Linking Locus of Control with Demographic Attributes: An Empirical Study on Defence Manufacturing Company in Bangalore, India

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Abstract

Some people believe that they are master of their fate and life. They are referred to as internals. While some people believe that they are puppets of fate or whatever happens to them are due to external factors or chance. Such people are known as externals. Individuals with internal locus of control are more active in their lives to pursue career goal. Locus of control can be regarded as uni or multidimensional construct. This paper aims to study the Locus of control of men and women officers employed in defence manufacturing company in Bangalore. For conducting this study, LOCO inventory scale developed by Pareek Udai in 2002 has been used. It is 30 – item scale with 10 items each under internality, externality (others) and externality (chance). The 5-point scale is used in scoring responses ranging from "hardly feel" (0) to "strongly feel" (4). The results obtained after analysis supports the conclusion that officers are more towards internal and determine life events through personal effort and ability.

Keywords: Personality, locus of control, internals, externals, chance, CPSE.

Introduction

Locus of Control has gained considerable importance in today's scenario in personality psychology. Julian B. Rotter is considered as a pioneer in developing this concept in 1954. It is one of the important factors of personality trait. LOCO inventory scale developed by Pareek Udai[1] has 30 items, with 10 items each for internality, externality (others) and externality (luck). The 5-point scale is used in scoring responses ranging from "hardly feel" (0) to "strongly feel" (4). An example item is "My success or failure depends mostly on the amount of effort I put in". The three dimensions of LOCO inventory are: Internal (I), External – Others (E-O) and External – Chance (E-C). Scores will range from 0 – 40 for each of the three columns internality, externality (others) and externality (chance). Rotter[2] used the empirical law of effect which states that people are motivated to seek positive reinforcement and avoid negative reinforcement. Rotter[2] used Skinner's concept of reinforcement which states that if an individual's outcome of responses are favorable or unfavorable then the likelihood of the occurrence of the response in the future is increased (positive reinforcement) or decreased (negative reinforcement) respectively. Rotter[3] regards Social Learning Theory is a molar theory of personality that aims to unite two significant theories of psychology – the reinforcement theory and cognitive or theory.

Literature review: Judge and colleagues (Judge, Locke and Durham[4]), (Judge, Bono and Locke[5]), (Judge, T. A. and Bono, J. E[6]) and (Judge et al.[7]) introduced the term core self-evaluation concept and identified locus of control as one of the four traits to qualify as a core-trait. Four dispositional traits are included in the concept of core self-evaluation: self-esteem, self efficacy, locus of control and neuroticism. Core self-evaluation has a direct relationship with job complexity (actual attainment of challenging jobs) and perceptions of job characteristics (eg. task variety, autonomy, feedback, and identity) such that job characteristics and job complexity mediate the relationship between core self-evaluation and job satisfaction (Judge, Bono and Locke[5]). As per Findley & Cooper[8], locus of control means person's belief about control over events in life.

The concept of internal versus external locus of control was developed by Rotter[2] and is based on Rotter's[9] social learning theory (SLT). Rotter[9] named his theory as social learning since it is focused on human behaviour and personality in social circumstances as well as needs required for human satisfaction by reinforcements. SLT is a molar theory of personality that aims to unite two significant theories of psychology – the stimulus-response or reinforcement theory and cognitive or field theory (Rotter[3]). For the development of the nature and effects of reinforcement, field theory provides a conceptual framework. Rotter's[9] social learning theory consists of four components. They are as follows: behavioural potential, expectancy, reinforcement value and psychological situation. In SLT, the concept of reinforcement strengthens the expectancy that a particular behaviour or event will be followed by that reinforcement in the future. Once the expectancy for such a behaviour-reinforcement sequence is built up, the expectancy will be reduced if the particular reinforcement does not occur.

The SLT provides a model to be used in the estimation of human behaviour. This model consists of four components: behaviour, expectancy, reinforcement and psychological situation. The concepts underlying SLT is similar to that of motivational theory. SLT is based on the assumption that human behaviour is changeable ie. it is possible to change behaviour by changing the external environment or the cognitive process of the person.

Behaviour: It is defined as the probability for behaviour to occur in a specific situation by an individual. The human behaviour is the one which has the highest potential for reinforcement.

Expectancy: It is defined as the probability for human behaviour to occur in a specific circumstance and is a function of expectancy that a particular behaviour will lead to a particular reinforcement. Rotter[9] defines it as "a probability held by the subject that any specific reinforcement or group of reinforcements will occur in any given situation or situations".

Expectancies can be generalized or specific. Expectancies generalise from a specific situation to a series of related situations. A generalised expectancy for related situations has functional properties and constitutes one of the important classes of variables in psychology. A generalised expectancy regarding the nature of the relationship between one's own behaviour and its results might affect a variety of behavioural choices in life situations. Generalised expectancy when combined with specific expectancy determines behaviour and the reinforcement value.

Reinforcement: The reinforcement strengthens an expectancy that a particular behaviour will lead to positive or negative reinforcement in future. When reinforcement is contingent upon the individual's behaviour, then its occurrence will increase expectancy and conversely its non-occurrence will reduce expectancy. Rotter[9] distinguished between internal and external reinforcement. Internal reinforcement is individual's experience that a past event is valuable for him while external reinforcement is the occurrence of an event that has some reinforcement value for an individual

Psychological situation: It determines both expectancies and reinforcement values. The probability of occurrence of a particular behaviour in some particular situations must take into account alternative behaviours available in the same situation.

Objectives of the study: i. To conduct analysis of Internal scores (I), External (Others) scores (E-O) and External (Chance) scores (E-C) . ii. To analyse Loco Inventory scores using Ratio Analysis. iii. To estimate mean and standard deviation of loco inventory scores. iv. To estimate relationship among age, total experience and locus of control. v. To estimate relationship between Locus of control and demographic profile. To estimate relationship between Locus of control and married people whose partners are employed

Research Methodology

Participants, Sampling and Procedure: The data for this study were collected during June 2014 to July 2014 from officers working in a defence manufacturing company at Bangalore. The sample respondents were selected by using systematic random sampling. Six days in a week i.e. except Sunday was dedicated to collect the data. 2200 nos. of officers were working in the defence manufacturing CPSE at Bangalore. Confidence level and confidence interval has been considered as 95 % and 10 % respectively. Data was collected using a loco inventory developed by Pareek Udai[1]. It is 30 – item scale with 10 items each under internality, externality (others) and externality (chance). The 5-point scale is used in scoring responses ranging from "hardly feel" (0) to "strongly feel" (4). An example item is "My success or failure depends mostly on the amount of effort I put in". The three dimensions of LOCO inventory are: Internal (I), External – Others (E-O) and External – Chance (E-C). Scores will range from 0 – 40 for each of the three columns internality, externality (others) and externality (chance). The instrument links locus of control to seven areas: General, Success or effectiveness, Influence, Acceptability, Career, Advancement, Rewards

The questionnaire consiste of two components: i. The first section contains questions related to demographic profile. ii. Second section contains the locus of control inventory items

The questionnaire was distributed to officers personally and collected back after filling up. The respondents were asked to fill the questionnaire. Participants in this study included men and women employed in full time job, both married and unmarried, with or without kids.

Total 350 questionnaires were distributed to the participants who voluntarily participated in the survey. 90 participants did not return the filled questionnaire. 41 questionnaire were rejected after scrutiny as they were not filled completely. Finally, 219 questionnaires consisting of 173 male and 46 female were taken for analysis. Table-1 shows the demographic profile of the respondents.

Table-1
Demographic Profile of the officers

Sr. No	Factors	N	%
1	Men	173	79
	Women	46	21
2	Parents	112	72.3
	Non –Parents	43	27.7
3	Single	63	28.8
	Married	156	71.2
4	Employed Partners	63	40.4
	Unemployed partners	93	59.6
5	Junior Level	90	41
	Middle Level	109	49.7
	Senior Level	19	8.6
	Top Level	1	0.4

Analysis: The information obtained as a result of the study has been compiled in a database formed with Minitab 14 statistical package software and Microsoft excel. Descriptive statistics including mean, percentage and standard deviation identified characteristics of the sample and their responses to each item. A principal factor analysis with varimax rotation identified characteristics of locus of control. In factor analysis, answers given to sentences scored. This study considered a factor load value of 0.30 and over efficient for the items. The minimum eigen value was considered at 1.0. The "Cronbach Alpha", the inner consistency coefficient, has been calculated for the reliability of the questionnaire.

Limitation of the research: This study is subjected to various limitations. First the study area was limited to manufacturing complex of a defence manufacturing CPSE at Bangalore. Therefore, the sample is also limited to officers working in manufacturing complex; future research should study other professions and employees at different levels in the organisations.

Second the gender distribution of the sample in the study is consistent (79% male and 21% female) with that of the entire population; the results of the study might suffer from the generalization when compared to other industries that have equal gender distribution.

Results and Discussion

Analysis of Internal scores (I): As it is evident from table 2, in case of internality, maximum 73 officers have scored an internal score ranging from 22 to 28. This implies that 30% officers are somewhere in between, with moderate trust in themselves and their abilities.

Table-2
Division of Internal Scores

Scores	Frequency	Percentage (%)
≥ 17	11	5
18 to 21	56	25
22 to 28	73	30
29 to 32	57	33
33 to 40	22	10

As it is evident from table 3, maximum of 106 officers have scored an E - O score of 21 to 29. This shows that 48% employees exhibit a realistic dependence on significant others.

Table-3
Division of External (Others) Scores

Scores	Frequency	Percentage (%)
≥ 16	26	12
17 to 20	35	16
21 to 29	106	48
30 to 40	52	24

As is evident from table 4, maximum of 93 officers have scored an E -L score of 11 to 20. This means that 42% officers are more likely to tackle such frustration, as they do not completely believe in the power of luck, fate, and/or chance.

Table-4
Division of External (Chance) Scores

Scores	Frequency	Percentage (%)
≥ 10	57	26
11 to 20	93	42
21 to 30	61	28
31 to 40	7	3

Analysis of Loco Inventory Scores using Ratio Analysis: Table 6 shows that I/E-O for 219 officers in the organization is 1.13, which is greater than 1, the officers exhibit a higher level of internality than externality (others). Officers believe in their inner abilities and attribute, their success/failure to their own capabilities, rather than the influence of their boss, peers and subordinates.

Table-5
Loco Inventory Scores

I	E-O	E-C
6098	5375	3585

Table-6
Ratio analysis of Loco Inventory Scores

I/E-O	I/E-C	I/(E-O + E-C)
1.13	1.70	0.68

I/E-C is 1.70 which is greater than 1 indicates that the officers exhibit a higher level of internality than externality (chance). They believe in their inner abilities and attribute their success/failure to their own capabilities, rather than luck, chance and/or fate.

I/(E-O + E-L) is 0.68, which is less than 1. Contrary to the observation in the first and second ratios, where officers exhibited a higher level of internality than externality (others) and externality (chance), this ratio brings to the fore a higher level of externality (others and chance) than internality.

Mean and Standard Deviation of loco inventory scores: Table 7 shows that sample size exhibits an acceptable level of internality, externality (others) and externality.

Table-7
Mean and Std. Deviation of loco inventory scores

	I	E-O	E-C
Mean	27.84	24.54	16.44
Standard Deviation	6.41	7.21	7.81

Correlation between age, total experience, internal, external (others) and external (chance): Table 8 reveals that there is

significant relationship between External (others) LOC, External (chance) LOC and Internal LOC as P value is less than 0.05. This indicates that external and internal locus of control characteristics of officers is not independent to each other. There is a partial negative correlation between Internal LOC and External (others) LOC and Internal LOC and External (chance) LOC. Partial positive correlation exists between External (Others) and External (Chance).

One way ANOVA showing the relationship between Locus of control and demographic profile: Table 10 reveals that there is no significance variance between LOC with respect to education, marital status and managerial level as the P value is more than 0.05.

Discussion: The current study aims to investigate locus of control among officers working in defence central public sector enterprise in Bangalore. Married and single officers working in defence CPSE, Bangalore at managerial level were compared. The results obtained after analysis reveal that the officers are inclined more towards internality than externality. This reveals that the officers believe in their inner potential and abilities and contribute their success/failure to their own effort, rather than external events/ luck/ chance and/or fate. This result is consistent with the studies conducted by Spector[10]; Frese[11]; Ross & Mirowsky[12], Noor[13]; Ducette and Wolk[14].

While relating locus of control to various demographic variables, many contradictory statements were revealed that refuted the previous findings. The study revealed that there is no relationship between LOC and age and total experience respectively as P value is more than 0.05. This result contradicted the study of Fry[15]; Specht, Schmukle and Egloff[16]. The study of Fry[15]; Specht, Schmukle and Egloff[16] show that as people grow old, they become more internal. There is no relationship LOC and managerial level as well as marital status.

There is no significance variance between LOC and education. This finding contradicted the study of Kasilingam and Sudha[17]; Erez and Judge[18] and Specht, Schmukle and Efloff[16]. Their studies show that People with higher education have less external locus of control. Education adds to more perceived control. Individuals with high perceived control are more inclined to set challenging goals for themselves and pursue those goals in adverse situations.

Table-8
Correlation between various factors

Variables		Internal	External (Others)	External (Chance)	Age
External (Others)	R	-0.179			
	P	0008*			
External (Chance)	R	-0.203	0.595		
	P	0.003*	0.000*		
Age	R	-0.047	0.075	-0.047	
	P	0.485	0.271	0.491	
Total Experience	R	-0.05	0.062	-0.048	0.954
	P	0.460	0.365	0.481	0.000*

Note: * P value < 0.05

Table-9
Descriptive Statistics of Locus of Control

Demographic Variables	N	Internal		External (Others)		External (Chance)	
		Mean	StDev	Mean	StDev	Mean	StDev
Junior Level	90	28.467	5.948	23.611	7.462	16.689	7.571
Middle Level	109	27.064	6.642	25.67	6.916	16.505	7.846
Senior Level	19	28.84	6.82	22.63	7.24	15.17	9.24
Top Level	1	38	0	22	0	11	0
Married	156	27.872	6.248	24.91	6.969	16.11	8.091
Single	63	27.778	6.864	23.635	7.784	17.27	7.099
B.E/B.Tech	172	28	6.326	24.477	7.169	16.52	7.725
ME/M.Tech/MBA	22	25.73	7.57	25.64	8.52	17.64	8.94
Diploma	12	27.58	5.16	23.58	4.52	15.50	7.20
Other Qualification	13	29.62	6.37	24.46	8.07	14.31	8.00

Table-10
One way ANOVA for LOC and demographic profile

Demographic Variables	Internal		External (Others)		External (Chance)	
	F	**P**	**F**	**P**	**F**	**P**
Managerial Level	1.83	0.143	1.89	0.132	0.35	0.789
Marital Status	0.01	0.922	1.40	0.237	0.99	0.322
Education	1.17	0.321	0.24	0.867	0.55	0.646

Note: * P value < 0.05

Conclusion

Locus of control is an important personality trait. The aim of this study was to explore the locus of control among officers and to link LOC with various demographic determinants. Using Pareek's scale across a sample of 219 respondents, it is evident that overall internal locus of control was high. While this is encouraging, its linkage with demographic attributes shows no significant relationship. Overall this study would help organisations to recruit individuals with internal locus of control that would be beneficial in the long run.

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