



Locus of Control of Individual Investors : A Segmentation Approach

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ABSTRACT

Investment plays a vital role in a developing country such as India, as it provides the necessary funds for undertaking productive activities to be circulated in the economy. Savings are our country's largest source of investment. Investments are subject to the individual's attitudes, beliefs and perceptions. As a result, the attitudes and expectations of investors have a major impact on their investment behaviour. Locus of Control is one of the most important factors that affect individual's decision-making behaviour. Locus of Control is people's assumptions about what causes their lives to have good and bad outcomes (Rotter, 1966). It is said that there is internal and external LOC. Individuals with internal LOC assume they control their own destiny, whereas individuals with external LOC relate their experiences to destiny, luck or chance. Consequently, LOC has a great influence on an individual's investment decision-making behaviour. As a result, this study attempts to assess the LOC of an individual and segment the investors based on their level of internal and external LOC.

Keywords: Locus of control, Individual investor, Segmentation of investors.

I. INTRODUCTION

“Developing an internal locus of control helps you to build resilience and enables you to deal with the stuff life throws at you.” - Joanna Frankham

Locus of control is the present-day idiom for the notion of internal versus external control of reinforcement which has evolved from the Rotter's [1] social learning theory. It was originally developed by Julian B. Rotter in the 1950's. Locus of control is an inner feeling that people possess regarding the extent to which they are proficient of making their own decisions and viewing the outcomes as coming from those decisions [2]. The word locus has derived from Latin meaning location or place. If an individual

believes that he/she is in control of their lives, there exists locus internally. If an individual believes that fate, luck, other people, environment or higher authority control their lives, there exists locus externally. Locus of control is a personality variable, which has its roots in the social learning theory developed by Rotter in 1954 [3]. Social learning theory integrates learning theory with personality theory, which is one of the seminal works on clinical psychology. The premise of the theory is that a person's actions are anticipated on the basis of the person's expectations of reinforcement, the perceived value of the reinforcement, and the circumstances in which the person finds himself or herself [4].

Rotter's motivating factor was the empirical law of effect. People are encouraged to seek out constructive stimuli, or reinforcement, and to resist negative stimulus, according to the law of effect. Rotter combined behaviourism and personality research without relying on physiological drives or impulses as a motivating force. Julian Rotter's social learning theory's core premise is that personality is the product of an individual's interaction with his or her environment. Rotter assumes that personality, and therefore behaviour, is still malleable. Adjust the way a person feels or the environment in which they are reacting, and their actions can change. Furthermore, during the 1960s, when the behaviourist approach was competing with the growing emphasis on cognitive psychology, the locus of control concept was developed as a way for social learning theorists to combine behavioural and cognitive theories [5]. They used locus of control to explain how certain control cognitions influence behaviour change. Around the same time, psychologists were turning their attention away from definitions of stable personality traits and toward behaviour modification. One idea that sought to overcome this void was locus of control, which used a human trait to model behaviour change [6]. Social learning theory developed by Rotter has basically, 3 constructs to predict behaviour. They are; behavioural potential, expectancy and reinforcement value [1]. The probability of any behaviour resulting in a given situation is determined by the individual's expectation that the behaviour will secure the available reinforcement, as well as the importance of the available reinforcement for that person [7]. Reinforcement boosts the likelihood that a specific behaviour or occurrence will be accompanied by reinforcement in future [8]. Expectancy is equivalent to the value of the reinforcement [9]. Expectancy entails that the person regard the result, possess self-efficacy, comprehend and believe the reward system, and eliminate unfavourable outcomes [10]. The chance of engaging in a particular behaviour in a

given situation is known as behaviour potential. In other terms, what is the likelihood that a person will behave in a certain way in a given circumstance? In any given scenario, one may engage in a variety of behaviours. There is a behaviour potential for every possible behaviour. As a result, the function of all these 3 constructs, helps us in the measurement and prediction of behaviour.

Since the introduction of locus of control theory, there has been enormous hike in research applying locus of control concept, and it has picked up widely in psychological as well as other fields of research ever since then [11]. The present study attempts to access the locus of control of individual investors, so as to segment them into diverse clusters with different characteristics.

II. METHODS AND MATERIAL

The study is based on the primary data collected from the working class residing in Kerala i.e, 12,49,343 workers [12]. Using Raosoft1991 [13] sample size calculator a sample size of 97 has been arrived having a confidence level of 95%. This has been rounded off to 100 for the ease of calculation. The data was collected using well structured questionnaire, out of the 125 questionnaires distributed during the period, January 20th to 30th, 2020, 100 (80%) questionnaires were found completed and were used for the analysis. The questionnaire for the study explores the demographic characteristics and LOC of individuals. Rotter's LOC Scale was used for measuring the LOC of respondents. The questionnaire's content validity was checked by a panel of experts.

The survey instrument showed a Cronbach's alpha value of 0.806. This shows that the questionnaire used and the sample size are reliable and adequate [14].

The locus of control data showed a kurtosis of 0.096 and skewness of 0.042, which are well within the normally accepted standards of ± 1.96 [15]. The

histogram and normal Q-Q plots also indicated that the data is normal.

III. RESULTS AND DISCUSSION

A. Demographic profile of Individual Investors

Analysis of the demographic profile of the respondents revealed that 76% of the respondents were of the age group 19-40 i.e., young adults while only 24% were in the age group of 41-60 i.e., adults. Out of the 100 respondents, 48 respondents were female and 52 respondents were male. Out of the respondents, 18% were under graduates, 45% were post-graduates and 37% had professional degrees.

B. Locus of Control

Rotter's [8] Locus of Control is a personality variable, which has been widely studied over the centuries within different and diverse fields [9] & [16]. It explains a person's generalised expectancies about what influences their life events. People who believe that they themselves control their life events are known as internals and those who believe it is dependent on luck, fate and other people are known as externals. Most of the people exhibit both internal and external traits in different life situations.

- 1) Internal Locus of Control: The locus of control of individuals were accessed through the Rotter's LOC scale. It contained 20 statements- 13 statements relating to internal LOC and 7 relating to external LOC. The mean of the internal LOC statements is given in the table below.

Table 2. Internal Locus of Control Statements

Statements	Mean
People's misfortunes result from the mistakes they make.	3.07
In the long run people get the respect they deserve in this world.	3.15
It's one's experiences in life which	3.51

determine what they are in life.	
I have often found out what is going to happen will happen.	3.02
Trusting fate has never turned out as well for me as making a decision to take a definite course of action.	2.93
Becoming a success is a matter of hard work; luck has little or nothing to do with it.	2.98
Getting a good job depends mainly on being in the right place at the right time.	3.36
When I make plans, I am almost certain that I can make them work.	3.30
It is impossible for me to believe that chance or luck plays an important role in my life.	2.85
Usually, when I plan to do something, I can carry it out.	3.33
In general, I think about a decision before taking action.	3.35
It is better to save up for something and buy it only when you have the money to pay.	3.00
Being in debt shows that you cannot manage your finances properly.	2.71

Source: Primary data

Since most of the mean values in the above table is more than 3 and only four values are below it, but not so low, it can be inferred that the individual investors in Kerala have more internal locus of control. They believe in their own judgement and rely on hard work rather than luck and faith. It can be seen that the impact of locus of control on debt management is only moderate.

Table 3. Internal Locus of Control of Individual Investors.

Internal LOC	Percentage
Low	2
Medium	95
High	3

Total	100
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Source: Primary data

Table 3. indicates that majority (95% + 3%) of the individual investors have medium to high level of internal locus of control i.e., they believe in their own capabilities rather than the external environment. These medium to high internal LOC individuals portray the quality of self- efficacy in their behaviour, as a result they are highly self- motivated to achieve their goals. Only 2% of investors have low internal LOC, and hence they need to be externally motivated to achieve the desired results.

- 2) External Locus of Control: The seven statements relating to external locus of control revealed a mean value as shown in the table 4.

Table 4. External Locus of Control Statements

Statements	Mean
Many of the unhappy things in people's life are partly due to bad luck.	3.46
To improve standard of living unfortunately, an individual's worth passes unrecognized no matter how hard he tries.	3.31
Heredity plays a major role in determining one's personality.	2.88
It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.	2.87
Many times, I feel that I have little influence over the things that happen to me.	2.96
The best laid plans often go astray.	3.18
Being in debt shows that you cannot manage your finances properly.	3.22

Source: Primary data

Among the external locus of control statements (7), there statements have a mean value below 3 and the rest of the statements do not have very high values,

which indicates that the individual investors, does not have much reliance on their faith and luck. They mainly focus on their hard work to achieve their goals and objectives.

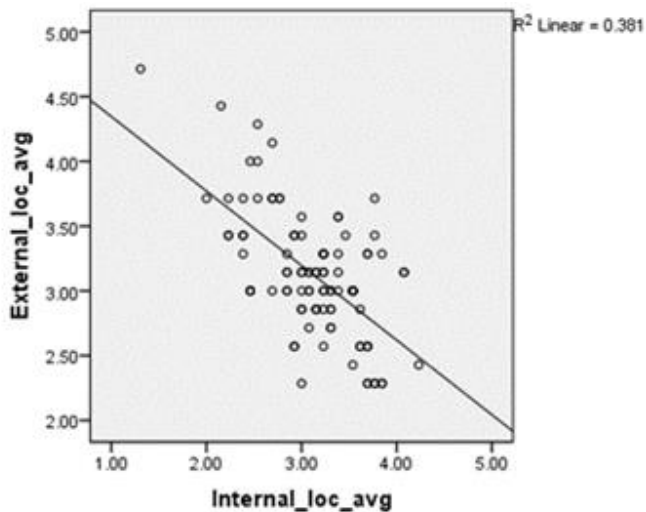
Table 5. External Locus of Control of Individual Investors

External LOC	Percentage
Low	9
Medium	87
High	4
Total	100

Source: Primary data

The above table indicates that majority (87%) of the individuals neither or nor belief in external forces. Only 4% strongly believe that the external environment has an influence on their life events and 9% have considerably low external locus of control. As a result, it can be seen that the individual investors have more internal LOC and less external LOC.

- 3) Relationship between Internal and External LOC: In order to determine whether the internal and external locus of control, exhibited significant correlation, Pearson's correlation coefficient was used. On analysis it was seen that the correlation between internal and external locus of control was significant at 0.01 level of significance and generated a correlation coefficient -0.617. This indicates that the internal and external LOC are not independent of each other, both these traits are present in an individual investor but at varying levels. Figure 3. Depicts the relationship between the internal and external loci of control with a linear trend line.



Source: Primary data

Figure 3. Relationship between internal and external LOC

C. Investor Segmentation

Investor segmentation is the rule of the day. It refers to the process of classifying individual investors into different subgroups based on their personality traits. Several studies have been conducted in this field of research by categorizing investors into various subgroups based on their; level of knowledge, allocation strategies and personality [17],[18],[19],[20],[21] & [22]. The present study tries to segment investors based on their locus of control. As we have already noted investors have varying levels of internal and external locus of control. Based on this, we proceed with our segmentation process using cluster analysis. Cluster analysis classifies individuals or objects, on asset of researcher selected characteristics. The clusters so formed will exhibit high internal (within- cluster) homogeneity and high external(between-cluster) heterogeneity [23]. In order to determine the number of clusters to be formed, the study applies hierarchical cluster analysis in the initial stage. After applying hierarchical cluster analysis, it was found that the investors can be classified into 3 clusters.

After determining the final cluster numbers, K-means clustering technique was used to segment the

investors into 3 clusters, namely- Internals, Externals and Moderates based on their level of internal and external LOC traits. The final cluster centres of internal and external LOC for the three cluster are shown in Table 6.

Table 6. Individual Investor Segmentation

	Cluster 1 (Internals)	Cluster 2 (Externals)	Cluster 3 (Moderate s)
External LOC	2.78	3.80	3.10
Internal LOC	3.63	2.39	3.05
Number of individual investors	34	19	47

Source: Primary data

1) Investor Clusters:

Cluster 1: Internals

Internals as the name suggests, they portray higher internal LOC traits than external LOC traits. They are individuals who believe in themselves and their capabilities. They are self-motivated and have the trait of self- efficacy in them. They do not rely on external support or belief to do their work. They believe that they can control their own destiny and life events. In the present study, 34 % of individuals are internals i.e., they believe in themselves rather than the external environment.

Cluster 2: Externals

Externals as the name indicates, they portray higher external LOC traits than internal LOC traits. They are individuals who rely on their external environment for everything in their life. They need to be externally motivated to get to their goals. They lack self- confidence and self- belief. In the present study, 19% of individuals belong to externals i.e., they rely

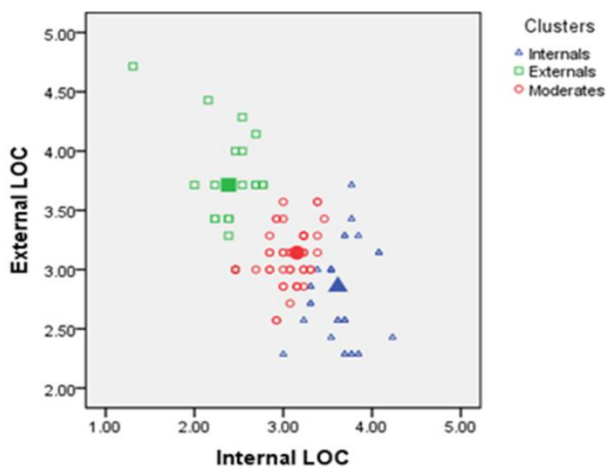
on their external environment such as faith, luck and destiny.

Cluster 3: Moderates

Moderates are individuals who exhibit both internal and external LOC traits. They try to moderate their life events between their self-beliefs and the beliefs of the external environment. They work hard and make their own destiny, at the same time they believe in luck, and faith. In the present study, majority of the individuals (47%) are moderates i.e., they have both the qualities of internals and externals.

2) Validation of Segmentation:

Discriminant analysis is used in the following section to profile and validate the cluster solutions formed on the basis of locus of control. Under discriminant analysis, when there are three clusters, two discriminant functions are formed. In this case the first function relates to external LOC and second function relate to internal LOC. The figure 4. Clearly indicates that the classification based on LOC is suitable and distinct cluster have been formed.



Source: Primary data

Figure 5. Investor Clusters

Table 7. Tests of Equality of Group Means

	Wilks' Lambda	F	df	df2	Sig.
			1		

External LOC	.438	62.306	2	97	.000
Internal LOC	.270	130.861	2	97	.000

Source: Primary data

Table 8. Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1 through 2	.191	159.664	4	.000
2	.961	3.887	1	.049

Source: Primary data

The test of equality of group means also revealed significance (Table 7), which indicates that there is significant differences in the clusters formed. The group correlations were 0.022 and the Box's M test (sig.= 0.003) also states that there is multivariate normality in the clusters formed or their covariances are significantly different. All this indicate that the profiling done on the bases of locus of control is correct. Wilk's Lambda showed significance for the test of function 1 through 2 (Table 8), which indicates that the discriminant function formed has good prediction capabilities. The classification results also indicate that 96 % of the classification is correct.

IV. CONCLUSION

Locus of control portrays the inner attitude of an individual. This study tries to access the locus of control of individuals and segment them into various clusters. The data collected for the study revealed that most of the individuals in Kerala had more internal LOC compared to external LOC, i.e., they believed in themselves and their hard work rather than on fate, luck and other external factors. It was also seen that there existed a high relationship between internal and external LOC i.e., they do not exist independently, instead the study revealed that a person has both

internal and external LOC at varying levels. The study used LOC construct to segment individuals into 3 clusters; namely internals, externals and moderates. It was seen that most of the individuals in Kerala were moderates i.e., they exhibited both the qualities of internals and externals. Their traits varied according to different situations. The clusters so formed were tested for their suitability and validity using discriminant analysis and the classification was found to be correct and apt. Thus, the Kerala society has a mixture of LOC clusters, but mostly they are moderates who try to suffice situations rather than to take extreme decisions.

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