|-----|-------------|---------|-------------------|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 139.310 | 4 | 34.827 | 119.964 | .000 ^d |
| | Residual | 114.674 | 395 | .290 | | |
| | Total | 253.984 | 399 | | | |
| a. Predictors: (Constant), Perceived usefulness , Supervisor support, Learning orientation, Pre-training motivation | | | | | | |
| b. Dependent Variable: Training effectiveness | | | | | | |

Table 6 Beta Coefficients

| Model | Substandard co-efficient | | Standard Co-Efficient | t | Sig. | Collinearity Statistics | |
|-------|--------------------------|----------------|-----------------------|-------|-------|-------------------------|------|
| | B | Standard Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | .733 | .217 | 3.378 | .001 | | |
| | Perceived usefulness | .292 | .055 | .290 | 5.358 | .000 | .391 |
| | Supervisor support | .249 | .039 | .268 | 6.443 | .000 | .659 |
| | Learning orientation | .177 | .045 | .187 | 3.921 | .000 | .501 |
| | Pre-training motivation | .140 | .043 | .151 | 3.286 | .001 | .542 |

4.3 Mediation Analysis

In order to further investigate and find out the reasons for the insignificant relationship of the training content (CT), perceived trainer performance (PTP), perceived effort during training (PET) with training effectiveness (TE) the researcher checked for the effect of any significant mediator variables. To establish the mediation effect, mediation test using regression has been executed as per the guidelines of Baron and Kenny (1986).

In the present study the mediating variable perceived usefulness (PU) has made the significant relationship of the three independent variables (training content (CT), perceived trainer performance (PTP) and perceived effort during training (PET) with training effectiveness (TE) weak and insignificant. As evident from the outputs it can be established that the three independent variables are significantly related to training effectiveness (TE) as well as perceived usefulness (PU). But in the presence of perceived usefulness the relationship of all the three variables with training effectiveness weakens and moves towards insignificance. Therefore based on guidelines by Baron and Kenny (1986) we can conclude that perceived usefulness (PU) is an important mediating variable and mediates the relationship of three independent variables (training content (CT), perceived trainer performance (PTP) and perceived effort during training (PET)) with training effectiveness. This also helps us in explaining why the three significant predictors (training content (CT), perceived trainer performance (PTP) and perceived effort during training (PET)) are not part of the final model in presence of perceived usefulness (PU).

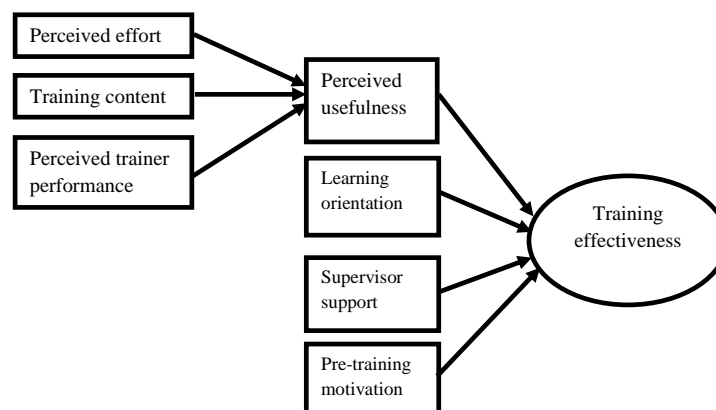


Figure 2 Model based on Regression Analysis and Mediation Analysis

4.4 Model based on Regression Analysis And Mediation Analysis

Based on the regression analysis and mediation analysis the above model shown in Figure 2 has been framed. Perceived usefulness (PU), supervisor support (SS), learning orientation (LO) and pre-training motivation (PTM) are having a direct significant relationship with training effectiveness (TE). On the other hand training content (CT), perceived trainer performance (PTP), perceived effort during training (PET) have indirect relationship with training effectiveness (TE) with perceived usefulness (PU) as a mediating variable.

5. Discussion

The results of the regression analysis has helped in testing and concluding that the variables perceived usefulness (PU), supervisor support (SS), learning orientation (LO), pre-training motivation (PTM) contributes significantly to the prediction of training effectiveness. In the regression analysis the variables perceived trainer performance, training content, perceived effort have been found to contribute insignificantly to the prediction of sales training effectiveness in presence of perceived usefulness (PU) in a pharmaceutical sales setting. Perceived usefulness has emerged as important mediating variable. Interestingly the three predictors perceived trainer performance, training content, perceived effort during training which in absence of perceived usefulness have a significant relationship with training effectiveness also have a significant relationship with perceived usefulness. Perceived usefulness has emerged as a significant predictor as well as a mediator in our study. This has major implications for the training design. It is important for the trainers as well as for the organizations to communicate the importance of perceived usefulness to the trainees.

On the basis of the data analysis and the corresponding results it is recommended that 'formalized' and 'tailored' training framework focusing on perceived usefulness, learning orientation, pre-training motivation and supervisor support can enable pharmaceutical organizations to increase training effectiveness.

5.1 Implications for Professionals and Personal Practices

This study highlights the set of decisions and actions to be taken for organizing and executing training in light of challenges of the evolving jobs and organization's objectives. The findings of this study could be useful for the review of HR policies and practices in pharmaceutical sector leading to an increased extent of sales training effectiveness in the future.

The professional training managers can design the training programs keeping in mind the predictors learning orientation, pre-training motivation, perceived usefulness and supervisor support. The managers need to understand the importance of perceived usefulness in the overall design as it is an important mediating variable and mediates the relationship of three

important factors which are perceived trainer performance, training content, and perceived effort during training. In absence of perceived usefulness they are significantly related with training effectiveness. In presence of perceived usefulness these predictors become insignificant as the relationship is mediated by perceived usefulness. It is important for the trainers as well as for the organizations to communicate the importance of perceived usefulness to the trainees. It is also important to provide supervisor support during training program. The organizations should also keep in mind the learning orientation and pre-training motivation while designing the training program.

5.2 Limitations and Suggestions

This research has focused on sales training with reference to sales professionals working in pharmaceutical industry. Further studies can be done to include other sectors like retail, banking and insurance etc. In the present study an attempt was made to use the confirmatory factor analysis but the results were not encouraging and this is a major limitation of the study. The confirmatory factor analysis using structural equation modeling to test the scales as well as model with perceived usefulness as mediating variable with robust scales and larger sample size can be done in future.

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