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A study on locus of control among post-graduate students of arts, science and physical education

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Abstract
This study examines whether locus of control (LoC)—understood as an individual's beliefs regarding the extent to which life outcomes are influenced by their own actions or by external factors—varies among students of Arts, Sciences, and Physical Education. Using purposive sampling, two hundred and seventy postgraduate students were recruited. Data were collected using a standard questionnaire on locus of control. Descriptive statistical techniques and one-way ANOVA were used to investigate group differences. The result indicated that postgraduate students of the three academic fields did not differ significantly from one another. Students across all three academic disciplines were identified under the category of "average" (Grade 'D'), as per the LoC norms established by Bhutia & Nongtdu's (2018). This further suggests that students having an average level of internal Loc may believe that their success is controlled by external factors, and not by their own action or effort. This has been corroborated by several past studies, which have shown that individuals with a stronger internal locus of control tend to exhibit superior academic performance (Landis *et al*., 2007; Richardson *et al*., 2012). Furthermore, the findings suggest that fostering a strong internal locus of control within educational settings may contribute to enhancing student motivation and academic achievement.

Keywords: Internal Locus of Control, External LoC, post-graduate students, LoC Norms

Introduction
Psychologist Julian B. Rotter's theory concerning people's beliefs regarding the extent to which life outcomes are governed by their own actions or by external factors is generally known as the locus of control (LoC). LoC is primarily used in behavioural learning research, and it occupies a central position in psychology for understanding human behaviour and personality. Individuals who believe that their life's outcome, such as achievement or success, is based on their own level of effort considered as having an internal locus of control, but Individuals who believe that their life's outcome is determined by outside forces like luck, chance, fate etc., considered as having an external locus of control.

When people believe that their success or rewards are the product of their own actions, an internal LoC seems to be embodied in their personality. On the other hand, when people believe that their success or reward is due to external factors, it indicates a belief in an external LoC. In fact, LoC is a marker of mind-set that determines a person's level of involvement in pursuing a specific goal.

Due to differences in curriculum design and discipline-specific learning, postgraduate students of arts, sciences, and physical education programme encounter with complex academic environments and experiences. These domain-specific learning experiences may influence students' beliefs about personal control, accountability, and coping strategies, all of which are connected to LoC. This investigation seeks to understand such association between academic background and students' beliefs about the locus of control. Past studies informed the application of LoC on various aspects for example, gender differences, academic achievements, and some studied the external locus of control and internal locus of control separately (Choudhury & Borooah, 2017; Shriwas, 2021; Sharma, 2024; Mwamwenda & Kariuki, 2020) [3, 13, 14, 15, 10]. Despite substantial scholarly work on LoC, scholarly attention seemed to be neglected, particularly in comparing internal and external LoC among Arts, Science, and Physical Education students. Using LoC as a psychological construct, the study seeks to examine and compare the LoC among postgraduate students. Drawing on the reviewed literature, the study hypothesised that postgraduate students would significantly differ in their beliefs about internal and external LoC.

Methods Used

Selection of the subjects

Following purposive sampling within a cross-sectional design, a total of two hundred and seventy postgraduate students from arts, science, and physical education were selected. The selected students were drawn from the Visva-Bharati, a central University in the eastern province of India. The process of data collection through the administration of questionnaires was explained to the respondents to avoid any ambiguity about the effort required of them.

Data Collection Procedure

In this study, the responses for locus of control were obtained through a standard questionnaire developed by Bhutia & Nongtdu (2018) [2]. The scale consisted of 40 items. There are 19 positive and 21 negative questions. The scale comprises two parts: one is the internal locus of control with 22 items, and the other is the external locus of control with 18 items. The questionnaire was borrowed from and is available at the National Psychological Corporation in Agra, an established and recognised organisation for psychological scales for Indian scholars. After securing approval from the departmental committee and authorisation from the respective academic departments of the participants, the data were collected. Informed consent was obtained from participants prior to administering the questionnaire. To accommodate students' convenience, all the data were collected from their respective departmental building classrooms.

Reliability of data

A standard questionnaire for locus of control, developed by Bhutia & Nongtdu (2018) [2] with established validity and reliability, was adopted for this study. Its reliability was confirmed by a split-half correlation coefficient of 0.78.

Analytical procedure

Descriptive statistics and one-way ANOVA were used as analytical tools to examine internal and external locus of control among postgraduate students in arts, science, and physical education. All the collected data were calculated and analysed using "Jamovi", an open-source statistical software. Normality was confirmed via the Shapiro-Wilk test ($p > .05$), thereby validating the application of -ANOVA statistical test.

Results

Following descriptive statistics, a one-way ANOVA, and the norms for evaluating locus of control, the following results have been observed.

Table 1: Internal locus of control among Postgraduate student

Group	N	Mean	SD (±)	SE	Shapiro-Wilk (P-value)	F-value	P-value (0.05 Sig.)
Science	90	78.3	8.10	0.854	—	—	—
Arts	90	79.5	9.38	0.989	0.133	1.071	0.344
Physical Education	90	80.3	9.64	1.016	—	—	—

In Table 1, the ANOVA results shows no significant difference between the groups, with a p-value of 0.344. It indicates that internal locus of control is quite similar among the three groups. Therefore, the hypothesis - 'there is a significant difference among post-graduate students of Arts, Science and Physical Education' - is rejected. Moreover, the normality assumption was also met, as the Shapiro-Wilk test indicated the p-value (0.133) above 0.05.

Table 2: External Locus of control among Postgraduate students.

Group	N	Mean	SD (±)	SE	Shapiro-Wilk (P-value)	F-value	P-value (0.05 Sig.)
Science	90	63.3	6.97	0.735	—	—	—
Arts	90	64.6	8.12	0.856	0.871	1.261	0.285
Physical Education	90	62.9	7.17	0.756	—	—	—

Similarly, in Table 2 the result shows no significant difference among the three groups, as the p-value ($p = 0.285$) is higher than 0.05. This shows that the groups exhibit comparable levels of external LoC. Therefore, the hypothesis - 'there is a significant difference among post-graduate students of Arts, Science and Physical Education'- is rejected.

Table 3: Evaluation of Internal Locus of Control

Academic Discipline	Group Mean Score	Grade*	Level of L.C.S.*
Science	78.3	D	Average
Arts	79.5	D	Average
Physical Education	80.3	D	Average

*Based on the norms for evaluating Locus of control developed by Bhutia & Nongtdu (2018) [2].

Based on the grading norms developed by Bhutia & Nongtdu, Table 3 shows that students across all three disciplines—Arts, Science, and Physical Education—found under the "average" category level (Grade-D) of internal LoC.

Table 4: Evaluation of Level of External Locus of Control

Academic Discipline	Group Mean Score	Grade*	Level of L.C.S.*
Science	63.3	D	Average
Arts	64.6	D	Average
Physical Education	62.9	D	Average

*Based on the norms for evaluating Locus of control developed by Bhutia & Nongtdu (2018) [2].

According to the Bhutia & Nongtdu (2018) [2] evaluation norms, postgraduate students across Arts, Science, and Physical Education found under the "average" category level (Grade-D) of external LoC, as illustrated in Table 4.

Discussions

The current study explored differences in the locus of control among postgraduate students, from Science, Arts, and Physical Education disciplines backgrounds, studying within the same University. In light of the result, participants from three academic programmes demonstrated an overall "average" level of both internal and external LoC, which

corresponds to a 'D' grade level based on the norms for evaluating locus of control established by Bhutia & Nongtdu (2018) [2]. This indicates that an average or D-grade locus of control is not satisfactory, because the previous scholarly works suggest that students with a higher level of locus of control tend to have better academic performance (Landis *et al*., 2007; Richardson *et al*., 2012) [7, 12]. With respect to internal LoC, students of Arts, Science, and Physical Education did not exhibit group differences. This findings indicate that the perception of personal effort and control over life outcomes, including success and failure, is consistent across three academic fields. This present finding also corroborates the study by Abdul Raffie Naik (2015) [1] which reported no significant differences in locus of control across disciplines. Other studies, Ghasemzadeh & Saadat (2011) [5], attribute a lower internal locus of control to hierarchical fields, such as science, often blaming rigid academic structures. This finding highlights that internal locus of control is relatively uniform among postgraduate students of Science, Arts, and Physical Education, suggesting that academic discipline alone does not significantly shape this psychological construct. Similarly, for the external locus of control, no difference was found among the Arts, Science, and Physical Education students, as indicated by the one-way ANOVA result, which showed no statistically significant difference ($F = 1.261$, $p = 0.285$). This non-significant result suggests that the observed variation is attributable to mere chance, supporting the null hypothesis that no true difference in external locus of control exists across these academic disciplines. The result of this study corresponds with the results reported in earlier research; for instance, Findley and Cooper (1983) noted that although academic discipline can impact certain psychological traits, locus of control tends to remain relatively unaffected by the study area. Furthermore, emphasised that locus of control is more closely tied to individual personality development than to transient situational variables. Moreover, the present findings may diverge from those of other researchers; for example, suggested that students in competitive or rigid academic settings might develop more external control perceptions due to a perceived lack of autonomy.

Conclusion

Using a hypothetico-deductive approach, the result indicated that postgraduate students of the three academic fields did not differ significantly from one another. Students across all three academic disciplines were identified under the category of "average" (Grade 'D'), as per the LoC norms established by Bhutia & Nongtdu's (2018) [2]. This further suggests that students having an average level of internal Loc may believe that their success is controlled by external factors, and not by their own action or effort. This has been corroborated by several past studies, which advocate that individuals with a stronger internal locus of control tend to exhibit superior academic performance (Landis *et al*., 2007; Richardson *et al*., 2012) [7, 12]. Furthermore, the findings suggest that fostering a strong internal locus of control within educational settings may contribute to enhancing student motivation and academic achievement.

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