

W.P. : 309

Working Paper

IIM
WP-309



**INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD**

ROSENZWEIG'S PF STUDY AS A DISCRIMINATOR
OF ACCIDENT-PRONE DRIVERS

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D.M. Pestonjee

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W P No. 309

January 1980

WP309



WP

1980

(309)

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About the Authors

Dr. D.M. Pestonjee is Professor in the Organizational Behaviour Area, Indian Institute of Management, Ahmedabad and Mr. U.B. Singh is a Research Fellow in the Department of Psychology, Banaras Hindu University, Varanasi (U.P.)

Paper accepted for presentation at the 67th Session of the Indian Science Congress Association, Calcutta, February 1-5, 1980.

A B S T R A C T

The present investigation attempts to find out whether Rosenzweig's PF Study can be used as a predictor of accident behaviour or not. The investigation was conducted at the passengers transport bus depot of the U.P. State Road Transport Corporation Azamgarh. Hindi adaptation of the adult form of Rosenzweig's Picture Frustration Study was used to measure the types and directions of aggression.

There are two main groups in this study. The first group includes 20 bus drivers with accident records (AG) and the second group also has 20 bus drivers who are free from accidents (NAG).

Results indicate that the drivers involved in accidents (AG) do not differ significantly from those drivers who are free from accidents (NAG) as to their reactions to frustrating situations. Rather it is conceivable that all the drivers whether accident prone or accident free, will exhibit similar patterns of reaction while coping with situations frustrating to them. Thus it is concluded that the Picture Frustration Study has limitations as a discriminator of accident-prone drivers.

Alonso - Fernandez (1966) has distinguished three psychological stages in automobile driving : (1) the project arriving at the destination without mishaps; (2) the act of driving raises individual aggressive potential, even among those whose personality configurations do not reveal such tendencies; and (3) control of the vehicle - loss of control is always the immediate cause of the accident and in most cases it depends on the aggressiveness as much as on the faintheartedness of the driver involved. Findings suggest that alcoholics (Payne and Selzer, 1962), insecure (Pestonjee and Singh, 1979), and aggressive personalities (Goldstein, 1962, 1964; Pestonjee and Singh, 1979), are responsible for accidents. They have the common trait of reacting to emotional situations with poor coordination and tremulous movements.

Selzer, Rogers, and Kerr (1968), in a matched control group study on 96 drivers have shown that ratings on paranoid thinking, suicidal proclivity, and depression were associated with accident involvement. This conclusion was further emphasized by Selzer (1969), and Brenner and Selzer (1969). Achtmach (1967) compared 35 habitually bad drivers with a control group and obtained evidence for weak passive masochistic tendencies, latent repressed aggression, inflative demand for power, social inadequacy, demonstrative needs, an immature sexual image, and weak super-ego for bad drivers. Goldstein (1962, 1964) suggests that individuals with extremely poor attitudes of aggressiveness, social irresponsibility and those who were highly unstable

apparently have more accidents compared with those who are responsible, stable, and less aggressive.

Parry (1968) has suggested aggression as a personality factor among drivers who have been involved in accidents. It was further supported by Shere and Priel (1972) in a study of aggression among drivers using the Rosenzweig's Picture-Frustration Study. The present investigation is aimed at reexamining the findings of Shere and Priel and to see whether the PF Study can be used as a predictor of accident behaviour or not.

HYPOTHESES

The following four specific null hypotheses were tested in the present investigation.

- 1) The drivers in non-accident group (NAG) and accident group (AG) will not differ significantly as to the types and directions of aggression.
- 2) The drivers in NAG and single-accident group (SAG) will not differ significantly as to the types and directions of aggression.
- 3) The drivers in NAG and multi-accident group (MAG) will not differ significantly as to the types and directions of aggression.
- 4) The drivers in SAG and MAG will not differ significantly as to the types and directions of aggression.

METHODOLOGY

The present investigation was conducted at the passenger transport bus depot of the U.P. State Road Transport Corporation, Azamgarh, U.P. At the time of this investigation, the depot had a strength of 100 buses operated by 150 bus drivers.

Safety records of bus drivers for the period January, 1973 to February, 1978 were taken.

There are two main groups in this study. The first group includes 20 bus drivers with accident records (AG), and the second group also has 20 bus drivers who are free from accidents. The non-accident group included those who were free from accidents for the same period. The accident group was further classified into two subgroups: the single-accident group or SAG and multi-accident group or MAG. There were 14 drivers in the SAG and 6 in the MAG.

Hindi adaptation of the adult form of Rosenzweig's Picture-Frustration Study (Pareek, Devi, and Rosenzweig, 1968) was used to measure the types and directions of aggression. It is a controlled projective technique and attempts to measure the reactions in frustrating situations. There are 24 cartoon-like drawings representing frustrating situations. Scores are assigned to each response as to the directions of aggression, and types of aggression. The directions of aggression include: Extraggression or E-A; Introggression or I-A; and Imgression or M-A.

The types of aggression include; Obstacle - Dominance or O-D; Ego-Defence or E-D; and Need Persistence or N-P. The criterion scores for GCR or group conformity rating are also designed to reflect the model response on certain items given by a normal sample of the population. The Hindi adaptation of the test was standardized on a population of 800 adults; its reliability and stability were determined (Pareek and Devi, 1965).

All the groups of drivers were matched on a number of organismic and situational variables. The nature of job and supervision was similar for all the drivers. The average length of experience number of dependents, etc. were also obtained and the details regarding these variables for NAG, SAG, and AG drivers are given in the table 1.

Insert Table 1 here

RESULTS

The results of the present investigation are recorded in tables 2 and 3. Table 2 records the mean and standard deviation for types and directions of aggression scores obtained by different groups of bus drivers.

Insert Table 2 here

Table 3 records the significance of differences between means

for types and directions of aggression for different groups of bus drivers.

Insert Table 3 here

DISCUSSION

The results in table 2 show that the NAG and AG drivers have scored differently on the types as also the directions of aggression. However, when the t-ratios were computed concerning the types and directions of aggression, no significant differences are obtained (Table 3). The t-ratio for O-D is 1.38 (p=NS), for E-D it is 0.70 (p=NS) for N-P it is 0.43 (p=NS), for E-A it is 0.96 (p=NS), for I-A it is 0.83 (p=NS), and for M-A it is 1.64 (p=NS). A t-ratio of .08 (p=NS) was obtained for GCR. This confirms our first null hypothesis which states that the drivers in NAG and AG will not differ significantly as far as the types and directions of aggression are concerned.

Secondly, we have hypothesized that the drivers in NAG and SAG will not differ significantly as to the types and directions of aggression. When the t-ratios were computed between the mean scores of NAG and SAG to find out if a statistically significant difference exists on these dimensions, no significant differences were obtained (Table 3) either on the types of aggression (the t-ratio for O-D is 1.24, p = NS, E-D it is 0.36, p = NS; and N-P it is 0.24, p = NS) or on the directions of aggression (the obtained t-ratios for E-A, I-A, and M-A are

0.95, 0.64, and 1.08 respectively and in all cases $p = NS$).

This clearly indicates that our second hypothesis is also accepted and perhaps both the groups will exhibit more or less similar patterns of aggression in frustrating situations.

It has been our third hypothesis that the drivers in NAG and MAG will not differ significantly as to the types and directions of aggression. The results recorded in table 3 show that statistically significant differences were not obtained in this case also when we computed t-ratios between the mean scores obtained on different types and directions of aggression for these two groups. The t-ratios for O-D, E-D, and N-P are 0.72 ($p = NS$), 0.84 ($p = NS$), and 0.21 ($p = NS$) respectively; and for E-A, I-A, and M-A the t-ratio values are 0.73 ($p = NS$), 0.69 ($p = NS$), and 0.47 ($p = NS$) respectively. A t-ratio of 0.58 ($p = NS$) is obtained for GCR when the means of both the groups are compared. All these results indicate that the NAG and MAG drivers do not differ much in their expression and the extent of aggression as far as the frustrating situations are concerned. Thus, our third hypothesis is also to be accepted.

In the case of our fourth hypothesis, namely, that the drivers in MAG and SAG will not differ significantly as for the types and directions of aggression we can accept this hypothesis also. From the results recorded in table 3, we can see that the t-ratios obtained for these two groups on the various dimensions

of aggression, i.e., O-D, E-D, N-P, E-A, I-A, M-A, and GCR are 0.23 ($p = NS$), 0.81 ($p = NS$), 0.74 ($p = NS$), 0.034 ($p = NS$), 0.218 ($p = NS$), 0.37 ($p = NS$), and 0.94 ($p = NS$), respectively.

Thus, on the basis of these results it can be concluded that the drivers involved in accidents do not differ significantly from those drivers who are free from accidents as to their reactions to frustrating situations. Rather, it is conceivable that all the drivers whether accident-prone or accident-free, will exhibit similar patterns of reaction while coping with situations frustrating to them. However, these results do not confirm the findings of Shere and Priel (1972). They have reported that a statistically significant difference ($p < .10$) exists between the drivers without any offences or accidents and a group of those with accidents and offences on the dimensions like Ex-P, Ix-P and GCR. Their results indicate that the drivers in accident and offences group have scored higher on Ex-P and low on Ix-P and GCR dimensions. However, the differences in the results of the present study and that of Shere and Priel can be attributed perhaps to the following reasons:

(a) The cross-cultural differences existing between the two countries, may be accounted for in terms of the persistent threat of war and warlike conditions in Israel. Such a situation luckily does not obtain in India and in the absence of any such conditions the general aggressiveness of Indian drivers (and also the overall population should be low.

(b) In the present study the accident group was defined on the basis of accident records only while in the case of Shere and Priel the accident group (or group C) included the drivers with accidents and offences both.

To conclude, we can say that the Picture-Frustration Study can not be used as a discriminator of accident-prone drivers. However, we would suggest that further work needs to be done on a larger sample before the PF Study can be unequivocally declared unfit as a predictor.

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Table 1

Average age, experience, number of children, and
 number of dependents in the immediate family
 of different group of bus-drivers

Groups	Age (in years)	Experience (in years)	Children	No. of dependents
NAG	39.5	12.75	3.55	11.10
AG	40.03	14.60	3.60	11.90
SAG	41.78	15.57	3.78	12.78
MAG	36.83	12.33	3.66	9.83

Table 2

Aggression scores on Rosenzweig's P-F Study of different groups of bus drivers

Dimensions	G R O U P S								
	NAG (N=20)		AG (N=20)		SAG (N=14)		MAG (N=6)		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Directions	E-A	39.55	11.72	43.15	11.43	43.71	12.77	43.50	8.37
of	I-A	28.40	6.76	26.75	5.35	26.93	5.93	26.33	3.59
Aggression	M-A	32.50	6.25	29.60	9.03	29.34	11.01	31.17	4.10
Types	O-D	18.50	10.02	14.85	5.73	14.64	6.35	15.33	3.86
of	E-D	51.65	11.25	53.85	7.72	52.93	8.04	56.00	5.07
Aggression	N-P	29.85	12.57	31.30	7.64	32.43	10.59	28.67	8.12
	GCR	60.35	19.93	60.80	14.13	58.86	15.44	65.33	8.96

Table 3

Significance of difference between means of aggression scores
of different groups of bus drivers

Dimensions	Comparison Groups								
	NAG vs AG		NAG vs SAG		NAG vs MAG		SAG vs MAG		
	t-ratio	P	t-ratio	P	t-ratio	P	t-ratio	P	
Directions of Aggression	E-A	0.96	NS	0.95	NS	0.73	NS	0.034	NS
	I-A	0.83	NS	0.64	NS	0.69	NS	0.218	NS
	M-A	1.64	NS	1.08	NS	0.47	NS	0.37	NS
Types of Aggression	O-D	1.38	NS	1.24	NS	0.72	NS	0.23	NS
	E-D	0.70	NS	0.36	NS	0.84	NS	0.81	NS
	N-P	0.43	NS	0.61	NS	0.21	NS	0.74	NS
GCR		0.08	NS	0.24	NS	0.58	NS	0.94	NS