SELF HANDICAPPING TENDENCY AMONG HIGHER EDUCATION STUDENTS: INFLUENCE OF ATTRIBUTIONAL BELIEFS, LEARNING ENVIRONMENT AND PERFECTIONISM

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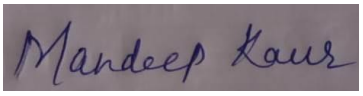
DECLARATION

I declare that the thesis entitled "**SELF HANDICAPPING TENDENCY AMONG HIGHER EDUCATION STUDENTS: INFLUENCE OF ATTRIBUTIONAL BELEIFS, LEARNING ENVIRONMENT AND PERFECTIONISM** has been prepared by me under the guidance of Dr. Rajib Chakraborty, Associate Professor, School of Education, Lovely Professional University, Phagwara, Punjab and co-supervisor Dr. Navdeep Singh Raji, Assistant Professor, M.K. College of Education, Jalandhar, Punjab. No part of this thesis has formed the basis for the award of any degree and fellowship previously.



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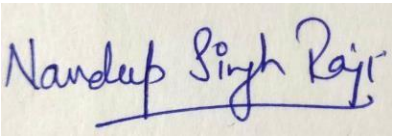
CERTIFICATE

We certify that Mandeep Kaur prepared her thesis entitled entitled "**SELF HANDICAPPING TENDENCY AMONG HIGHER EDUCATION STUDENTS: INFLUENCE OF ATTRIBUTIONAL BELEIFS, LEARNING ENVIRONMENT AND PERFECTIONISM"** for the award of Ph. D. degree of the Lovely Professional University under our guidance .She has carried out the work at the School of Education, Lovely Professional University, Phagwara, Punjab.



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My deep senses of reverence to my brother **Commanding Officer Gurbinder Singh Suri,** ,my elegant bhabhi Dr .Ramandeep Kaur Suri ,mother Mrs.Devinder Kaur Suri , my husband and my son Pushkar and my doll Arshnur who bestowed me with their wishes,.

Date…….. **Mandeep Kaur**

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ABSTRACT

Education is the process of giving or receiving the systematic instructions through which a child acquires a knowledge, skill and experience in a school, university or in a similar environment. Education is also used to refer both to a process and to product .As a product Education means the sum total of knowledge, skills ideal and values that are acquired through learning .As a process ,it refer to the act of developing their components in the individual .When compared to school education, it is the university level higher education which is instrumental in providing the work force to be nation at the earliest. In this context, investigation of issues at the higher education level become relevant with respect to the Learning Environment and perfectionism of the higher education students, to find out progress of every nation. Also higher education provide people with an opportunity to reflect on social ,economic, cultural ,moral and spiritual issue facing humanity. In the present study, a specific issue related to higher education level was studied involving the influence of Attributional Beliefs, Perfectionisim and Learning Environment on self-handicapping tendency of undergraduates. The objectives of the study were, to explore the self-handicapping tendency of the higher education students, to study Attributional Beliefs, difference among higher Education students in their self- andicappingtendency attributional beliefs, learning environment and perfectionism on the bases of gender, locality and discipline and to find out the influence of attributional beliefs, learning environment and students, the self-handicapping scale developed by the researcher, consisting of two perfectionism on self-handicapping tendency of the higher education students. It is a descriptive study and designed using stratified random sampling .The respondents were drawn from Arts, commerce and science streams from the different regions Majha, Malwa and Doaba regions of Punjab. To measure the self-handicapping tendency of higher education dimensions and 12 items, validated using exploratory factor analysis and confirmatory factor analysis. For measuring the attributional beliefs of the undergraduate students, the Revised Causal Dimension Scale" (CDSII) originally developed by McAuley et al. (1992) and adapted in the Indian context by Bhalla and Kumar (2019) was used. The tool has four dimensions namely "Locus of Causality, Stability, Personal Controllability and External Controllability", with each dimension containing three items respectively, making the scale length of 12 items. The Big three perfectionism scale originally developed by Smith (2016) was selected to measure the Perfectionisim containing 45 items and validated using item response theory based tool validation technique. The college University Environment,

originally developed by Dianne Lynn Williams (1997), with 112 items covering 16 displayed decent reliability estimates. Post data analysis, the major findings of this study were that academic variables learning environment, perfectionism and two dimensions of attributional beliefs – Locus of Causality and External control of the college students simultaneously predict the self-handicapping tendency of these students with unit variation in the predictor variables bringing 5.8% change in the criterion variable, found out using multiple linear regression analysis. None of the predictors displayed multicollinearity. These variables also predicted the dependent variable in their own right estimated through simple linear regression based path analysis. The learning environment emerged as the single most vital predictor of the regression model contributing explanation of 41.29% variance in the self-sabotaging tendency variable, Locus of causality dimension of Causal attributional beliefs variable at 19.86% of variance explained, and perfectionism uniquely explaining 10.22% of variance, estimated through the application of the statistical technique of Element analysis. The combination of learning environment and perfectionism explained 14.3% variance and the two dimensions of Causal attributional beliefs, Locus of Causality and External control explained 13.3% variance in self-sabotaging trait of undergraduates. The results of statistically significant mean differences in the four variables with respect to gender, discipline and locality are also presented along with the educational implications of each of the findings. All the four variables of perfectionism, learning environment, attributional beliefs and self-handicapping are related to the nebulous construct of self-regulated learning in tertiary level (Ashraf et al., 2023; Bhalla and Chechi, 2019; Kurtovic et al., 2019; Dong et al., 2023; Song, 2018; Amani and Kiani, 2017), and hence the present study bears extreme academic relevance. Also, the studies on the economic impact of universities through Gross Domestic Product (GDP) have shown that presence of these quality knowledge centres can not only produce qualified human capital but also promote healthy democratic culture in the nation (Valero and Van Reenen, 2018) However, until the learning environment of these universities continue to maintain their high standards and promote certain critical psychological traits in the students at the tertiary level like Perfectionism and Attributional beliefs, as outlined in the study, the students pursuing various courses in these institutions can develop undesirable qualities like self-handicapping tendencies. Such eventualities can severely impact the investments made on higher education and the prospects of getting tangible return of investment in future. It is hence imperative on the part of the higher authorities associated with the

tertiary level of education in this country to secure thriving learning environments, where students beaming with intrinsic causal attributional belief and adaptive version of perfectionism can perform to their optimal best in academics and successfully stay away from any of the damaging consequences of self- handicapping tendencies on them.

Keywords: Self handicapping, Higher Education, Perfectionism, Learning Environment and Causal Attributional beliefs.

CHAPTER- 1

INTRODUCTION

Education is the systematic process of imparting or acquiring instructions, where individuals, typically children and young adults, gain knowledge, skills, attitudes and experiences. This occurs within formal institutions such as schools or universities, fostering an environment conducive to learning. Educational pursuits are critical for the progress of a nation, as it empowers the youth to contribute to the greatness and glory of their society. Moreover, following the path of education is integral for creating a civilized and socialized community.

The term "education" encompasses both a specific and a wider sense. In its specific sense, it denotes formal learning — a deliberate process conducted by societal educational institutions such as schools and colleges to transmit the society's cultural heritage, including accumulated knowledge, values, and skills, from one generation to the next. In its wider sense, it is viewed as a lifelong process. Learning is not confined to formal educational settings alone; a significant portion of human life involves informal learning experiences within the home, society, and interactions with peers. Therefore, any positive and valuable influence on an individual's mind, character, and abilities throughout their life can be termed 'education.' The term can be employed to refer to both a process and its product. As a process, it signifies the active development of components like knowledge, skills, ideals, and values within an individual. As a product, it represents the acquisition of these components through learning.

1.1 IMPORTANCE OF HIGHER EDUCATION

In the era of globalization, India stands as a developing country with a pivotal emphasis on primary education as the fundamental catalyst for its progress. While the foundation of a nation's development lies in primary education, the significance of higher education cannot be understated. Higher education plays a crucial role in the success of a country, contributing to its growth by imparting specialized knowledge and cultivating a skilled labor force.

Barret (1992) identifies four key dimensions of the concept of higher education. Firstly, higher education is viewed as the generation of qualified human resources. Secondly, it serves as training for careers in research. Thirdly, higher education is perceived as the effective management of teaching. Lastly, it is seen as a means of adapting to and navigating life's continuous changes.

The primary objective of higher education is the promotion of national unity, discipline, and the initiation into a new way of life. Higher education affords individuals the opportunity to contemplate issues encompassing social, economic, cultural, moral, and spiritual aspects confronting humanity. It plays a pivotal role in fostering the comprehensive development of individuals and is, therefore, a vital factor for their survival. There are several academic variables which play their role in either elevating or decreasing the experience of higher education. One such variable is self -handicapping.

1.2. THEORETICAL BACKGROUND OF SELF HANDICAPPING

The tendency of self-handicapping in an individual can be explained as a behavioral manifestation characterized by the intentional development of impediments to one's own performance. This strategic approach aims to attribute potential failure to external impediments rather than personal characteristics like ability or intelligence. The concept of self-handicapping was initially introduced by Bergles and Jones (1978), emphasizing its behavioral nature involving the deliberate introduction of obstacles. Self-handicapping is one of the fundamental constructs of the sub-discipline of educational psychology and has been studied and mentioned in psychological sources since 1960 (Schwinger et al., 2022; Kolditz and Arkin, 1982). It is a defense strategy where an individual divices impediments for self prior to delivering a performance so that the master can be manipulated after the completion of the performance. This undesirable trait can be both assertive and behaviorale (Melhem, 2022; Funkhouser and Hallam, 2022). Behavioral self-handicapping is defined as “intentional, observable, and often external actions that directly affect performance”. Assertive self-handicapping, on the other hand, is more random and internsic in nature, not bringing down the probability of optimal performance per say, but rather restricted to lame excuses (Fadhli et al., 2021).

According to Gadbois and Sturgeon (2011), self-handicapping tendency serves as a method for individuals to set up an external cause for potential task failure, thereby preserving their self-esteem. This involves actions or choices that increase the chances of exporting failure while internalizing achievement. The association between self-esteem and self-handicapping has been explored in various studies (Midgley, Kumar, and Urdan, 1996; Gadbois and Sturgeon, 2011), though the magnitude and nature of this relationship can be explored further, with certain sources citing the reason to a lot of worrying associated with capability (Zuckerman and Tsai, 2005). Studies have disclosed that those using self-handicapping can better explain how this trait can be used as a mechanism to strike balance between increased chances of failure and safeguarding one's image and self-esteem in public (Rhodewalt, 2008). The primary purpose behind such self paralyzing behaviors is to by-pass any causation of failure while asserting achievement, irrespective of the actual result (Rhodewalt, 2008). Genderwise, men showed a higher probability of self-handicapping compared to women.

One of the most repeatedly discussed theoretical underpinnings to explain self-handicapping trait has its origin in Covington's theory of self-worth (Covington 1984, 1992). As per this theory, the schooling system always maintains a "zero-sum scoring system" by keeping the rewards bare minimum. This exercise results in a single student emerging as the winner and the rest of the colleagues doomed to be the losers (Covington 1992, p. 131). Consequently, individuals base their self-worth from childhood to adulthood, by developing two vital values in life, namely, perceived abilities and perceived performance. There are two prevalent assumptions behind this theory, which are that in the society, an individual's self worth is determined from his or her achievements, which are direct manisfestations of the possessed ability, and human behavior is primarily motivated through self-enhancement, where individuals always seek to increase their success which proves their exceptional abilities, and stay away from failure whenever possible, which is a reflection of lacking ability. According to Covington (1992) and Covington and Omelich (1979), placing of effort can have two-way consequences. Students are by their very nature expected to place efforts to avoid guilt and punishment from the teachers. Also, placing of efforts is filled with the risk of meeting with failure involving shame, humiliation and an inference of poor ability by others. In this way, students are left with two choices,

where they either face punishment by refusing to make an effort, or risk being judged as lacking ability in the case of making an effort. Such a predicament forces the students to take steps to protect their self-image, and this is where enters the undesirable trait of self-handicapping as an excellent defense strategy (Covington, 1992). In another theoretical model, Covington and Omelich (1991) divided American learners into four types. As Figure 1.1 shows, students with their focus cited on achievement, are driven from within. Learning is sacruccint to these students and they place their optimal efforts in this direction, instead of making amendments in their goals so as to outperform in comparison to others.

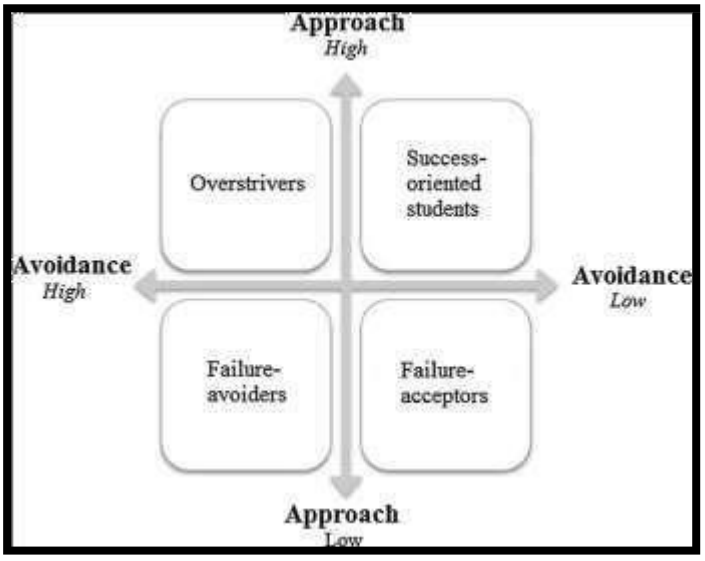

Fig. 1.1 Covington and Omelich Model (1991) as mentioned in Covington and Mueller (2001)

In this regard, these type of students are very different from the students of the rest of the classifications. Overstrivers suffer from high anxiety level of failure and reel under the pressure of high expectations of success. This tendency is rooted in an expectations of pride and a desire to outperform others, by using different duvious and strategic means, such as cheating, rote memorization, selecting an extremely easy tasks, surrounding oneself with irrelevant details, and setting low expectations. Failure-avoidant students, as the name suugests, are highly driven to stay away from failure, also not having any expectations of success. These subjects choose relief from a task instead of associating any pride aspect to it and hence employ various self-protective strategies like making excuses, not participating, refusing to exert effort

and setting extremely difficult or unattainable goals. The last category students, namely, Failure-accepting students, maintain their self-worth and already developed a state of lack of ambition or proving of abilities. These subjects display the state of learned helplessness as an attributional style and blame uncontrollable factors and past failures for their present state of poor abilities. It is very difficult to motivate these underachieving students who choose to resign to their fate, insteading of remaining perserverant.

The "Motivation and Engagement Wheel" theory integrates the two vital variables of motivation and engagement into a model of multiple dimensions (Liem and Martin, 2012; Martin 2003, 2010).

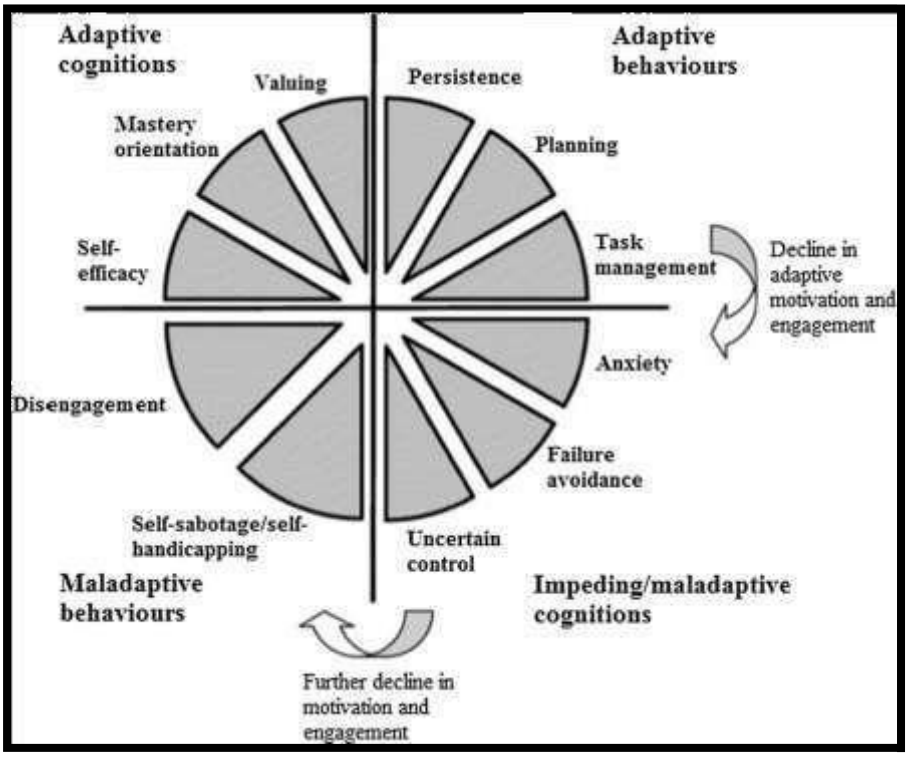

***Fig. 1.2* "The Motivation and Engagement Wheel (Martin 2010)"**

The representation has four parts consisting of equal number of higher-order factors, namely, the "*adaptive-maladaptive*" and "*behavioral-cognitive*" axes. These four parts have 11 first-order factors within them respectively. As a result, four patterns of trait are formed. The "*adaptive cognition*" refers to an appropriate attitude toward tasks. The "*adaptive behaviour*" includes a variety of positive behavioral plannings used for task performance and learning. The "*obstructive or maladaptive cognition*"

refers to a state of mind that stops from engaging adequately in tasks. The "*maladaptive behaviour*" involves application of harmful plannings for task completion. This theory suggests that whenever there is a fall in adaptive cognition and behaviour, it leads to defensive or maladaptive cognitions. When this fall is severe, it results in maladaptive behaviour. The environment of the school is such that it forces the students to regularly display their performance and ability in front of teachers and parents alike. Such stressful situations in turn encourage the students to adopt strategies which handicap the self and protect the self too. Owing to this reason, self-handicapping has been extensively studied in the school context and is still remains to be the most popular context of research in this variable, with the available literature categorized, either as "*behavioral self-handicapping*" or "*self-reported handicapping*" (Leary and Shepperd, 1986; Arkin and Baumgardner, 1985; Hirt et al., 1991). The former form of self-handicapping is overt in behaviors like enjoying hours before an important exam, while the latter form of self-handicapping primarily involves only statements on the existence of efficiency-impeding causes like not having enough time to prepare. Students involved in self-handicapping get involved in these activities to stray away from their abilities. When self-handicappers claim that in the light of enough preparation, they would have performed better, it prevents them from questioning their abilities because they present an obstacle that provides an obvious explanation for failure.

In school settings, students mostly display the form of self-handicapping which is behavioural in nature, where they show obstacles or excuses towards performing a task (Tice and Baumeister, 1990; Thompson and Richardson, 2001). When it becomes severe enough, the subjects under perform on a regular basis (Nurmi et al., 1995; Rhodewalt, 1990). Moreover, display of effort in excess can also lead to self-handicapping if the result of the effort is jeoperdized by failure later. Another well documented performance hampering strategy is Procrastination, although it cannot be equated to self-handicapping Lay et al. (1992) inspite of the frequent co-existance of bth the variables among under performing students (Beck et al., 2000; Ferrari and Tice, 2000; Steel, 2007; Strunk and Steele, 2011) .

When unachievable goals are set, and the individuals end up not achiving the goals, it does not appear to be a true failure and hence make up another disguised form of self-handicapping strategy (Greenberg 1985). Substance abuse like alcohol and drug

consumption, form a cause to under perform and stray away from abilities, and hence represent another form of self-sabotagging (Berglas and Jones, 1978; Tucker et al., 1981).

Subjects selecting behavioral self-handicapping dangerously get convinced that they would eventually fail owing to their perception of low self-efficacy and hence are guided by a "nothing to lose" strategy. Similarly, subjects displaying self-reported handicapping neither anticipate failure nor are concerned about factors which can impede performance. Both the types of this trait, self-reported and behavioral, are affected by gender, with males having greater propensity to show this behavior than females (Hirt et al., 2000; Dietrich, 1995; Hirt and McCrea, 2009; Martin, 2004; Lucas and Lovaglia, 2005). Potential explanation for such a finding is that for women effort reserves a greater value at personal level and as a social norm and its absence stands more unacceptable to them (McCrea et al., 2008a, b). However, there is less knowledge regarding other probable factors that separate behavioral and self-reported forms of disabilities and there is enough room for gaining more clarifications on this subject. While the former form of self-handicapping actually represents self-destruction, the later is not so destructive. Hence, various antecedents and modes of prevention can prove to be useful and effective in both the cases.

In the academic context, stigmatization and stereotyping make up issues that require special emphasis, owing to their highly negative and harmful impacts on the student community (Aronson et al., 2009). Stereotyping promotes self-handicapping as a self-protective mechanism (Midgley et al., 1996; Stone, 2002). Crocker and Major (1989) brought an important aspect in light where they submitted that while psychological theories predicted low self-esteem as a trait to be present in subjects of stereotyping abuse, empirically such hypothesis lacked support. The authors offered an explanation for this observation by stating that such subjects resorted to protection of their self-esteem by ascribing undesirable feedback to harmful perceptions of their group. Burkley and Blanton (2008) reported higher display of self-esteem by women performing math tasks when they were provided feedback on their failure and when they were made to recollect the general negative stereotype in the society about the math related ability of women, in comparison to women subjects were not made to recollect the same. .

Kim et al. (2012) showed that women concurred more with statements related to their poor mathematics related ability when they expected that a difficult math task would be given to them, in comparison to those women subjects who anticipated easier maths tasks. Similar findings held good for male gender in the case of verbal ability. The authors of this study hence pointed towards an important insight on the ways self-handicapping plays out, where the subjects transfer the cause of failure from the self, involving one's own capability, to a more external element involving what the individual possesses similar to other members of a group to identify with it. Such results originate questions on the existence of a third form of self-handicapping apart from behavioral handicaps and self-reported handicaps (Dolinski, 1996). The beliefs associated with the subjects alone here are personal in nature and not put in words, hence giving more credence to the observation that handicapping the self is fundamentally a tool to safe guard the self than being an impression management strategy.

From the beginning, the context, whether private or social, in which self-handicapping occurs was of major interest to the researchers. Sufficient body of literature revealed that this behavior is more probably displayed in public (Kolditz and Arkin 1982; Tice and Baumeister 1990; Brown and Kimble 2009), implying that this undesirable trait is a mechanism of presenting the self in good or safer light in society. However, investigators of self-handicapping also concur with the observations of Tetlock and Manstead (1985) who stated that “the dichotomy between impression management and intrapsychic processes is arbitrary” (p. 59). In other words, when made to reevlaute a situation through reflection, individuals do admit that they self-image, and especially their self-esteem, are influenced by how others look at them. Also, processes like self-perception and cognitive dissonance play out their roles here in this context. Jones et al. (1981) empirically demonstrated that individual’s self esteem increased or decreased in relation to either self-enhancing or self-deprecating form of strategic self-presentation adopted by them.

However, a vital question is how the individuals involved in self-handicapping look at themselves. In this context, Self-handicapping is successful in convincing its victim that external uncontrollable factors lead to their under performance and not the individual’s capability and hence the person can be less harsh on self than otherwise (Levesque et al. 2001; Smith and Strube 1991). Luginbuhl and Palmer (1991) reported

direct impact on the subject's judgement about own ability along with the expected task performance, under the influence of self-handicapping tendencies. These self-handicapers were found to be smarter and found to perform better in future situations. However, the scenario was different in the case of subjects who self-reported handicapping. Rhodewalt et al. (1995) found that in the presence of handicapped targets, observers rated tasks to be less favourable, in comparison to the same task performed by nondisabled person. Such a result implies that judgments of the observers get influenced in the presence of taregts who keep the impediments associated with the tasks in check. Also, targets displaying no effort were evaluated way more undesirably both impression and competence wise in comparsion to those targets who had the excuse of under the influence of anxiety or drug side effects (Levesque et al. 2001 ; Rhodewalt et al. 1995).

Furthermore, subjects of low dispositional self-handicapping and low self esteem were found more probable to transfer their focus to the impediment rather than the ability of the target while explaining the seen performance, when compared to subjects having increased levels of handicapping and esteem in their disposition (Martin et al., 2003b; Smith and Strube, 1991).

Favourable judgements associated with self-handicappers come at the price of complete assessment of their personality (for instance, "that kid is smart but lazy"). These individuals are treated to be irresponsible, insecure, unmotivated, and not chosen as study buddies (Levesque et al. 2001; Luginbuhl and Palmer 1991; Park and Brown 2014). In the context of behavioral self-handicappers and those depending on them, the judgements are far more unfavorable (Cox and Giuliano 1999) and is crisply stated by Rhodewalt and Tragakis (2002b), as "the self-handicappers are willing to accept the label of drunk or lazy in order to maintain the more central label of being competent" (p. 110).

Assessments of self-handicapper and the gender of the observer of this tendency also vary. Hirt et al. (2003) found that such an observer did not get affected by the personal characteristics of the subject However, the gender of the observer played a role in judging self-handicapping (Milner, 2009). For women, this trait was not bearable and felt the lack of self-control, discipline and effort as the reasons behind it, following by punishing consequences. For men it was relatively acceptable. Park and

Brown (2014) investigated the influence of status and age on the perception of self-handicapping and found adult workers to detaste this trait in their fellow co-workers, with such a finding having implication in the educational workplace towards fellow school teachers.

Empirical evidences are aplenty which indicate that the explanation of self-handicapping also lies in the "*Achievement goal theory*" (Dweck, 1986; Elliot, 1999). This theory proposes that the behaviour of an individual is goal driven, which is of critical importance at individual level. However, the goals are also driven by the individual's own intelligence theory, which is either immutable, within (fixed/entity implicit theory) or improveable, variable (incremental implicit theory (Dweck and Leggett 1988; Dweck 2006). This theory assumes that once the subjets consider their abilities to be innate and immutable, they stop investing energy in self-development, and favourably showcase their capabilities before self and others. This behaviour leads to self-protection through self-handicapping in comparsion to those subjects who consider their capabilities to be variable and improvable (Shih 2011; Ommundsen 2001; Ommundsen et al. 2005; Rickert et al. al. 2014; Rhodewalt 1994). Such a trend held good even when the subjects were supplied with the information about the nature of the ability possessed by them, in place of allowing the subjects to arrive at any judegement in this regard by own. Even gifted students resorted to self-handicapping once they they informed about their immutable abilities than those who were informed of variable ability irrespective of the personal beliefs held by the subjects (Snyder et al. 2014). However, De Castella and Byrne (2015) found that subjects' specific implicit theories about their own abilities forecast their performance, motivation, and self-handicapping traits better than the general implicit theories of ability. Also, under precarious conditions, even subjects of the former group resorted to self-handicapping when they realized that their self-worth and self-esteem heavily relied on their academic achievement (Niiya et al. 2010).

According to Dweck and Leggett (1988), individuals direct their attention towards specific types of goals under the effect of their own theories of ability. The primary kind of goal, namely, the "*learning goals*" cause the subject develop new capabilities with the stress placed on learning and comparison in a performance situation is with self. On the contrary, the second kind of goal called the "*performance goals*" stresses its efforts in showcasing of personal abilities in comparison to the capabilities of

others (Dweck, 1986). Elliot (1997) also proposed the concepts of "*mastery goals*" and "*performance goals*" in the same lines. While the incremental theories of ability create learning goals, the entity theories create performance goals. Empirical evidences also found that pursing of performance related goals lead to the later display of self-handicapping (Midgley et al. 1996; Martin et al. 2003a; Urdan and Midgley 2001; Rhodewalt 1994). These subjects also focussed on the product of learning instead of the process and compared their performance with others with a higher display of self-harm propensity, with self-harm being a means of achieveing shortcut sucess. In contrast, subjects setting learning/mastery goals for gaining new capabilities and for self improvements and comparison with self, were having lesser chances of getting effected by self-sabotagging (Martin et al. 2003a; Urdan and Midgley 2001; Midgley et al. 1996; Rhodewalt, 1994; Schwinger and Stiensmeier-Pelster 2011). According to Brown et al. (2012), specifically in women, growth motivation contextually affected self-handicapping behavior.

The theoretical perspective of "*Approach and Avoidance goal*" types better explained the relationship between self-handicapping and goals in comparison to learning/mastery and performance goals perspective (Elliot and Church, 1997; Elliot and McGregor, 2001). When combined, these perspectives defined four typical objectives. While subjects adopting performance-avoidance goals, seek to get way with worse performance in comparsion than others, subjects adopting performance-approach goals, perform better when compared to others. Subjects attuned to Mastery-avoidance learning goals, cannot acquire incomplete knowledge, and those seeking learning/mastery-approach goals, remain more focused on learning acquisition and self-development. Out of these four combinations, the performance avoidance goal seekers were empirically found to end up as self-handicappers. Deep fear of failure coupled with a strong desire to avoid it, rises the probability of display of self-handicapping in subjects as found true in Norwagian, Taiwanese, the United States and the United Kingdom contexts(Chen et al. 2009; Ntoumanis et al. 2010; Urdan 2004; Ommundsen 2004; Urdan et al. Midgley 2001; Elliot et al. 2006; Shih 2005). These findings are found to be true with regard to the nature of performance goals and the type of self-handicapping that is motivationally based on "*avoidance-oriented*" goals (Elliot and Church 2003; Martin et al. 2001). However, Tannenbaum (2007) reported that individuals employ self-handicapping as a mechanism to accomplish

tasks with minimal to no expenditure of efforts (work avoidance goal; Elliot 1999), and hence this behaviour implies absence of any achievement related goals.

Owing to its relative newness in perspective to the literature, studies showing the link of approach-avoidance goals distinction with handicapping of self behavior are limited. Chen et al. (2009) supported that learning/mastery goals display an inverse covariance with this behavior, although findings with respect to performance-approach goals association with this trait, are inconsistent, with positive (Leondari and Gonida 2007; Chen et al., 2009), negative (Ommundsen 2004; Urdan 2004) and zero correlations (Midgley and Urdan 2001) mentioned in the literature. Such inconsistencies in the relationship can be owing to the nature of performance approach goals, which essentially need not be maladaptive always (Midgley et al. 2001), with the manifestation of their undesirable consequences dependent on their association with low or high study related goals as per the multiple goal theory (Ommundsen, 2004) and the classroom environment (Dorman and Ferguson, 2004). Although, the insightful findings of Hulleman et al., (2010) research has to be discussed at this juncture. They found that the goals can have normative and appearance components, dealing with normative comparison or capability confirmation, and researchers may not pay enough attention to this distinction. Also, the instruments measuring Goal orientation offer varying significance to these components, making findings less viable. Those scales of goal orientation which stressed on the normative component found positive correlation with performance and negative covariance existed between performance and scales stressing the appearance component. This evidence associates self-handicapping with performance approach goals and reveals that the behavioral and self-reported types of handicapping, may differ owing to the varying components motivation involved.

The goals essential with respect to the environment like the goal structures do have impact on the motivational strategies of the students. Ames (1992) presented the theory of goal structures which stressed on the cues given by the social environment impacting the students's goal orientation. Owing to their direct impact on the goal orientations of the students, some researchers attributed relatively more significance to goal structures (Midgley and Urdan 2001). Lovejoy and Durik (2010) figured that self-handicapping can be especially caused by performance-avoidance goals elements in the environment, further empirically proven from the studies by (Urdan 2004;

Coudevylle et al. 2015; Midgley and Urdan 1995; Standage et al. 2007). Learning/mastery goal structure is found to either negatively predict self-handicapping (Midgley and Urdan 2001) or have no association with it (Urdan et al. 1998) true in the cases of both students and teachers as study samples.

Quantative study findings show that though this tendency as a strategy provides quick benefits, it also comes with a heavy price in the long run (Tice and Baumeister 1990; Baumeister and Scher 1988). Literature review on this specific aspect unveals the association self-handicapping shares with performance.

The advantages of self-handicapping, in both its forms, are that it serves well in reducing anxiety and protects the self-esteem (Isleib et al. 1988; Feick and Rhodewalt 1997) of the individual from getting affected in light of performance evaluation and in public appearance. Owing to these dividends, the subjects continue to go along with this undesirable trait instead of working on improving their performance and hence maintain self-worth (McCrea and Hirt, 2001). These findings are revealed in studies involving both self-reports and objective measures as communicated by Rhodewalt (1990). Self-handicapping affects anxiety in an enabling way, with the social environment expecting less performance from self-handicapping individuals, which inturn leads to reduction of performance related fears in these subjects. Deppe and Harackiewicz (1996) reported that subjects with high self-sabotagging in their nature engaged and enjoyed the task more to perform better when they did not practice earlier. Such a “dampening effect” was also reported in the work by Drexler et al. (1995) who reported that there was less reduction in desirable effects among behavioral self-handicappers in comparison to non-behavioral self-handicappers. However, subjects with low self-handicapping tendencies in them had to practice before performance for displaying more engagement in the task (Deppe and Harackiewicz, 1996).

The advantages of displaying this behavior outweigh the associated costs. While presence of this trait leads to the high probability of developing maladaptive coping strategies like denial, display of ineffective adaptation can cause rise in self-handicapping tendency, thus forming a vicious cycle (Zuckerman et al., 1998). Also, Zuckerman and Tsai (2005) found that self-handicappers can resort to self-blame, escape from accepting the bitter truth and come up with mental pretexts which aid

their status of self-blame. The consequence is that these subjects experience heightened dissatisfaction with their competency, negative mood and more reliance on self-handicapping as a strategy (Smith et al., 2002). Zuckerman and Tsai (2005) reported self-handicappers experiencing reduced work related intrinsic motivation in the long run coupled with low self-esteem, which further aggreviates the usage of self-handicapping, thus the two feeding each other. Both cross-sectional and longitudinal studies reported subjects of self-handicapping displaying poor academic performance and feeling less capable at school and resorting to the usage of the undesirable trait in excess in studies (Eronen et al. 1998; Urdan et al. 1998). Self- handicapping is found to negatively affect the well-being of the educators too (Parker and Martin 2009).

Ryska (2002) found that the level of this trait and its disruptive effects on study related performance of school going students changed as per the self-confidence level of these subjects. For learners who have depleted self esteem, self-handicapping came with benefits in the form of hightened performance which was completely in contrast to the situation of self-confident students. Rhodewalt and Hill (1995) reported that in women the instances of self-handicapping related negatively with their performance in academics in the form of exam score, with contrary results found in men. Mixed relationships between academic performance and handicapping of self hence preveal in the literature (Rhodewalt and Tragakis 2002a,b).

In summary, quantitative works have found negative covariance between this tendency and academic performance in school context in the longer run (Gadbois and Sturgeon 2011; Zuckerman et al. 1998; McCrea and Hirt 2001; Midgley and Urdan 1995; Urdan 2004). It got further reinforced through a meta-analysis study conducted by Schwinger et al., (2014). Superficial or ineffective learning strategies like rote memorization also play its role in the opposite covariance between academic achievement and sabotagging of self in the learners (Warner and Moore 2004; Gadbois and Sturgeon 2011; Thomas and Gadbois 2007; Zuckerman et al., 1998).

In literature, a notable difference exists between two forms of handicapping of self. The first type consists of a certain decline in behavior or the purposeful development of obstacles and is called "*behavioral self-handicapping*" (Standage, Treasure, Hooper and Kuczka, 2007). In this category, individuals engage in actions that

physically hinder their performance. The second type is called "*claimed self-handicapping*", which encompasses verbalized pretexts even when there might not be a tangible impediment (Standage et al., 2007). This form involves individuals providing reasons or justifications for potential failure, irrespective of the actual presence of obstacles. Additionally, studies in the field make a distinction based on the frequency of these behaviors. Trait self-handicapping refers to a pattern where individuals exhibit self-handicapping tendencies consistently across various situations. In contrast, situational self-handicapping occurs less frequently and is limited to specific circumstances (Standage et al., 2007). This classification helps in understanding whether self-handicapping is a stable characteristic inherent to an individual or a response to particular situational factors.

In general, the occurrence of self-handicapping necessitates a situation where an individual needs to carry out an assignment calling display of specific abilities (Rhodewalt, 2008). The performance associated with the situation must be such that it can be comparable with others efforts (Standage et al., 2007), and the chances of failure should carry undesirable consequences for one's self-esteem (Zuckerman and Tsai, 2005). A wide array of behaviors serves as examples of self-handicapping tendencies. These encompass procrastination, withdrawal of effort, avoidance of practice, neglecting opportunities for practice, choosing performance settings that hinder success, engaging in alcohol use, insufficient sleep, and excessive involvement with friends or activities. Behaviors that fulfill the function of self-reported self-handicapping include claiming test anxiety, social anxiety, being in a negative mood, citing traumatic life events, illness, shyness, psychological symptoms, side effects of medications, and emotional and physical symptoms. According to Higgens (1990), individuals exhibiting self-handicapping tendencies are primarily concerned with safeguarding the self. They achieve this by intentionally constructing obstacles that impede optimal performance.

While the motivation behind self-handicapping is undeniably rooted in the desire to protect self-esteem, an alternative perspective in the research provides an additional explanation for the selective use of handicapping in certain situations. According to this viewpoint, handicapping of self tends to be more pronounced in the presence of people or when the result of the effort is disclosed in the public (Shepperd and Arkin, 1989; Hirt et al., 2000; Baumeister, 1984; Baumgardner, 1991; Baumgardner et al.,

1985; Kolditz and Arkin, 1982). In these situations, individuals might prefer more to engage in self-handicapping behaviors as a means of managing the potential impact on their public image and preserving a positive perception of themselves.

According to Kelley's (1972) "*discounting and augmentation principles*", the process of externalizing failure involves attributing the cause to factors such as luck and situational circumstances. By doing so, individuals aim to protect their self-esteem. Conversely, the internalization of success occurs when the cause is attributed to personal effort and ability, leading to an enhancement of self-esteem (Kelley, 1972). This framework highlights how individuals strategically manipulate attributions to safeguard their own esteem in the face of dismal performance and bolster it in the context of success.

Berglas and Jones (1978) carried out an experimental study to show that the type of success feedback received, influenced the participants' choices regarding subsequent performance-affecting substances, showcasing the psychological impact of noncontingent success feedback on subsequent behavior. Slavin (1983) highlighted that self-handicapping tendencies can be influenced or even reinforced by the learner's culture, subculture, or the overall atmosphere of the school. For instance, adolescents might engage in self-handicapping behaviors by diminishing their efforts, driven by the belief that intense studying could be perceived as an undesirable form of competition with their peers. This aspect drives home importance of cultural and contextual factors in moulding individuals' tendencies toward self-handicapping.

Indeed, the perspectives on the goals of self-handicapping vary among researchers. While some, like Berglas and Jones (1978), argue that this behavior serves both attributional goals—protecting self-esteem and enhancing self-worth—others (Murray and Warden, 1992; Isleib, Vuchinich, and Tucker, 1988; and Mayerson and Rhodewalt, 1988), propose that self-sabotagging basically serves self-protection goals rather than obbjectives of self-enhancement. This divergence in viewpoints underscores the complexity and multifaceted nature of self-handicapping motivations, with different researchers emphasizing distinct aspects of its underlying psychological processes.

According to Berglas (1986), individuals typically exert efforts to attain and uphold a positive self-evaluation, aiming to perform at their best and thereby garner the approval of others. However, there are instances when individuals do not achieve the desired level of success. In such situations, various psychological mechanisms, including self-handicapping, may come into play as individuals navigate the complexities of self-evaluation and societal approval.

Additionally, Rhodewalt et al. (1991) conducted a study to investigate the influence of "*discounting and augmentation principle*" in the safeguarding of self-esteem related to self-handicapping. Their findings revealed that, following receiving of feedback pertaining to their failure, individuals characterized as high self-handicappers, irrespective of the level of esteem, tended to discount attributions related to ability. In contrast, after receiving success feedback, only increased self-handicappers with elevated levels of self-esteem demonstrated an augmentation of ability attribution. This outcome suggests that the motivation for self-protection appears to be more dominant than the desire to improve the self in the context of self-handicapping.

Deppe and Harackiewicz (1996) emphasized the significant impact of performance outcomes on individuals. The results of performance are highly valued and carry crucial implications for people. Success is linked to various positive value related outcomes, like pride, happiness, competence, and efficacy. Failure on the other hand activates negative value related outcomes like sense of weakness, shame, sadness, and feelings of incompetence. This association between performance outcomes and the accompanying emotional and psychological responses underscores the profound influence that success and failure can have on individuals.

Feick and Rhodewalt (1997) argued that clinical studies mostly focused on the self-protection dimension of self-handicapping while neglecting its self-enhancement function. In response, they performed a field based study on using the discounting and augmentation principle, to investigate the effects of self-sabotagging on attribution of capability and self-esteem. The results indicated that individuals with high self-handicapping tendencies reported more pretexts before the test. Also, among failing students, self-sabotagging was linked with higher levels of self-esteem and discounting ability attribution. In context of successful students, self-sabotagging was linked to enhanced self-esteem and the augmentation of ability attribution. This

suggests that self-handicapping can serve both self-enhancement and self-protection functions, with its effects varying based on individual performance outcomes.

In line with Brown (1998), self-handicapping behaviors, despite diminishing the likelihood of success, serve a purpose by allowing individuals to camouflage their failures. Instead of confronting the actual cause, which may be a lack of ability, individuals engage in self-handicapping to create convenient excuses. This strategic behavior provides a shield against the potential negative impact of failure on one's self-esteem and public image.

Dweck and her collaborators, as highlighted in their work (Dweck et al., 1999), have consistently advocated for the promotion of the concept of intelligence as a malleable trait that can be enhanced through effort. They recommend that teachers and parents encourage this perspective, emphasizing the importance of praising individuals for employing effective strategies. In a related qualitative study, it was discovered that self-handicapping exhibited a positive correlation with test anxiety. Individuals with high self-handicapping tendencies were more prone to behaviors such as procrastination, abandonment, or seeking excuses in the face of potential failure. This suggests a complex interplay between self-handicapping, test anxiety, and various strategies individuals employ when confronted with challenging situations.

Hirt, McCrea and Boris (2003) provided further insight into self-handicapping with a concrete example, where a student chooses to go to the cinema the night before an exam instead of preparing for the same. By adopting this approach, if the student performs poorly on the exam, they can attribute it to the lack of preparation. This serves to obscure any underlying issues related to ability or intelligence. On the contrary, if the student performs well, they may infer that they possess intelligence or ability since they succeeded in the exam without dedicated study. This example underscores how self-handicapping can function as a strategy to manage attributions and perceptions of one's capabilities.

Martin et al., (2003) highlighted that, traditionally, tertiary level students' self-handicapping has been explored in the literature through experimental manipulations or self-report measures. In their qualitative study, they looked for gaining deeper insights into the employment mechanisms of this trait, the underlying causes for involving in such behaviors, and the orientation of goals of subjects of this trait.

Responses from individuals high in this trait revealed various forms of this behavior prior to exams or assignments, including watching television, hanging out, doing household chores like washing the clothes, visiting the dear ones, and leaving study to the last minute. In contrast, subject low this behaviour did not engage in such acts; they were more aware of the soruces of distractions and opted to study at the library to avoid potential disruptions at home like food, people and television. Low self-handicappers also refused social invitations and avoided parties to maintain concentration on their studies. The reasons cited by high self-sabotaggers for engaging in this behavior included escaping from stress, reducing the importance of the task, and giving an excuse-ridden explanation for potential poor performance. In terms of goal orientation, these subjects were driven more by ego and less by task, and harvoured traits like outperforming others by some means or the others in public to get noticed, than genuinely expand efforts in mastering any task. Low handicappers neither require nor understand the strategic use of such behaviors, and hance accept others' self-handicapping at face value.

With regard to the strategic use of self-handicapping mechanism, Hirt, McCrea and Boris (2003) example can be discussed again, where a student chooses to go to the cinema the night before an exam instead of preparing for the same. This strategic decision lets the student to ascribe any potential poor performance to the lack of preparation, thereby obscuring any underlying issues related to ability or intelligence. Conversely, if the student performs well on the exam without studying, they may infer that they possess intelligence or ability. This example highlights how self-handicapping can be employed as a mechanism for managing attributions and perceptions of one's capabilities.

The statement from Warner and Moore (2004) suggests that self-handicappers strategically use impediments as explanations for poor performance in evaluative situations. By attributing poor performance to these impediments rather than incompetence, individuals can shield their self-esteem. Moreover, if a self-handicapper manages to perform well despite the impediment, it can lead to an enhancement of perceived competence. This exemplifies how self-handicapping can serve as a mechanism for shaping attributions and managing the interpretation of one's capabilities in evaluative contexts.

Kimble and Hirt (2005) explored the impact of focus directed inward towards one' self as opposed to focusing the attention on others or the environment while experiencing self-sabotagging tendencies. In their study, they manipulated conditions of both the forms of this focus and discovered that men exhibited higher self-handicapping tendencies when they were in a self-focused condition, contrasting with the behavior of women. This suggests a gender-specific influence of public self-focus on the likelihood of engaging in self-handicapping behaviors.

Lack of certainity on one's competence or ability is identified as another antecedent of self-handicapping (Warner and Moore, 2005). The uncertainty itself prompts the adoption of self-handicapping strategies as a way to cope with the potential challenges or failures that may arise.

Zuckerman and Tsai (2005) also found no significant differences with respect to gender in the display of the trait of self-sabotagging. However, a study by Elliot and Church (2005) found gender to be an important predictor of self-impairment, with a greater propensity for self-impairment for women than for men.

The negative correlation between self-handicap and self-efficacy scores can also be explained by the fact that students may have a certain sense of inferiority (Rhodewalt and Tragakis, 2011), negative feelings and misunderstanding for themselves (Yadak, 2017), who may feel anxiety, tension and despair when faced with a difficult task (Kalyon, Dadandi and Yazici, 2016). Negative correlations can also be explained by the persistence and persistence of individuals in the sample studied, who may lack motivational processes that regulate their motivation. Bandura (1994) pointed out that motivational processes in self-efficacy determine the motivation, goal, amount of effort and consistency to face failure and achieve success. The negative correlation between self-handicapping and self-efficacy is consistent with many previous studies (Kazem, Javady and Masoud, 2013; Firoozi, Zadebagheri, Kazemi et al., 2017).

The studies by Coudevylle et al. (2020) and Gupta and Geetika (2020) highlight the prevalence of self-handicapping in academic settings. Interestingly, both high underperforming and low underperforming students engage in self-handicapping behaviors. These individuals often find themselves in a failure-self-handicap-failure cycle, wherein self-handicapping contributes to reduced effort, leading to a subsequent abandonment of the activity. Despite the significance of self-handicapping

in academic contexts, there is a scarcity of studies and tools in the literature designed to effectively measure this variable. This underscores the need for further research and assessment tools to better understand and address self-handicapping behaviors in educational settings.

Schwinger et al. (2021) performed a met-analysis to figure out the highly probable predictors of the habitual form of this disenabling strategy by scanning 159 studies covering 194 different types of samples. They found that general self-esteem, being afraid of failure and belonging to the personality type of neuroticism and conscientiousness highten the occurance of this undesirable trait in individuals. The study also brougt to attention the significance of the means adopted to measure this trait in the form of its highly psychometrically robust instruments.

Khalid and Ghaffari (2023) stated that self-injurious behavior is negatively associated with academic achievement and metacognitive abilities. The findings also provide directions that metacognition as a mediator plays a significant positive role and is a crucial predictor of increased academic achievement as it determines the partial mediating effect in self-efficacy and the full mediating role and overall impact on self-handicapping behavior. From a gender perspective, self-efficacy, metacognition, and academic performance were higher in females than in males. Self-handicapping was more among male students compared to female students. Furthermore, a significant difference in self-handicapping was demonstrated for students in the art group compared to the science group, while no significant difference was found in self-efficacy, academic achievement, and metacognition for science and art students. This study revealed hidden factors influencing student learning and performance. Self-handicapping behavior is increasing among pupils. It often leads to psychological disorders due to poor academic performance of students. Teachers in academic institutions can improve student performance by providing them with support, encouragement, and positive emotions.

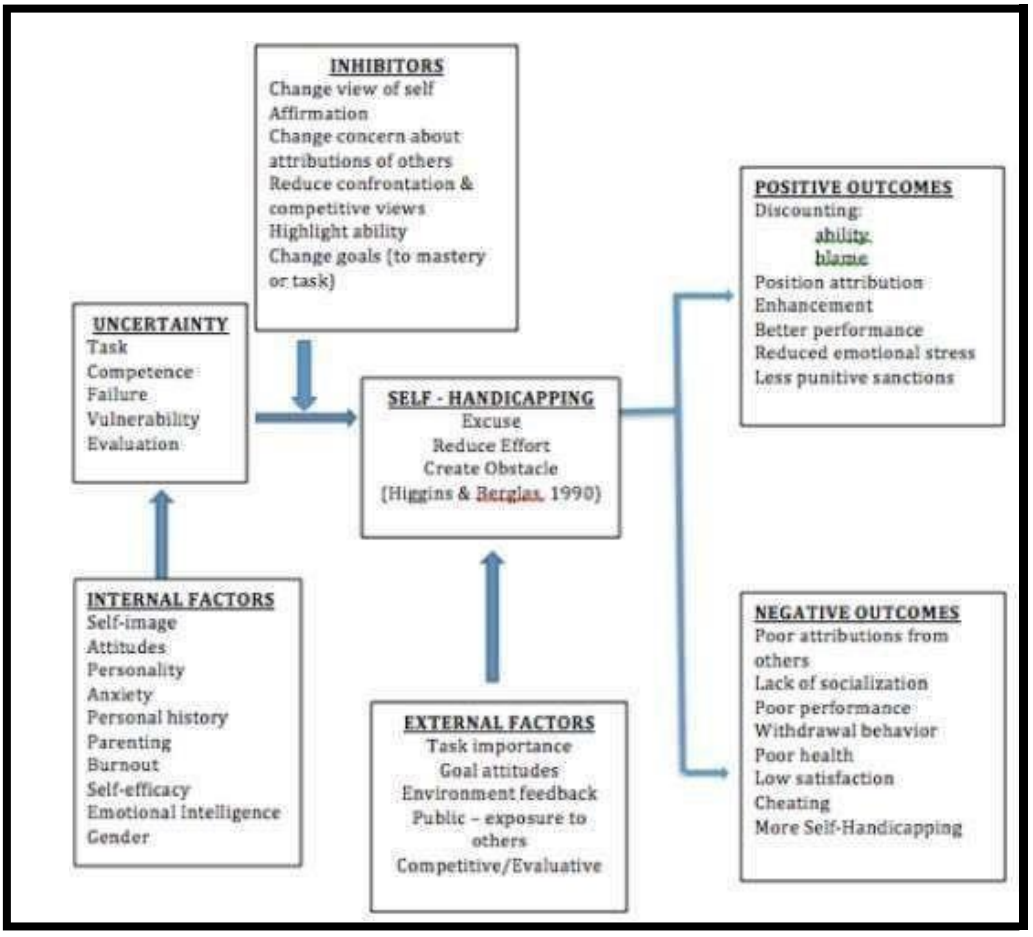

Fig: 1.3 A taxonomy of factors affective and effected by self-handicapping, (Source: Mitchell and Decker, 2017)

While there exists a wealth of knowledge regarding the historical background and repercussions of self-handicapping in academic and sports contexts, our understanding of the underlying processes and potential inhibitors of self-handicapping remains limited.

Numerous studies, as depicted in Figure 1, highlight the role of self-esteem fluctuations as an antecedent to self-handicapping. According to Midgley and Urdan (1995) and Thompson and Dinnel (2007), factors such as self-awareness, self-esteem, ambiguity, anxiety, fear of failure, self-efficacy (Dorman and Ferguson, 2004; Arazzini Stewart and De George-Walker, 2014) and burnout (Akin, 2012), exhibit positive correlations with this maladaptive trait.

Attitudes and one's own past events are significant contributors as well (Garcia, 1996; Leonardelli, Lakin and Arkin, 2007). Essentially, subjects with both low and high

self-esteem resort to self-handicapping, and it's not merely a result of lacking self-confidence. Elevated perception about self grows confidence in achieving success, while its deficiency causes have confidence but in facing failure. This pattern applies specifically to those grappling with anxiety-related self-handicapping.

Parenting styles and characteristics of the family are found by research are linked to this trait (Ross, Canada, and Rausch, 2002). Specifically, strict parenting (Shields, 2008), lack of involvement of the parents (Hwang, 2013), absence of a culture at home (Hardy and Hill-Chapman, 2013), and the flow of feelings within the family (Yang and Mao, 2014) are correlated with it. Narcissism based personality in particular (Finnerty, 2006; Bassak-Nejad, 2009), and traits like conscientiousness, extroversion, agreeableness, and neuroticism in general (Bobo, Whitaker and Strunk, 2013) and purposeless life (Kinon and Murray, 2007) either promote or striffle this trait. A facet of dispositional optimism, Pessimissm, (Mitsunami, 2011) and depression (Levey et al., 2010) also increase it. Moreover, goal orientation has been recognized as a crucial determinant of handicapping the self. A learning-focused goal orientation emphasizes personal growth and skill development, while an achievement-oriented approach involves evaluating one's performance relative to others. Achievement orientation can be further categorized into "*achievement approach*" (executing superiority over others) and "*achievement avoidance*".

Multiple studies explored the nature and magnitude of the association between academic self-handicapping, and self-control along with other psychological variables pertaining to an individual's cognition, emotion and behavior.

1.2.2 FORMS OF SELF HANDICAPPING

According to Arkin and Baumgardner (1985), there are two unrelated forms of self-handicapping, namely, "*behavioural*" and "*self-reported*" types, also known as "*acquired impediment*" and "*claimed difficulties*." Leary and Shepperd (1986) considered the former to be more destructive since it reduces the likelihood of achievement, creates unfavourable impression in the eyes of the others for the subject and is dangerously more convincing in nature. In contrast, the latter form of handicapping is less expensive as it does not necessarily harm the chances of achievement, but is less credible. In this way, while both strategies share the common benefit of attributing causation for poor performances, they differ in their costs.

For example, a student who ascribes his or her failure in the test to high anxiety for it, instead of accepting placing of reduced effort is more probable to be accepted by teachers owing to the apparent vulnerability and the sympathy that goes with it. Thus, the former form of this behaviour is considered more costly than the latter one (Hirt et al., 1991).

According to Lazarus and Folkman (1987), there are two main types of planning to cope or held with distress: "*emotion-oriented and problem-oriented*". Problem-focused coping involves managing stress by addressing and changing the underlying cause, while emotion-focused coping deals with stress by directly addressing the feelings that arise from it.

Hirt, Deppe, and Gordon (1991) investigated individuals' reactions when given the choice between different self-handicapping options: behavioral and self-reported. They examined whether one group of subjects had the chance to train prior to an intelligence ability test, while the subjects from another group were told they were under stress. The results indicated that subjects who chose not to train prior to the test preferred self-sabotagging in their behavior, while subjects suffering from high stress chose self-reported self-handicapping behavior. The choice for latter form of self-disability over former was attributed to its lower cost (Hirt et al., 1991).

The instrument of the discussed trait developed by Jones and Rhodewalt (1982) does not distinguish between two of its forms, and consists of items measuring both the forms. Regarding this trait's outcomes, there are individual differences in the use of its strategies (Feick and Rhodewalt, 1997; Hirt et al., 1991; Lord Walt, 1990; Lord Walt and Hill, 1995; Rhodewalt et al., 1991). The originators of the behaviour argued that its subjects cannot lose, regardless of the outcome, if they prioritize the attribute implications of achievement over actual achievement.

In the study conducted by Hirt et al. (2000), it was observed that hypochondriacal individuals tend to complain about their illnesses and physical symptoms. These complaints serve as convenient excuses in appraisal related situations, offering means of their dismal performance and get extra rewards, like getting noticed by others too. The two types of this behavior discussed in these studies thus differ in their subjected cost and believability (Hirt et al., 2000).

Many researchers distinguished between behavioral handicapping and self-proclaimed handicapping depending upon whether the trait is developed or acquired prior to the assignment of a task (Arkin and Baumgardner, 1985; Leary and Shepperd, 1986; Milner and Steele, 2008; Lovejoy and Durik, 2010; McCrea et al, 2012; and Ferradás et al., 2016). Behavioral self-handicapping involves deliberate inactions, such as not placing efforts (Ferrari and Tice, 2000), substance abuse (Berglas and Jones, 1978), inability to gain from aspects that could improve performance (Deppe and Harackiewicz, 1996) and choosing environments that will inhibit performance (Schwinger and Stiensmeier-Pelster, 2011). Claimed self-handicapping, involves pretending to be ill, shy or anxious. This form of handicapping does not actually increase the likelihood of poor performance (Leary and Shepperd, 1986). Zuckerman et al, (1998) found that handicapping of self was the antecedent of both low self esteem and low academic achievement, even after controlling the baseline values of these dependent variables. They opined that claimed self-handicapping cannot bring down these dependent variables for real. Assessment in the research of, both behavioural and claimed forms, takes place through different means. While the former is assessed through observation, the later is assessed using self-report instruments (Coudevylle et al., 2008). In recent times, they are measured using self-report measures alone more often (Ferradás et al., 2016).

Zhu et al. (2016) examined the association between handicapping and control in self, in the context of 94 Australian tertairy level students and found that the latter was a significant antecedent of the former. Sultan and Kanwal (2014) studied how academic self-handicapping related with fear of negative evaluation and self-esteem, gender-wise in 219 college students of Pakistan and found a positive covariance between the studied variables. Yavuzer (2015) reported that self-handicapping in studies predicted self-control, which in turn predicted cognitive distortions in Turkish college students. Al-Rabee and Atyyeh (2016) found positive covariance between emotional balance and self-control in 749 Jordanian university students. In China, Wang et al. (2017) investigated the impact of differences in age and gender of the 2910 adolescents on their self-control and found that boys displayed better self-control in comparison to girls, with such a trend decreasing with rise of age of the subjects from 12 to 17 years. Ghanem (2017) examined 300 Jordanian university students, with respect to their association of learning styles with academic self-handicapping and found these

students to possess moderate level of self-handicapping and men possessed this undesirable trait more than women. Akar et al. (2018) investigated the link between self-handicapping in studies and negative positive perfectionism, with self-efficacy in 350 Turkish university students and found a negative covariance of self-handicapping in studies with positive sense of perfectionism and, a same directional association between it and negative perfectionism. Literature showed that subjects with depleted levels of self-control resort to sadness, alcohol consumption and take drugs (Williams and Williams, 2012), indulge in cheating during tests (Tangney et al., 2004), display absence of alertness (Franklin et al., 2012), and perilious and arousal actions (DeLisi et al., 2010).

Poure et al., (2023) found that certain personality types are likely to resort to bullying the fellowmates in school and such a link is mediated by the self-sabotagging tendencies. In this context, Budroza et al., 2022), in their study, reported that individuals specifically belonging to narcissistic type of had elevated levels of self-disruptive behaviour in them. These subjects also suffered from obsessive behavioural tendencies as found by Kalyon et al., (2016). Nunez et al., provided the explanation that when self-handicapped students figure out that they need to complete an assignment or a homework, for which they feel a natural sense of hesitancy due to low self-esteem and anxiety pertaining to failing in the task, they resort to obsessive behaviour and self-sabotagging as a defense mechanism of their self-esteem. Bright but obsessive students even resort to harming their self and becoming prone to be either a victim or an initiator of violence and bullying (Melhem, 2022; Barutcu et al., 2020; Ghazi et al., 2017; Kalyon et al., 2016). Melhem (2022) explained that at the core of such cascading maladaptive behaviours lie the traits of anxiety, stress and low self-esteem backed by the previous research of Kalyon et al, (2016), Adler (2013) and Ghoul et al., (2013). Findings in the recent times also substantiated these explanations (Bodroža, Mandarić, and Milosavljević, 2022; Núñez et al., 2021; Chang, 2020),

Ghablan and Saleh Alanezi (2023) investigated predictors of this self-disruption strategy in studies at the college level in Kuwatian context using step-wise regression analysis and found that the variables which promoted it are academic procrastination (being the strongest), self-compassion, self-esteem, goal-avoidance orientation, and

mastery goal orientation, and performance goal orientation tried to inhibit this maladaptive strategy.

1.3 THEORETICAL BACKGROUND OF ATTRIBUTIONAL BELEIFS

Attribution refers to being after the unearthing of the causes which lead to either successful or unsuccessful results. The common question in attribution is "why did I succeed or fail?" Attribution involves causal perceptions along three factors: "*locus of causality, stability, and controllability*". Attribution theory, originating from the field of social psychology, describes the way individuals explain the causes of events, their own behavior, and the behavior of others.

Attribution theory recognized four primal factors which form the cause for academic performance as per the subjects. These four factors are the possessed capability, the expanded effort, the level of ease or difficulty in task accomplishment, and luck. This theory also identifies the outlook of the subjects on the causes of academic performance to belong to three facets, namely, the locus of causality, stability, and controllability.

The first facet, Locus of causality, indicates where the cause resides, which can be either inside the subject or outside as per his or her outlook. The second facet, Stability, relates to the form of existence of the cause with respect to time, either mutable or fixed. The third facet, Controllability, relates to the intentional influences a subject can spell over the cause. For instance, attributions are intrinsic when they are related to capability beliefs and expandable efforts. They are considered to be located extrinsic to the subjects when luck and contextual seetings are given preference by the subjects. From point of view of controllability, factors like capability, contextual settings and luck are less controllable than effort factor. From the point of view of stability, capability and contextual settings are stable, and effort and luck are temporary with respect to time.

Questionnaires were developed to assess the subjects' perceived attaching of significance to the four dominant causal factors (that is, luck, ability, contextual setting, and effort) for their achievemenet or failure filled performance in studies (that is, poor or good grades at school).

In short, according to attribution theory, the explanations individuals provide to

account for success or failure can be analyzed based on three sets of characteristics:

- **Internal or External:** The cause of success or failure may be attributed to factors believed to originate either within oneself or in the surrounding environment.
- **Stable or Unstable:** The cause of success or failure may be considered either stable or unstable. If deemed stable, the outcome is expected to be consistent when the same behavior is repeated on another occasion. Conversely, if viewed as unstable, the outcome is anticipated to vary on different occasions.
- **Controllable or Uncontrollable:** The cause of success or failure may be perceived as either controllable or uncontrollable. A controllable factor is one that is believed to be alterable with relative ease.

Attribution beliefs in education are influenced by four factors: ability, task difficulty, effort, and luck. Examining these factors through the previously discussed characteristics, we can analyze them as follows:

- **Ability**: This factor is relatively internal and stable, and the learner does not have direct control over it.
- **Task Difficulty**: Task difficulty is an external and stable factor, largely beyond the learner's control.
- **Effort**: Effort is an internal and unstable factor that the learner can exert a great deal of control over.
- **Luck**: Luck is an external and unstable factor over which the learner exercises very little control.

TABLE 1.1: DIMENSIONAL CLASSIFICATION SCHEME FOR CAUSAL ATTRIBUTIONS

ATTRIBUTIONAL FACTORS	**DIMENSIONS**		
	Locus	Stability	Controllability
Ability	Internal	Stable	Uncontrollable
Effort	**Internal**	Unstable	Controllable
Task difficulty	External	Stable	Uncontrollable
Luck	External	Unstable	Uncontrollable

There are some concepts related to attribution. The following are some additional concepts related to attribution:

Heider (1958) is widely recognized as the foundational figure in attribution theory. He contends that the way individuals perceive or interpret events has a more significant impact on their behavior than the actual occurrences. He relates this idea to the causes of success and failure, suggesting that people typically attribute events or behaviors to a set of external factors (such as the situation or environment) and internal factors (related to disposition or within themselves) when asked to explain why certain events occurred.

Weiner (1974, 1986) subsequently built upon Heider's framework, highlighting ability, effort, task difficulty, and luck as key attributions related to achievement. Furthermore, outcomes could be attributed to various other factors, encompassing other individuals (like teachers or peers), physical appearance, mood, fatigue or illness, and personality.

Attribution theory serves as a valuable tool for comprehending the motivations behind people's actions. It has been defined as a cognitive model for understanding human motivation (Weiner, 1974). This theory emphasizes the exploration of the factors to which individuals attribute positive and negative experiences. Dweck (1978) conducted research comparing children who learned to be helpless to those with a

mastery-oriented mindset. The study found notable distinctions between these two groups with respect to achievement goals, causal attributions, expectancies for future outcomes and behaviors in the face of obstacles. Slavin (1983) highlighted that self-handicapping tendencies might be influenced or supported by the learner's culture, subculture, or the school environment. For instance, adolescents might engage in self-handicapping behaviors by minimizing their efforts, as they perceive that putting in significant effort might be perceived as an undesirable form of competition with their peers.

Elliot and Dweck (1989) concluded that individuals who set learning goals are motivated to enhance their competence. Those who prioritize learning goals are inclined to embrace challenges, especially when they believe that facing challenges will contribute to increased competence. Moreover, they are likely to respond to failure by intensifying their efforts.

Hayamizu and Weiner (1991) investigated the interconnections among university students' perceptions of capability, achievement goals, and the perceived characteristics of causes. Aligned with Dweck's Model, they discovered a negative relationship between the magnitude of the goal of learning and the perceived consistency of no-effort placement. Consequently, the findings from Hayamizu and Weiner (1991) supported Dweck's model, indicating that university students were more probable to have learning goals when they perceived both lack of effort and low ability to be more unstable. When the low ability was perceived by to be stable by these tertiary level learners, such a behaviour did not relate positively with performance goal, as posited in the model proposed by Dweck.

Legget (1998) highlighted that performance goals are established by individuals aiming to garner favorable judgments from others. Those who prioritize performance goals tend to shy away from challenges unless success is guaranteed, and in the face of failure, they are prone to experiencing learned helplessness and resorting to self-handicapping. The emphasis on performance goals is often deemed undesirable, yet educational institutions, parents, and society frequently overemphasize them, adversely affecting learners.

Williams, Burden, and Al-Baharna (2001) identified 11 positive and 18 negative attributions among 25 students learning English in Bahrain. Success was often attributed to factors such as a positive temperament, practice and support from family. On the other hand, common negative ascriptions consisted of a negative temperament, poor teaching methods, less support from family and teachers, and poor comprehension.

Poulet and Maun (2004) identified 21 attribution categories, with major reasons for success cited as effort, strategy, ability, teacher, interest, task, and peers. Notably, they found that the majority of attributions for both success and failure were considered internal.

According to Ellis (2008), attribution refers to "students' assessment of their progress in second language learning and the reasons they attribute to their success or failure in acquiring a particular target language". In an educational context, attribution is considered an antecedent of how a learner learns and performs later, and hence effecting their drive and academic achievement (Weiner, 1985). Additionally, it can be characterized as individuals' explanations for the reason behind a specific event, subsequently influencing his or her behavior (Martinko, 1995).

Mori et al. (2010) discovered that a significant number of learners gave the impact of the teachers on them and atmosphere of the class to be the reason behind their excellent performance. On the other hand, they reported incompetence and lack of enough knowledge at their end as the reasons behind their dismal performance in studies. According to Yilmaz (2012), bright mood, interest in studies, appropriate planning of learning, constructive feedback from teachers and an appropriate classroom climate emerged as reasons behind good performance and the same learners pointed at less preparation time, gloomy mood, inability to read and negative classroom climate to be the reasons for student's poor performance. Such findings are in line with "Weiner's attribution theory", which identifies luck, efforts, capabilities and difficulty level of the tasks as the four main reasons for victory or setback in academics.

Mohmad (2013) revealed that students endorsed all given causes (planning, capability, effort, likeliness, luck, difficulty of task, parental and teacher influence) as potential causes of both achievement and setbacks, be it a science related like subject

like mathematics or a language like English. While learners on both the gender attributed nearly the same set of causes to success, they significantly differed in ascribing the reasons for their setbacks.

Mbato (2013) investigates how Indonesian EFL learners' self-regulation in reading is facilitated by implementing a metacognitive approach. His research shows that most students attributed their success to effort and strategies and those students became more strategic in their reading. Luo et al., (2014) examined the effects of casual attributional beliefs of the tertiary level learners on their level of motivation to learn, extent of effort expanded to regiater a credible performance, and the capability to cope with negative factors in studies. Owing to individual differences, past experiences pertaining to setbacks and victories in studies, present beliefs and social norms, students ascribe their beliefs of the study related consequences to multiple dimensions, such as locus (internal and external), stability, and controllability (Weiner, 2010).

Tsujimoto et al., (2017) reported that attributional beliefs are perceived causes of success or failure in selecting learning goals. EFL learners who tend to attribute failure of ability as a stable and uncontrollable cause need appropriate instruction in order to experience success, effortful learning and achieve their learning goals.

Weiner's (2010) work laid the foundation for understanding that students attributions of their academic success and failure were key to comprehending and developing student motivation and ultimately to student success. A central component of attribution theory is that an individual's behavior is driven by the need to comprehend and master his or her environment, thus allowing for the prediction of future events (Assouline et al., 2006). A three stage process underlies an attribution. First behavior must be observed / perceived; second, behavior must be determined to be intentional; third, behavior attributed to internal or external causes. As this relates to the classroom environment, students consciously or subconsciously work to understand.

1.3.1 Relationship Between Self Handicapping and Attributional Beleifs

Jones, Holder, and Thelwell (2006) concluded a study that explored the relationships between attributions and self-handicapping, linking these constructs across the social world, cognitive processes, motivational beliefs, and achievement behavior. The study considered the social world to encompass the cultural environment, the behaviors of

socializers, and the impact of past performance and events. Through a determination of correlates, the study observed that success-based expectations and task-avoidance tendencies led to states of anxiety and task-avoiding behaviors among participating students. These factors were further noted to impact anticipations regarding college grade achievement and the actual realization of academic grades in an examination context.

Sweeton and Deerrose (1995) observed that much of the earlier research on the attribution phenomenon considers it to involve three crucial stages: discreet observation of the event, deciphering the lateral intentions across the event, and zeroing in on an attribution for the event in focus. The proposed attributions are often more external, with students tending to believe that external factors are the reasons behinf these event, than internal attributions, where students believe that internal factors cause such event.

Graham and Williams (2000) observed that the current application of Weiner's philosophy in educational psychology aims to interpret the attribution phenomenon as involving the search for the causes or reasons that lead to the current success or failure of students in academia (such as marks, position, or scholarships). Weiner is largely regarded as categorizing the phenomenon as involving the locus (external or internal), stability (unstable or stable), and the extent of controllability (uncontrollable or controllable).

In a study conducted by Thompson, Hepburn (2003), a correlation was established among 72 undergraduate students, exploring the connections between trait causal uncertainty and both claimed and behavioral self-handicapping tendencies. The findings revealed significant associations between trait causal uncertainty and the expression of claimed and behavioral self-handicapping. Ommundsen (2004) delved into success expectations, task performance, and their associations with students' anticipated self-handicapping. The research identified a negative relationship between these variables, indicating that success expectations and tendencies to avoid tasks originate from the cognitive and psychological aspects of students' mental states.

Wilson and Linvillie (1989) conducted a study on attribution therapies aimed at retaining attributions among students during critical phases of their academic and career development. The existing literature on students' conceptualization of the

reasons of failure and success, lacks cohesion and presents a rather limited understanding of the patterns and contexts (Forsyth and Story, 2009). This lack of convergence is evident across various factors such as gender, locality, discipline, and enrollment levels throughout the academic cycle. Forsyth and Story made efforts to distinguish inhibiting and facilitating factors, illustrating the significant impact of attribution beliefs on both academic performance and non-performance.

Cocoradia (2011) noted that students' acquired beliefs, motivations, and the process of information accumulation and internal information processing serve as precursors to their perceptions of the elements influencing defect and victory in both academic and sporting endeavors.

Covington and Omelich (2011) disclosed and discussed the consequences of the increasing inclination among students to point towards factors beyong them responsible for their success and failure.

Heidari and Yailagh (2013) revealed that there were statistically relevant differences between achievers and non-achieveing students' attributional style. Also, the negative style of ascribing of the non-achieving students was more than that of the achieving groups, but the positive style of ascribing of the achieving groups was more than that of the non-achieving learnres. In addition, the self-sabotagging of non-achieving students was higher than that of non-achieving on the overall scale of this behavior. Finally, the "Claimed" and "Behavioral Self-handicapping" subscales of the non-achieving students were more than those of the achievers.

Negoiţ ă (2016) revealed that on the ascription of success and failure revealed the existence of the student’s self-serving bias in the information processing rather than self-esteem maintenance across these circumstances. The researcher in his study across school going adolescent students revealed the prevalence of the external, stable and uncontrollable causes for poor and relatively dismal academic performance in classroom across learning environments.

Xing et al. (2018) showed that unmerited praise developed all forms of handicapping in the students since receiving of praise once increases the desire to receive it again even at the cost of adopting maldaptive strategies. Even merited praise can undesirably raise the levels of test related anxiety in in some students in comparison to the lot which was not praised but was only provided genuine fact based feedback.

Onyeizugbe and Ogbuju (2018) reported that Nigerian undergraduates were prone to display of this negative trait, along with procrastination, staying away from tasks and placing lesser efforts, when they sought approval from friends for their actions,. Low socio-economic status of these undergraduates also made them likely to be subjects of self-sabotagging (Ajayi and Olatoye, 2015). Male Nigerian undergraduates showed more of this trait coupled with other maladaptive behaviours like wasting time by spending more time in socializing, deffering the tasks intentionally, export the cause of the dismal academic performance (Adewale and Akinade, 2019). Oyewole and Oyewumi (2019) found the variable fear of failure mediated the predictive link of peer approval seeking on academic self-sabotagging tendency among Nigerian undergraduates.

Melhem (2022) found Jordanian college students to posses this maladaptive tendency in moderate level. Students ascribed their dismal performance in studies to lots of academic assignments and to engaging in sports, and used this tendency as a shield or a pretext. The study also found that factors like less interference from friends, belonging to high socioeconomic status, and non-exporting of the blame in the face of set-backs could bring down the levels of this tendency and rise academic performance. Since such a debilitating tendency bings downs academic performance and also makes the subject stay away from study related tasks, it becomes critical for all the concerned stakeholders to discourage its promotion.

1.4 THEORETICAL BACKGROUND OF LEARNING ENVIORNMENT

The term "Learning Environment" encompasses the complete spectrum of components and activities where learning takes place. Traditionally, the learning environment provided to students has been conceptualized in two primary forms: the physical environment and the socio-cultural environment.

There are four key aspects of an effective learning environment, namely, "*Learner-Centered, Knowledge-Centered, Assessment-Centered,* and *Community-Centered*" (Huang et al, 2013). Huebner (1989) suggests that understanding and predicting student behavior are best achieved through examining the interactions between individuals and their environment. Extensive research by behavioral scientists, psychologists, and sociologists, such as Speller (2006), demonstrated that the surroundings can facilitate, modify, or impede various behaviors and emotions.

Consequently, the learner's behavior is shaped and affected by the multi-faceted surrounding of the campus, and conversely, it influences the environment as well (Strange and Banning, 2001), which has four facets namely "*physical component, organizational measure, social climate, and human aggregate*".

The physical component of a campus encompasses both its natural surrounding like placement, weather, and temperature, and its man-made surrounding like building structure sound, infrastucture, and messages. These elements play a vital role in mulding attitudes toward the campus and profoundly influencing the experiences of its inhabitants. They define spaces for various events and activities, promoting certain phenomena while inhibiting others, thereby shaping students' choices and behaviors (Strange, 2003). Key components within the physical environment include the ambient environment, personal space, crowding, environmental load and territories (Gifford, 2007; McAndrew, 1993). Studies which suggest that the surrounding of the educational institutions strongly profound impacts the imagination of the students includes works by Büscher et al., (2004), and Claxton et al., (2006).

The organizational component emerges from the multitude of managerial decisions taken for safeguarding the environment and conduct smooth daily functioning or working of the institution (Strange, 2000). Questions related to accountability, responsibility, resource distribution, aims, goals and the timeframe of their achievement, and reward system for the performers comes under to this dimension. Numerous studies by contemporary scholars, including Claxton et al. (2006) and Kangas (2010), provide evidence supporting the impact of this dimension on the development of creativity and imagination of the students.

The social climate component, of the learning environment variable, centers on the "subjective views and experiences of participant observers, assuming that environments are understood best through the collective perceptions of the individuals within them" (Strange et al., 2001). Social climate intrinsically gets reflected in the motivation levels of the members and extrinsically in the form of the influence environment in controlling its members (Peterson and Spencer, 1990). According to McMillan (1995), the emotional aspect is pivotal in cultivating the imagination of the

learners, asserting that all educational institutions must strive to build a conducive climate in these places filled with support and encouragement.

The human aggregate component refers to the collective traits of subjects inhabiting a particular environment. This facet shapes aspects within the environment that exhibit changing degrees of consistency, particularly in terms of the style, tradition and culture of the organization (Huebner et al., 1990; Strange et al., 2001), which are unique for such an organization and fosters a sense of identity of its members with it. The human aggregate factor significantly influences the efficiency of the students, can limit their behaviors, establishes a specific culture in the campus, and creates a lasting impression of the institution per say (Peterson and Spencer, 1990). Contemporary research, by Trotman (2006), Claxton et al. (2006) and Treadaway (2009) and also underscores the effect of this factor on the learner's imagination.

According to W.H.O. (2010), the physical environment is a vital element for successful control strategies. Students exposed to unhealthy physical surrounding are prone to diseases and other health related conditions like respiratory ailments if they are exposed to smoke, noise, bad light and polluted air.

According to Alexander (2013), an apt learning environment that ensures enhancement of quality instruction and learning needs an appropriate physical cite with a construction immune from any form of pollution, but with bountiful supply of fresh air, water and light, as supplemented by the work of Abbott (2014). Jones et al. (2014) revealed that when students were exposed more to an outdoor learning environment, it strongly promoted in them a deeper understanding of the concepts of ecology and connect with nature. Blum (2015) explained that when academic institutions welcome their freshers into a respectful climate, these students also concentrate on their studies and reach their study related, social and sport related potential. Such institutions have clear policies in place which are well communicated to the wards and curb any unacceptable behaviour from them and promote a supportive environment immune from any detreimental and harmful social, physical, emotional, and intellectual talk and action. A welcoming school environment lays a solid foundation for children's study related achievements and also for the development of positive mindset and acts and is as vital a factor as the content and pedagogy (Kwa, 2017).

The learning environment also encompasses the social contexts in which teaching and learning takes place containing the interactions between the teacher and the taught, and the classroom culture (Smolyaninova et al., 2021; Niyazova and Khuziakhmetov, 2021). Smith (2011) found that science students benefited more when compared to the conventional classrooms when the place of learning was more interactive leading to better performance in this displine. Türkmen (2022) stressed on the experience of emotional fulfilment on the part of the learners belonging to the informal learning context coupled with cooperation and collaboration among the stakeholders of an effective learning environment.

Kumar and Kumar (2023) concluded that students engage in learning activities, experience more interest and motivation, and follow it up with practicing the material more leading to the retention of the learning, when the instruction is effectively coupled with gamification like quizzes and other competitions involving points and prizes. Sayfulloevna (2023) in his study analyzed the vital aspects of safe learning environments and commented that such locations are inevitably make the students feel safe and supported in expressing their ideas and opinions free from being criticized, judged or he scoffed. Creating such an environment is key to effective learning, as students are more likely to engage and open up to new ideas when they feel psychologically safe.

1.4.1 Relationship between Self handicapping and Learning Environment

Covington (1992) has been instrumental in elucidating the concept of self-handicapping in the context of academics by proposing the "*theory of self-worth*" posits that learners primarily aim at maintaining a favourable image and stray away from any eventuality where they can be labeled as unintelligent, under the schooling system. To achieve this, students may resort to employing educational self-handicapping strategies. These strategies involve adopting tactics that portray individuals as victims of circumstances rather than being indicative of their actual abilities. Berglas and Jones referred to these strategies as handicapping strategies, as their implementation may result in performance attenuation. In other words, when an individual evades responsibility for their performance, they are applying a self-handicapping strategy.

Deppe and Harackiewicz (1996) highlighted that discontinuing self-sabotagging can alleviate the stressis associated with a task, potentially resulting in improved performance. Studies indicate a negative correlation between self-handicapping and various factors, including motivation, performance and self-regulated learning. Furthermore, prolonged engagement in self-sabotagging is linked with negative mood, deteriorating psychological well-being, and an increased likelihood of substance abuse.

Greaven, Santor, and Zuroff (2000) conducted a study titled "Adolescent Self-handicapping, Depressive Affect, and Maternal Parenting Styles." Both adolescents and their mothers participated by completing various self-handicapping questionnaires and providing information on parenting variables. These variables included parenting methods, such as excessive care and support, as well as parental stress resulting from situational factors and interactions related to children's dysfunction and behavioral characteristics.The findings of the study revealed several key points. Self-sabotagging showed a positive link with age in girls, along with a strong association with lack of composure observed in both the genders. Additionally, the results suggested that caring received from mothers moderated the link between this trait and restlessness specifically in boys. Dorman et al. (2002) documented that when the classroom environment had an enabling element while dealing with emotions, the disruptive behaviour's levels declined.

Research conducted by Scott, Shannon, and Caroline (2004) indicated that students experiencing higher levels of life satisfaction tended to perform better in their homework. These students demonstrated a greater focus on their personal abilities in completing homework tasks rather than attributing success or setbacks to chance or external factors. The study suggested that self-handicapping tendencies can arise in situations where one's perceived competence is threatened.

Zuckerman and Tsai (2005) investigated the interconnection between compatibility, self-handicapping and psychological well-being. Their findings suggested that this maladaptive tendency is the predictor of various psychological outcomes such as denial, blaming self and others, sleep related complaints and depression. Additionally, the use of self-handicapping strategies not only fosters uncertainty about personal abilities but also correlates with anomalies and poor psychological well-being,

according to the study by Zuckerman and Tsai in 2005. Shokrkon et al. (2005) elucidated that lower belief and worth about self were antecedants to this maladaptive tendency. Individuals with diminished confidence in their abilities often harbor a fear of failure in their endeavors. Consequently, they may resort to various undesirable strategies, like self-handicapping, to justify or explain their failures. Self-handicapping serves as a means for individuals to rationalize their shortcomings when they lack trust in their own capabilities.

According to Fleming, Howard, Perkins, and Pesta (2005), the collegiate or classroom environment is widely acknowledged as a crucial factor influencing students' transition and opinion formation.

Koparan, Ozturk, Ozkilc, and Senizic (2009) revealed that since students spend a significant amount of their time in schools, the type of instruction, the quality of relationships between teachers and students, as well as among students themselves, and the resources and facilities available in schools are crucial factors influencing students' effectiveness.

In their study on learning environments and consistent student engagement, Baeten et al., (2010) focused on situation-specific contextual factors, perceived contextual In a study conducted by Skaalvik and Skaalvik (2006) among high school students, the influence of the classroom environment on students' self-esteem was evident. The research highlighted that task allocation without caring for the differences of the student’s abilities and tasks that did not align with the needs and requirements of students, led to the development of ego-based tendencies among them along with disengagement, disruptive behavior, and withdrawal tendencies in such condictions. Standage et al., (2007) concluded that handicapping interest of the self can be probability-wise found more in achievement-oriented school climates that often emphasize competition. In addition to being competitive, a climate in the school where the learners were selfish and self-interest driven caused adoption of this viceful trait.

In their research, Lent, Sheu, and Singley (2009) demonstrated that environmental support is a predictor of academic adjustment, progress in goals, and life satisfaction in the future.

Elements, and the corresponding student focus. Lee and Shute (2010) observed that the influence of behavioral, cognitive, affective, and metacognitive aspects on personal aspects that effect the shaping of students' sense of involvement, learning attitudes, and corresponding learning strategies. This relationship was found to be reciprocally influenced by social and cultural factors that define the prevailing learning climate within schools. The study emphasized that engagement is jointly influenced by personal and social cognitive factors in the academic setting, exerting a mutual impact on academic outcomes and performance.

In the study by Coudevylle et al. (2011), the focus on self-sabotagging is centered on satisfaction and self-regulation. However, the research suggests that hard work and the utilization of various forms of self-regulation actually enhance learning capability. Learners may engage in activities to attribute potential failures to external factors rather than working on or depending on their own hardwork or capability. While self-support may initially foster self-disruptive behavior, it can promote motivation too in the learners. Its excessive use can however lead to heightened dissatisfaction and declining mental health (Eronen et al., 1998).

In the research conducted by Schwinger and Stiensmeier-Pelster (2011), sabotagging behavior was found to be demonstrated through various other harmful behaviors, such as low effort, substance abuse, setting unattainable goals, and displaying poor performance. Recent studies on this trait within educational environments indicate that some students consciously and intentionally engage in behaviors like procrastination, spending the last night before exams ineffectively, or employing other self-impediment strategies to mitigate potential negative consequences of failure. Numerous studies have reported that self-sabotagging has adverse effects on academic achievement and leads to a decline in their intrinsic motivation.

In the study by Byrgany et al., (2011), the self-obstructive tendency is identified as a significant problem. While it may offer short-term benefits by boosting self-esteem, the research emphasizes that there is a high long-term cost for individuals who engage in it. The consequences include less psychological well-being, diminished self-efficacy, reduced mental motivation, increased signs of negative mood, and a higher likelihood of drug abuse among the individuals adopting such strategies.

In studies conducted by Barzegar and Khezri (2012) as well as Gadbois and Sturgeon (2011), schools are identified as suitable environments for the emergence of self-handicapping. The nature of school environments continually exposes students to activities and conditions that assess their intelligence and other cognitive capabilities (Midgley and Urdan, 2001). The results of these studies indicate that self-sabotagging tendency in studies is a mechanism that is used to safeguard one's image when poor performance is displayed in finishing allotted assignments at home.

Marachi et al. (2012) proposed that self-obstructive tendencies grow when the students do not find much help from the teacher and the latter also has poor expectations from the students, with high stress on achieveing performance related goals in the classroom. Factors like academic self-efficacy and projective coping strategies mediated the mentioned relationship.

In a study on the validation of the model of antecedents of self-handicapping trait by Mwita et al., (2015), the research interpreted the phenomenon as involving linkages as exhibited across the POASH model of engagement and self-handicapping behaviors in students. This phenomenon of self-obstruction has been widely considered to be related to the patterns and scale of student engagement across learning environments within educational institutions.

Üzbe and Bacanlı, (2015) concluded that learners under the competitive climate of a classroom suffer under the pressure of frequent high performance in studies which declines their self-esteem and forms the perfect recipe for the adoption of self-sabotagging tendencies and cheating to save their moral and mental skin. When the same classroom was vibrant and democratic, it drastically reduced such disenabling tendencies (Dorman et al., 2002; Dorman and Ferguson, 2004). Kumari (2015) reminded that any environment in which assessment diagnosis is carried, can become a testing ground of self-obstructing behaviour which can be both a trait (Jones and Rhodewalt, 1982) and a state (Tice, 1991).

Torok et al., (2018) explained that this behavior is a psychological shield developed by the learners under stressful academic environment, which indulges them into experiences of negative psychological repercussions, spanning their self-esteem, well-being and performance in studies. Yıldırım and Demi (2019) disclosed that the protective aspect of this trait in short in duration, but grows over time with frequent

adoption and leads to eventual development of disorders in the personality as supported by prior works like self-efficacy disruptions (Özgüngör, 2010), and emotional tiredness and test anxiety (Akın, 2012).

Sertel and Tanrıöğen (2019), stressed the importance of perceptions in the research of this behaviour, by showing that vibrant climate at climate and democratic functioning in the institution reduced it. Also, Yu and McLellan (2019) research found that the way students looked at success, as an empowering mechanism instead of a tool to prove competitiveness, also impacted the existanec of the levels of this behaviour.

In a study, Behrami and Amiri (2013) analyzed the mediatory roles of academic procrastination and academic optimism, in the link between sabottaging tendency and learning environment. It was found that good outlook of the environment has a significantly and opposite directionally effected the disenabling behaviour, and academic procrastination shared a significant and same directional association with it. Good outlook of the surroundings had a healthy effect on academic optimism, with a similar link existing between academic procrastination and academic self-sabtagging. Finally, perceptions of the learning climate had an indirect, significant and opposite affect on academic self-sabotagging through academic optimism and academic procrastination.

Siros and Mahdis (2022) demonstrated a significant positive covariance between the use of social networking environments and students' self-sabotagging tendency. Prior works substantiate this finding (Callan et al., 2014; Uysal and Knee, 2012; Vrij et al., 2021; Fadhli et al., 2021; Schwinger et al., 2022; and Funkhouser and Hallam, 2022). The study intended to explore the intermediatory causal role of strategies of self-regulatory learning and performance in studies under the predictive relationship of social networking on academic self-sabotagging with the EFL learners as the subjects from the University of Tabriz and achieved their objective. They also found that self-handicapping helped the learners adopting it to stay away from the remarks of other's evaluations and not ascribe the same to poor capabilities and eventual failure. Since this behavior devalues academic performance and can cause the students to stay away from school and college related activities for longer duration of time, teachers and parents must employ every step to stiffly counter self-handicapping and its promoters.

Sahin and Cobon (2022) evaluated that this disruptive behavior is uncommon among learners belonging to vibrant school climate experiencing higher achievements in studies. Also, this maladaptive behaviour protects the individual from being called a bully. Research also revealed a significant link between demographic variables like type of school, age, gender, economic and social background and performance in studies. In the light of such studies, it is inferred that the characteristics of a robust school climate had a positive effect on learner achievement if students exhibited less self-handicapping behavior.

1.5 THEORETICAL BACKGROUND OF PERFECTIONISM

Perfectionism can be defined as a personality trait with an inclination to put very high stress on exactness and order. It consists of establishing unreal personal benchmarks failing to attain which the individual becomes critical of his or her self, along with worrying too much over the committed mistakes and doubting the very nature of success achieved through a performance.

In the psychological literature, Hollender (1978) proposed the earlier known definition of perfectionism as "*having abnormally and unjustifiably high expectations from self and others*" (Shafran and Mansell, 2001) and hence classifying it to be an undesirable construct by its very nature. Hamachek (1978) separated "normal" from the "neurotic" type of perfectionism. While inividuals belonging to the former group experience a sense of accomplishment on attaining their high standards, the individuals of the latter group never are able to meet the set standards beyond their capabilities.

The "*Social expectations model*", proposed by Hamachek (1978) and relying heavily on the previous research of Missildine (1963), posits the origin of perfectionism as a trait in the attempts made by a child to obtain parental approval, with perfectionism being the cost paid for it.

Also, Bandura's (1986) "Social learning model" states that learners come under the environmental influence at home and undergo changes in behaviour as individuals and hence in this context, progenies of parents who are themselves perfectionistics develop this trait through observation and imitation of their elders. Hewitt and Flett (1991) divided perfectionism into three distinct dimensions. The first dimension is

"*self-oriented perfectionism*", where learners set high standards for self measured against self-imposed bechmarks. The second dimension is "*other-oriented perfectionism*", featured by learners having very high expectations from the dear ones. Lastly, "*socially-prescribed perfectionism*" involves individuals perceiving that others, including societal expectations, hold themselves to perfectionist standards. While this construct can have both positive and negative after-effects, the dimensions of other-oriented and socially-prescribed perfectionism are often associated with more harmful effects on social migling and progress.

Quantitative work of Frost et al. (1991) found linkage between perfectionism in mothers and daughters, along with Chang's (2000) work who found the association between children and their perfectionistic parents with respect to this trait. The "Social reaction model", forwarded by Flett et al. (2002), as the name of the model suggests, treats perfectionism's origin in the response of an individual to his or her harsh family environment or social surroundings. Here, perfectionism is looked upon as a parenting stretegy of over anxious parents where they teach their ward to concentrate excessively on the mistakes committed by them and their undesirable consequences, instead of instructing them to treat these experiences as valuable life lessons. Hence, the origin of perfectionism as a negative trait is mostly due to inefficient parenting style.

More over, other factors associated with the development of perfectionism in individuals are surroundings related causes like pressures experienced by the child from his or her contemporaries, teachers and the culture, personal factors like the developed style of attachement and temperament, and parent related factors like their personality, style of parents and set goals for their wards. From these mentioned sources, the child either acquires a normal or adaptive form of perfectionism which can act as a drive to achieve self-actualization, or develop neurotic and maladaptive form of, with its truckload of negative consequences like anxiety (Flett et al., 1989; Juster et al., 1996), depression (Kawamura et al.,2001), range of psychological symptoms and suicidal tendencies (Chang, 1998; Rice et al., 1998), and eating disorders (Fairburn, 1997; Fairburn, Shafran, and Cooper, 1999).

Specifically in the academic context, students develop this negative trait quite early owing to the poor schooling system, where they are subjected to continuous

assessments and tests to measure their capabilities frequently. Urdan and Midgley (2001) disclose the vital insight that under this system, the feedback associated with the intelligence and ability related performances of the students in these tests is shared with others like the parents and subject teachers. Such an exercise drives the students to set very high standards so as to prove they are competent and intelligent. For instance, these mentioned subjects would strive without a miss, to secure a cent percent marks in exams, get the maximum marks in a classrrom task or even may want their Ph.D. thesis to be recommended by the panel without any changes, in the presence of their teachers, friends and parents, and eventually getting subjected to the associated negative consequences of this trait like writer's block (Boice and Jones, 1984), fear of writing responses to open ended questions (Phillips, 1986), depression, low self-esteem, anxiety and poor academic performances (Mobley, Slaney, and Rice, 2005), and chronic headaches (Bottos and Dewey, 2004).

Neumeister (2004) found that perfectionism, when self-oriented in nature, as found in gifted tertiary level students can make these students to set "mastery and performance-approach" related goals and hence achieve academically. On the other hand, perfectionism, that is socially-prescribed in nature, makes the influenced subjects set both "*performance-approach*" and "*performance-avoidance*" goals and hence display an escapist tendency regarding failure. Studies on treating this disabling trait are limited or are not tested rigorously and primarily existing in the form of cognitive interventions (Burns, 1980). Hewitt and Flett (2002) stressed on the need to target the antecedants of perfectionistic behaviors to resolve the issue. Blankstein and Dunkley (2002) proposed praising individuals and the associated events as a means for promoting more adaptive form of perfectionism. These suggestions emphasize the importance of addressing the underlying factors and cognitive patterns associated with perfectionism to promote more adaptive and healthier ways of thinking and behaving.

Perfectionism is a trait that can contribute to the evolving of self-obstructing behaviors. Perfectionism can be considered as one of several faulty cognitions that individuals may possess. These faulty cognitions can manifest in various behavioral patterns, including strategies of self-handicap like lack of effort, procrastination, overcommitting, and busyness. While specific thoughts are associated with these behaviors (e.g., "I'll do this tomorrow," "I've been so busy, it's hard finding time to do this"), it is the base-level thoughts that primarily drive these behaviors. This model

doesn't suggest that perfectionism always leads to self-handicapping behaviors, or vice versa, but they are often observed to co-occur.

Perfectionism is essentially a negative construct, characterized by the setting of very high benchmark for oneself or others (Shafran and Mansell, 2001; Pacht, 1984). Additionally, Frost et al. (1990) stressed that setting of these high benchmarks for self and others is accompanied by tendencies of making overly critical self-evaluations, like displaying high and frequent worries related to committing mistakes and doubts on self's beliefs and actions. Stober (1998) found these subjects to excessively stress on maintaining order and neatness. They are unsatisfied with their efforts (Frost and Henderson, 2010), are under heavy stress, continuously scared of failure (Flett et al., 2011; Frost et al., 2013), and adopt self-sabotagging mechanisms (Kerns et al., 2008).

Uliaszek and Wang (2006) associated the trait of being unrealistically exact to personality of the students and that those who possessed a negative sense of perfectionism remained reclusive and bossy with others, while those with flexible approach towards perfectionism showed excellent adjustments in their interpersonal relationships with their group mates.

Yahghoubi and Mohammadzadeh (2015) conducted a study comparing perfectionism and its factors in college students with their higher levels of obsessive-compulsive and eating related disorders. The data showed that the former trait in its higher levels was linked to perfectionism and its related undesirable consequences, in comparison to the latter condition of eating related disorders.

Khatibi and Fouladchang (2016) broaden the understanding of this trait by mentioning that subjects can be classified in two categories, adaptive and maladaptive. While the former do not stress much mentally on missing the high standard set for self and perceive the benchmark as a source of motivation, the latter reel under the harmful mental stress on missing their high benchmark and consider it as proof of their incompetence. Such a maladaptive perception regarding the trait increases the chances of adopting self-sabotagging tendencies eventually.

Curran and Hill (2017) conducted a meta-analytic study on how perfectionism trended from 1989 to 2016 in 40,000 plus American, Canadian, and British college students, by applying the Multidimensional Perfectionism Scale by Hewitt and Flett (1991) on

them. The results showed that all forms of perfectionism increased with time and the young learners of the newer generations believe that others are more demanding of them and they too are equally more demanding of others and their own self.

Gnilka and Rice (2017) investigated different types of individuals possessing this trait, their personality types and their well-being by gathering data from 276 college students. Application of latent profile analysis technique on these subjects classified them into maladaptive, adaptive, and non-perfectionists groups. The first group demonstrated the maximum extent of subjective happiness, presence of meaning, and life satisfaction, while second group showed the maximum level of seeking a meaningful life. The findings highlight the need to investigate the extent of diversity in subjects pursuing perfectionism and their health status.

Swider et al., (2018) revealed complex nature of perfectionism as a vital psychological variable and its associated merits and demerits. Perfectionists strive to work without any shortcoming for which they never compromise with respect to the effort to be expanded and the diligence to be displayed when compared to non-perfectionists. They would continue maintaining tough and unreasonably high standards, be overly critical of their actions, have an "*all-or-nothing*" attitude toward their efforts, and think that their self-esteem is contingent on flawless performance.

Kamushadze et al. (2021) examined the covariance between various aspects of the maladaptive trait of being exact with psychological well-being in 156 college subjects and found strong link between them. Sidharth, Yadav and Sanwria (2023) explored the relationship various facets of perfectionism have well-being of young people in the India's capital city Delhi and its surrounding areas. They found that 84% subjects did not subscribe much to the trait of being perfect. 44% of the participants considered them to be seeking this trait. 56% subjects engaged in self-criticism under stress, 24 % of them believed that striving for perfection was needed for leading a positive life.

Muhammad and Noor (2024) investigated the link between multidimensional perfectionism, intolerance of uncertainty, and self-compassion in OCD patients. The results showed that maladaptive perfectionism and intolerance towards uncertainty covaried positively and significantly with obsessive-compulsive disorder and covaried negatively and significantly with self-compassion and adaptive perfectionism. Also,

self-compassion correlated negatively but significantly with obsessive compulsive disorder.

Bushra and Ali (2024) explained that young adults' closer relationship with parents and peers had a significant and negative covariance with the variable loneliness. Using the statistical technique of hierarchical regression analysis, they showed that age and affair were significant negative antecedents, and all forms of perfectionism were significant and positive antecedents of loneliness. Gender played no role with respect to both the discussed variables. Individuals under the negative spell of Perfectionism due to their unrealistic goals become isolated from others nd hence experience loneliness

1.5.1 Relationship between Perfectionisim and self-handicapping

Frost et al. (1990) suggested that adaptive form of perfectionism impacts perceived self-efficacy and successful performance in studies, while it has a significant negative impact on self-sabotagging. This implies that students with a tendency towards positive perfectionism experience higher levels of mentioned these enabling variables and engage in fewer self-obstructive behaviors. Positive perfectionist students are known to exhibit enhanced motivation and focus and control internally while pursuing of the elevated standards they set for themselves contributing to their success in academic endeavors.

Pliner (1994) found that learners with high sense of direction in life and reeling under the society-imposed pressure of perfectionism are the more probable to exhibit self-desruptive behaviors. Self-oriented perfectionists strategize to use it as a means of saving the self, while perfectionists under the influence of society engage in self-obstruction for the purpose of presenting the self appropriately. This distinction suggests that different motivations underlie the self-handicapping behaviors exhibited by individuals with varying perfectionistic tendencies.

According to Greenspon (2000), the consideration of perfectionism and self-handicapping together is crucial for successful counseling services. Teachers or counselors working with bright students should primarily understand the distinction between exactness and advanced goals. Given the higher intellectual abilities of gifted students, they may be capable of achieving sophisticated tasks that might be perceived as highly challenging or unrealistic for regular classroom students. Therefore, it is

important for stakeholders to discern the difference between advanced goals and unreachable and unrealistic goals sets for the gifted students. This understanding is essential for providing effective support and guidance to gifted individuals.

According to Sherry et al. (2001), there is a strong covariance between self-desruption and perfectionism (measured by both types), fuelled by benchmark related, competence related and perception in others related worries in the subjects, in line with earlier studies (Frost et al., 1990; Hobden and Pliner, 1995 and Sherry et al., 2001). The researchers propose a theoretical model suggesting that the perfectionism, under failure related anxiety, leads to the development of self-handicapping actions. For example, if a subject believes he or she must perform as per an excellent benchamark and at the same time also is plagued with self-doubts on his or her ability, then a possible way out is to employ self-handicap as a strategy and display publicly withdrawing effort, hence making perfectionism the antecedent of self-handicapping behaviors. The findings regarding this trait taking longer to reduce than being flawless suggest that behaviors, in the place of thoughts alone, are part of this process.

The self-disruptive strategies were found to be positively linked to being flawless (Frost, Marten et al., 1990; Garcia, 1995; Hobden and Pliner, 1995; Sherry, Flett, and Hewitt, 2001; Zuckerman, Kieffer, and Knee, 1998; Midgley and Urdan, 2001). This suggests that learners under the negative spell of perfection set unrealistic standards, reel under heavy expectations and experience deep worries and failure related fears. The consequence is adoption of several debilitating traits and experience of unhealthy physical, psychological, emotional and social states. These self-handicapping behaviors serve as a means for these students to protect themselves. However, engaging in such behaviors comes at a cost, as individuals may experience various consequences, including physical effects, psychological consequences, and missed opportunities.

Parker (2000) revealed that a majority of gifted students exhibit positive sense of perfectionism, emphasizing the pursuit of excellence. However, a smaller but still notable percentage of gifted students experience non-perfectionist tendencies, and some grapple with expectations that are not pragmatic enough and negative sense of perfectionism. In terms of academic achievement, gifted students often strive for top grades, and some may even find it challenging to be content with achieving the

highest test scores. This relentless pursuit of perfection can contribute to social and feelings related challenges among gifted students, including problems such as anxiety, depression, low self-esteem, stress, and, even thoughts of ending one's life.

Haase et al. (2002) argued that individuals with perfectionistic tendencies may adapt their goals when they fail to achieve their initially set objectives. This adaptability suggests a level of flexibility and high self-regulation skills in these individuals, which may reduce the need for self-handicapping strategies. Learners with maladaptive sense of perfectionism have lower belief about them and about achieving of any study related targets while exhibiting high levels of self-obstructive behaviors to protect their self-esteem and avoid being perceived as untalented or unskilled, all the while setting unattainable goals beyond their abilities and experiencing constant worries and fear about making mistakes

While the research literature does not directly address the link between unhealthy perfectionism and self-disruptive behavior, there is an implication that bright students experiencing unhealthy perfectionism may be more vulnerable to exhibit self-handicapping acts in comparison to healthy and adaptive perfectionists. Maladaptive perfectionism is often linked to symptoms such as stress, anxiety, shame, and depression, which could contribute to the adoption of self-obstructive strategies. In contrast, students with positive sense of perfectionism, characterized by heightened intellectual aptitude and clear, consistent, and achievable goals, may have less reason to engage in self-handicapping behaviors.

Procrastination, characterized by delaying tasks or actions, is viewed as a type of self-sabotagging behavior and can have detrimental effects on performance, especially for gifted students. In the context of perfectionism, a gifted student who is afraid of failure may choose to avoid taking action on a task, believing that success is unlikely. Consequently, the student may procrastinate, leaving minimal time for study or completion of the task, ultimately leading to a mediocre performance. This pattern of behavior aligns with the concept of self-handicapping, where individuals create obstacles or to protect their self-esteem in the face of potential failure. Recent research suggests that positive perfectionist students demonstrate a preference for solving more complex questions compared to their negative perfectionist counterparts when presented with questions ranging from simple to complex. This finding

indicates that positive perfectionists exhibit higher levels of motivation and greater belief in their self-efficacy to achieve challenging goals. The study conducted by Stoeber et al. (2008) emphasizes that positive perfectionists tend to be more optimistic about their competencies. Moreover, their recurring successful performances are attributed to an increase in their perceived self-efficacy. Various studies also indicate that positive perfectionists employ more effective strategies to cope with stress and achieve higher academic success.

The study conducted by Niknam, Hosseinian and Yazdi (2010) found significant positive and negative correlations between negative and positive perfectionism, and self-handicapping, respectively. Both negative and positive perfectionism were identified as significant predictors of changes in self-handicapping behaviors. The presence of positive perfectionism was linked with a lower probability of the self-disruptive behaviors, while the presence of negative perfectionism was linked to a higher probability of the existence of self-handicapping behaviors.

Perfectionism emerges as a significant factor contributing to self-handicapping behaviors among gifted students, as indicated by studies conducted by Kearns et al. (2008) and Stewart and De George-Walker (2014). The relentless pursuit of perfection and exceptionally high standards set by gifted individuals may lead them to engage in self-handicapping strategies, potentially hindering their own performance and achievement. This connection highlights the complex interplay between perfectionism and self-handicapping tendencies within the context of gifted education.

Kearns and colleagues (2008) suggest perfectionist learners are at high risk of adopting this mal-adaptive strategy rather then eventually engaging in it. In their model on this trait, they stressed that sense of perfectionism and being afraid of failure can heighted the belief of not reaching the pre-set mark of performance. As a protective measure, these perfectionist students intentionally employ self-handicapping strategies to conceal the potential failure they anticipate. The risk of this maladaptive strategy is more in bright students for whom self-image means the world. Striving for perfection and the desire to be perceived as perfect by others may drive these students to intentionally create obstacles, providing them with an opportunity to maintain the illusion of potential perfection even in the face of possible failure (Adelson, 2007).

Hobden and Pliner (1994) provided insights into the intricate link between the various factors of perfectionism and the manifestation of self-handicapping behaviors. Their findings indicate that students characterized by heightened levels of self-oriented or socially-prescribed perfectionism are more likely to adopt this self-disrupting behavior in comparison to their counterparts. Individuals with self-oriented perfectionism tend to employ handicapping of self as a defensive practice, seeking to protect themselves from potential failure. Conversely, those with socially-prescribed perfectionism use self-handicapping as a tool for self-presentation, aiming to control how they are perceived by others (Hobden and Pliner, 1994). Although the research literature has not extensively delved into the covariance between negative perfectionism and self-disruptive behaviour, it is conceivable that gifted students displaying unhealthy perfectionism may exhibit a higher propensity for engaging in this behavior than those with positive sense of perfectionism.

The existing edifice of knowledge suggests a strong association between negative perfectionism and harmful psychological symptoms such as stress, depression, anxiety and shame (Ashby, Rice, and Martin, 2006). These adverse psychological outcomes linked to maladaptive perfectionism may contribute to the adoption of self-impeding behaviors. Conversely, students with positive sense of perfectionism, characterized by advanced intellectual potential and clear, consistent, and attainable goals, may lack a compelling reason to engage in this behaviour. Procrastination, a form of this trait, is particularly relevant for gifted students. When perfectionist bright students experience a fear of facing setback regarding a specific task, they choose to be inactive due to concerns that the task will not meet their high standards. Alternatively, they might procrastinate, leaving insufficient time for adequate preparation and compromising the potential for outstanding performance.

Hobden and Pliner (1994) shed light on the link between various dimensions of perfectionism and self-sabotagging behaviors. They found that students with elevated levels of self-oriented or socially-prescribed types are highly inclined to indulge in self-sabotagging behaviors compared to their peers. Self-oriented perfectionists utilize this trait as a strategy for self-protection, aiming to shield themselves from potential failure. On the other hand, socially-prescribed perfectionists employ self-handicapping as a means of self-presentation, attempting to manage how they are perceived by others (Hobden and Pliner, 1994). While the connection between

negative perfectionism and self-disruptive acts has not been extensively explored in the literature, it is plausible that bright students with negatives sense of perfectionism may be more vulnerable to exhibit self-handicapping acts than those with adaptive and healthy perfectionism.

Existing edifice of knowledge suggests that maladaptive perfectionism is closely linked to symptoms of depression, stress, shame and anxiety (Ashby, Rice and Martin, 2006). These negative psychological outcomes associated with maladaptive perfectionism may contribute to the adoption of self-impeding behaviors. In contrast, learners with positive sense of perfectionism, who have high intellectual aptitude and clear, consistent, and reachable goals, may not have any compelling reason to engage in this behaviour. Procrastination, a form of this trait, is particularly relevant for bright students. When perfectionist bright students experience a fear of facing setback regarding a specific task, they may choose to be inactive due to concerns that the task will not meet their high standards. Alternatively, they might procrastinate, leaving insufficient time for adequate preparation and compromising the potential for outstanding performance. Greenspon (2000) cautions the teachers to clearly realize the dynamics of perfectionism as it plays outs in the bright and average students of the class. While the former by their very disposition are driven to set high standards for their own maintenance of self-esteem, setting non-pragmatic gaols can rise the risk of adoption of the discussed maladaptive behaviour even by these intelligent kids reeling under very high pressure of self-image and its protection. The gravity of the situation worsens when neurotism, sense of being spotless from others and deep sense of direction in life come together. Bright students are in a vulnerable position under such conditions when their success rate of performance is blike and there is threat to their self-image. Teachers should immediately take such students into a safe learning environment and provide much need counselling. Challenges in learning, need not mean competition alone and can be enjoyable learning tasks instead. Also, these students should be guided to place sincere efforts and experience the process, instead of worrying about the product (Adelson, 2007).

In recent years, the edifice of knowledge in psychology discipline considered perfectionism and self-handicapping as separate constructs. However, extensive work on post graduate students, with respect to these two traits, found that perfectionism, as a faculty cognition inherited by a subject, is the antecedent and contributes in the

development of self-handicapping related acts, along with other undesirable behaviors like excessive commitment, procrastination, lack of effort and busyness as shown below in the conceptual model of Fig. 1.4.

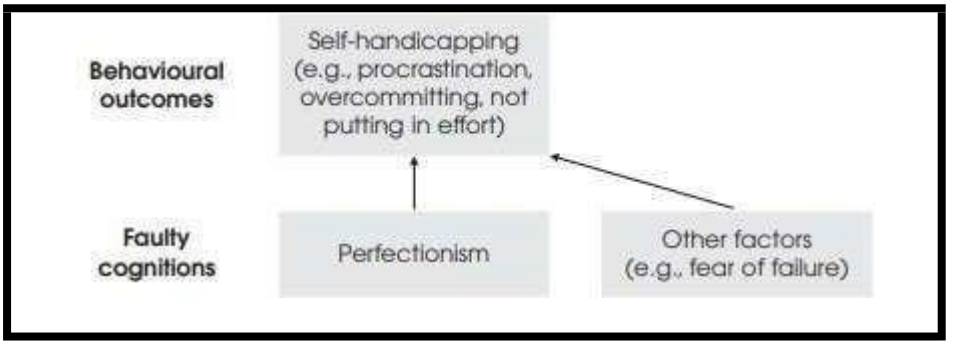

Fig. 1.4 New model suggesting the association between Perfectionism and Self-handicapping (Source: Kearns et al., 2008)

Although the behaviors are accompanied by specific thoughts (e.g., "I'll do this tomorrow," "I've been so busy, it's hard finding time to do this"), at the core-level, the thoughts ultimately drive these behaviors. The framework doesn't assert that perfectionism invariably predicts self-handicapping acts or vice versa, although both the phenomena occur co-existently, thus aiding the framework as a means to bind these constructs. As shown below in figure 2, a useful analogy in this regard is the iceberg model, where the tip of the iceberg can be self-impeding behaviors which cover the entire iceberg of procrastination related thoughts. To illustrate, consider a university student who tends to procrastinate exam revision related tasks by convincing self through thoughts like "I'm a bit tired; tomorrow will be a better time to do this." Beneath the observable acts, lie hidden faulty thoughts that truly underlie her procrastination. From the perspective of the student, these thoughts may be perfectionistic and the subject may genuinely believe that her efforts won't meet her high standards, leading her to hesitate in starting a task that might not align with her own rigorous expectations, thereby resulting in procrastination.

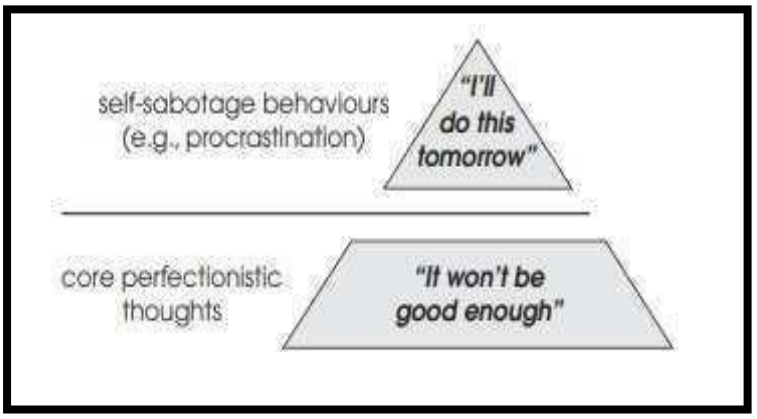

Fig. 1.5 "An example of Visible Behavior and their Underlying Cognitions" (Source: Kearns et al., 2008)

The explanation provided in the above theoretical framework was empirically supported by the works of Sherry et al. (2001), Hobden and Pliner (1995) and Frost et al. (1990), where higher levels of perfectionism and frequent display of self-sabotagging actions were found to be linked, although further empirical testing is warranted. To bring down the instances of this behaviour, it is not enough to merely study the overt behaviors or surface level thinking, and extend the research enterprise to delve deeper into the faulty cognitions residing in even deeper levels of thought mechanism. Procrastination can be uprooted only addressing the underlying beliefs and not through mere targeting of overt acts, if ever, recuurence of self-sabotahing acts is to be curbed.

1.6 NEED OF THE STUDY

India is one of the youngest nations in the world with a large percentage of its population within the workable age range or about to enter the workforce. Such a demographic reality makes its exceedingly relevant to work towards the employment opportunities of these subjects. The foundation of such an exercise resides in higher education institutions across the country. Especially, the country is in dire need of quality graduates with background in Science, Technology, Engineering and Mathematics (STEM) that are highly sought after by the industry employers. Equipping the young citizens of the country with requisite skills of 21st century so that they can become global citizens and contribute their bit in enhancing India's soft powers, is possible only when the environment of these crucibles of learning is conducive for it, followed by the subjects seeking education from these institutions

possessing a healthy sense of perfection and in all honesty ascribe the correct elements or factors responsible for their actions in academics by selecting temporally stable, volitionally well-controlled and residence-wise intrinsic factors of learning. Such a scenario can possibly safeguard the youth of this nation from any forms of self-disruptive and maladaptive strategy of self-handicapping. Without empirical understanding of the interplay among these variables, the policy makers and stakeholders of tertiary level education would be unequipped to rationally take any concrete steps. Moreover, as discussed by Gupta and Gupta (2022), the National Education Policy (2020) places lot of importance to higher education and its quality promotion and excellence, with the aim to achieve universalization of higher education by 2035. The study gains further relevance owing to the fact that India ranks second in tertiary level education sector in the world after China (Hoque, 2022, Verghese and Sabharwal, 2022) and among the subjects attending the tertiary level institutions, the behavior of academic self-handicapping is highly prevalent (Novotney, 2015 as cited by Nandini and Kanchana, 2022). In this context, the present study intends to contribute in this direction by contributing enhancement of the literature of this trait and certain influencers of it at higher education level in India, since it is the crucible from which information, knowledge and highly skilled professionals emerge representing a rich human capital in any knowledge based economy (Aparicio, Iturralde and Rodriguez, 2023). The age of 17 to 28 years is known as the "Window of Vulnerability" where youth get exposed to substance abuse primarily owing to peer pressure and fear of missing out in social setting (Namada and Karimi, 2021), and since self-handicapping and substance abuse are closely related (Manav and Temel, 2024), with the state of Punjab, in particular, having a high burden of substance use disorders (Chavan et al., 2019), an empirical study to investigate the role of college academic environment (Chen and Chen, 2020), attributional beliefs (Yang et al., 2017) and perfectionism (Nelsen et al., 2019) in mitigating the mentioned issue was warranted.

1.7 SIGNIFICANCE OF THE STUDY

Self-handicapping is a behavioral phenomenon characterized by the deliberate assertion or development of impediments to self's achievements before a significant upcoming public performance (Berglas and Jones, 1978). Those who indulge in this behavior often generate pretexts when they anticipate dismal performance, attributing the potential failure to a self-created obstacle rather than a lack of ability (Arkin and

Baumgardner, 1985). The underlying motivation behind self-handicapping has its origin in the wanting to safeguard a positive self-image of capability, aiming to persuade both oneself and other people that the handicap, rather than personal ability, is responsible for any potential failure. While the exact birth of the inclination to embrace self-handicapping remains undetermined, scientists have explored dispositional variations in individuals' likelihood to exhibit self-handicapping behaviors. Various factors, such as social shyness, test anxiety, and hypochondriasis, are considered as potential antecedents of this behavior. These differences typically predict situations of significant importance or public scrutiny where individuals are more likely to employ self-handicaps. Furthermore, Sheppard and Arkin (1989) conducted a study examining the impact of self-impediment trait on undergraduate men and women before a test assessing academic ability. The results indicated that gender could amplify an individual's inclination to this disenabling tendency in situations where the ego is involved, with being flawless a notable factor.

The literature suggests that attributional beliefs, encompassing causal attributions, achievement goals, and behaviors in response to obstacles, play a crucial role in influencing self-handicapping. Additionally, it is emphasized that this trait may be imposed or, at the very least, supported by the cultural or subcultural context of a learner or by the overall atmosphere within a university setting.

The field of learning environment has experienced rapid development, featuring a range of validated tools and research spanning 12 domains at least. These domains include the evaluation of innovations in education, comparisons of the perceptions of the student and teacher on classroom environments, and the utilization of environmental instruments to facilitate changes in classroom dynamics (Fraser, 1998b). While previous studies have predominantly focused on outcome variables such as student achievement and attitudes, none have specifically examined self-handicapping as an outcome within the learning environment. The present study aimed to contribute to and expand the research in the learning environment field by integrating the latest and comprehensive learning environment tool validated in the Indian context of the construct of self-handicapping. This approach allowed for a comprehensive exploration of the interplay between the learning environment and the phenomenon of self-sabotaging in a single study.

The influence of Attributional Beliefs, Learning Environment, and perfectionism on the self-handicapping tendency of higher education students represents an underexplored area in educational research. These variables play a vital role in the causation of self-handicapping tendencies in higher education students. The existing literature lacks consistency regarding whether or not Attributional Beliefs, Learning Environment, and perfectionism affect self-obstructive tendencies. Notably, there is a scarcity of research specifically investigating the impact of these three variables on self-handicapping tendencies in the available literature. As a result, there is a pressing need for further research to come up with a detailed understanding of how Attributional Beliefs, Learning Environment, and Perfectionism interplay and influence the Self-handicapping tendencies of higher education students. The study also held importance since it was conducted during times when the society is knowledge based and the focus of the Indian government is also to generate human capital so as to speedily head from the status of being a developing nation to a developed nation. Such exercises can bear fruits provided the human capital to be produced from the Indian universities is immune from the self-destructive traits like self-handicapping. Also, NITI Aayog, which is the Government of India's main think tank and the Ministry of Statistics and Programme Implementation (MoSPI) are entrusted with implementation of the Sustainable development goals (SDGs) in the country. The study was expected to contribute in policy formulations related to the sustainable development goals like 3 and 4, which are good health and wellbeing, and quality education at tertiary level, owing to its central theme of study of learning environment at tertiary institutions and certain vital psychological traits of students at this level of education.

1.8 STATEMENT OF THE PROBLEM

This proposed study aims to delve into the intricate relationships and collective influence of attributional beliefs, learning environment, and perfectionism on the self-handicapping tendencies of higher education students. The research seeks to address the current gap in the literature by providing a nuanced understanding of how these factors interact and contribute to the manifestation of self-sabotaging behaviors in the tertiary level.

1.9. OPERATIONALIZATION OF VARIABLES

According to Arias Gonzales (2021), operationalization of the research variables comprises of the following components:

Variable	Conceptual Definition	Operational Definition	Dimensions	Sample Indicator	Measurement Scale
Self-Handicapping	It It is defined as "behavioral patternsthat involve the creation of barriers to human performance, so that in the event offailure, obstaclesare cause rather tha important personal traits	Self-Handicapping Tool comprising of 12 Items by Kaur and Raji (2022)	1. Behavioural 2. Claimed	"When I do something wrong, my first intention is to blame the circumstances"	Likert Scale With Ordinal responses

	such as skill or intelligence" (Kaur and Raji, 2022).				
Learning Environment	The learning environment of a college / niversity is defined as "the melieu of factors forming a conductive ecosystem of learning like financial resources, physical resources, administrative procedures and	College University Environment Scale by Williams (1997) comprising of 112 Items	1. Financial 2. Physical 3. Procedure 4. Organization 5. Teaching Facilitation 6. Technical 7. Professor's Evaluation 8. Student Evaluation 9. Curriculum Evaluation 10. Learning style 11. Effectiveness 12. Social academic support 13. Influence 14. Social Recreational 15. Scholarly	"The College/University grounds, residence, classrooms and buildings are conveniently located"	Likert Scale With Ordinal responses

	organization, teaching facilitation, technical support, evaluation, curriculum, learning styles, effectiveness of teaching, social andacademic support, students'say and social activities and recreation" (Williams, 1997).		16. Job / Career		
Causal Attributional	Causal attributional	The Revised Causal	1. Locus of Causality 2. External controllability	"Your high ability In the subject	Sementic Differential

Belief	belief is defined as "the causes attributed to positive and negative events experienced by the subjects in terms of the causal imensions, locus of causality, stability, personal and external control" MacAuley, Duncan and Russell, 1992 as adapted by	Dimension Scale (CDSII), by Gupta and Kumar (2023) comprising of 12 items	1. Stability 2. Personal controllability	reflects an aspect of yourself"	Scale with Ordinal responses

	Gupta and Kumar, 2023).				
Perfectionism	Perfectionism is definedas “a personality trait marked by an inclination to place disproportionate emphasis on precision and organization” (Smith, 2016).	The Big Three Perfectionism scale by Smith (2016) comprising of 45 items	Dimension 1. Rigid Perfectionism consists of two facets: Self-oriented perfectionism (SOP; 5 items) Self-worth contingencies (SWC; 5 items) Dimension 2. “Self-critical Perfectionism consists of four facets: Concern over mistakes (COM; 5 items) Doubtsabout action (DAA; 5	“I strive to be as perfect as possible”	Likert Scale With Ordinal responses

			items) Self-criticism (SC; 4 items): Socially-prescribed perfectionism (SPP; 4 items)" Dimension 3. Narcissistic Perfectionism consists of four facets: Other-oriented perfectionism (OOP; 5 items) Hypercriticism (HC; 4 items) Entitlement (ENT: 4 Items) Grandiosity (GRAN: 4 Items)		

1.10 OBJECTIVES OF THE STUDY

1. To explore the self-handicapping tendencies among higher education students.
2. To study the causal attributional beliefs, learning environment, and perfectionism exhibited by higher education students.
3. To find out significant difference in the mean self-handicapping tendency, mean causal attributional beliefs, mean learning environment and mean perfectionism among higher education students on the bases of their gender, locality and discipline.
4. To find out the impact of causal attributional beliefs, learning environment, and perfectionism on the self-handicapping tendencies of higher education students.

1.11 HYPOTHESES

H_0: 1. There is no significant difference in the mean self-handicapping tendencies between male and female higher education students.

H_0: 2. There is no significant difference in the mean self-handicapping tendencies between rural and urban higher education students.

H_0: 3. There is no significant difference in the mean self-handicapping tendencies among science, arts and commerce higher education students.

H_0: 4. There is no significant difference in the mean causal attributional beliefs between male and female higher education students.

H_0: 5. There is no significant difference in the mean causal attributional beliefs between rural and urban higher education students.

H_0: 6. There is no significant difference in the mean causal attributional beliefs among science, arts and commerce higher education students.

H_0: 7. There is no significant difference in the mean learning environment between male and female higher education students.

H_0: 8. There is no significant difference in the mean learning environment between rural and urban higher education students.

H_0: 9. There is no significant difference in the mean learning environment among science, arts and commerce higher education students.

H_0: 10.There is no significant difference in the mean perfectionism between male and female higher education students.

H_0: 11. There is no significant difference in the mean perfectionism between rural and urban higher education students.

H_0: 12. There is no significant difference in the mean perfectionism among science, arts and commerce higher education students.

H_0: 13. There is no significant relationship of learning environment on self-handicapping tendencies of higher education students.

H_0: 14. There is no significant relationship of causal attributional beliefs on self-handicapping tendencies of higher education students.

H_0: 15. There is no significant relationship of perfectionism on self-handicapping tendencies of higher education students.

H_0: 16. There is no significant predictive relationship of learning environment on self-handicapping tendencies of higher education students.

H_0: 17. There is no significant predictive relationship of causal attributional beliefs on self-handicapping tendencies of higher education students.

H_0: 18. There is no significant predictive relationship of perfectionism on self-handicapping tendencies of higher education students.

H_0: 19. There is no significant simultaneous predictive relationship of causal attributional beliefs, learning environment, and perfectionism on self-handicapping tendencies of higher education students.

1.12 DELIMITATIONS

The scope of the current study will be confined to higher education students of Arts, Science and Commerce streams specifically in the three regions of Majha, Malwa and Doaba regions of Punjab state. The study is delimited to the variables self_-handicapping tendency, attributional beleifs, learning environment and perfectionisim

CONCLUSION

The theoretical underpinning of the study, coupled with its need, significance and objectives were discussed. In the incoming chapter two, the Literature review, the credence of the study in conjunction with the present edifice of knowledge is presented and discussed, eventually leading to the formation of the conceptual framework of the study.

CHAPTER-II

REVIEW OF RELATED LITERATURE

The review of relevant literature serves the purpose of presenting the existing knowledge and ideas established by recognized academics and researchers within the field. It offers hypotheses, suggests investigative methods, and provides information for interpreting results. In this particular study, various sources such as research articles, theses, book chapters and government documents have been utilized to conduct a detailed review of the related literature. Below, detailed information regarding the literature associated with different variables is presented.

2.1 STUDIES PERTAINING TO SELF-HANDICAPPING

The theoretical foundations of this behavior can be traced back to the "*attribution theory*" by Heider's (1958), the "*Impression management theory*" by Goffman's (1959), and Kelley's (1972) "*discounting and augmentation principle*". Heider's (1958) attribution theory posits that individuals have a natural inclination to provide causal explanations for the situations they encounter. Building upon Goffman's and Heider's theories, it is argued that self-handicapping primarily deals with concerns related to self-presentation concerns in the context of individuals' attributional processes.

In line with Kelley's (1972) "*discounting and augmentation principle*", attributing dismal performance to other factors, serves to downplay the influence of insufficient capability, while attributing success to ability aims to accentuate the role of high competency. Consequently, the introduction of obstacles enables individuals to externalize failure by attributing it to these hindrances when confronted with an unfavorable outcome. Conversely, it facilitates the internalization of success by allowing individuals to claim more credit for their abilities when they achieve a desired outcome.

The term "self-handicapping" was originally coined almost four decades ago by Berglas and Jones in 1978, who defined it as "the act of creating or asserting obstacles with the intention of reducing the likelihood of successful performance, all in an effort to safeguard one's perceived competence" (Berglas and Jones, 1978).

In a more expansive context, Berglas and Jones (1978) also articulate the definition of self-handicapping as “any action or choice of performance setting that enhances the opportunity to externalize (or excuse) failure and to internalize (or reasonably accept credit for) success”.

According to Kolditz and Arkin (1982), self-handicapping extends beyond being a mere trait associated with self-attribution of competence and is also a self-presentation strategy helping an individual mould his or her public image. In their study, the reseachers found that this trait increased when subjects are in public, with performance-enhancing choices opted more when in private conditions, and performance-inhibiting options selected more when in public. Importantly, both actual and imagined audiences played a role in influencing individuals' tendencies toward self-handicapping.

In the research carried out by Pyszczynski and Greenberg (1983), subjects who believed that the likelihood of success in a significant intelligence test was low exhibited reduced effort in preparing for the actual test. They reported attributing their performance to having a challenging day, and they claimed to be less well-rested. When individuals perceive a low probability of success in a crucial evaluative performance, there is a heightened inclination to employ a strategy of self-handicapping, which is classified as one of the mechanisms to be defensive.

Baumeister, Hamilton, and Tice (1985) discovered that actions are influenced both by public and private expectations of success. While expectating success privately, increased performance, its expectation in public negatively affected the efficiency depending on the performers' beliefs on the credibility of others' expectations. When success is not privately anticipated, pressure from the others in public, can reduce the expectations of success by decreasing the performance. However, when public expectations of success are considered to be assured, the performer begins to trust his or her ability to succeed, leading to an enhancement in performance. On the contrary, when an individual privately expects failure but others anticipate success, performance tends to be poorer.

Individuals typically endeavor to get and uphold a favourable evaluation of the self by putting forth their best efforts, seeking approval from others. Nonetheless, there are occasions when people may find themselves unable to achieve the desired success.

While Arkin and Baumgardner (1985) categorized self-handicapping as “acquired impediments” and “claimed difficulties”, Leary and Shepperd (1986) classified it as “behavioral self-handicapping” and “self-reported handicapping”. The former is more serious in its impact by being more convincing and destroying more the chances of success. On the other hand, the latter is not only less credible but also less expensive in impacting the chances of success. In this way, both these mentioned strategies of self-handicapping are the common causations for poor performances with their varying costs to the possibility of suucess. The latter form of handicapping does not bring down the probability of performance success in real terms, while the former effect the chances of success actually. The later strategy of self-handicapping also leaves a deeper undesirable impression on the individual as well. For example, when a student attributes his or her failure in a test to the trait of high test anxiety instead of reporting of placing reduced effort, there is an increased chance of his or her claim be more readily accepted by teacher. As a result, the former form of self-handicapping strategies is considered to be more severe than the latter ones.

Various studies, employed self-handicapping scales to scrutinize gender differences in this characteristic and have produced mixed results (Jones and Rhodewalt, 1982). Men may be more inclined towards self-handicapping due to their increased susceptibility to the adverse consequences of failure.

In Strubes (1986) study, subjects were presented with a checklist encompassing factors such as a heavy load of the course they studied, illness, sleep depreviation, and other tests, which could potentially stop them from delivering their actual level of achievement. The results showed that men with more levels of self-handicapping, also reported more excuses immediately after the test and before the subsequent test. However, the study did not find any statistically relevant difference between women with high and low levels of self-handicapping, with respect to their performance.

Shepperd and Arkin (1989a; 1989b) investigated the effects of importance of a task on self-handicapping. 50 percent of the subjects were conveyed of appearing in a valid and reliable test to predict their academic and professional success, while the rest were informed of being part of a new test not having validation and predictive powers. In this way, two condictions of tasks of varying importance were created. However, all the subjects were made to appear for the same test. The findings

revealed that subjects belonging to the group of condition of high task importance displayed greater self-handicapping.

Rhodewalt et al. (1991) studied the effects of varying levels of self-esteem on self-sabotagging. It was revealed in their work that, following setback feedback, individuals with more of this trait, irrespective of their self-esteem level, tended to discount attributions to ability. Conversely, after receiving feedback of success, only subjects with higher levels of both self-handicapping and self-esteem supported attributions to ability. This result indicates that the desire to protect the self is more dominant in individuals than the desire to improve one's self in the context of scenarios involving self-handicapping.

Hirt, Deppe, and Gordon (1991) asserted that a general common ground on the objective of displaying self-handicapping tendencies had not been reached. Some researchers proposed self-esteem protection as the primary goal, while others emphasized the importance of impression management. In a study by Luginbuhl and Palmer (1991), participants evaluated individuals with and without disabilities in a specific scenario across various dimensions. Self-impaired individuals were rated higher in intelligence, knowledge, and overall performance. However, they were perceived as lacking motivation and were considered undesirable as fellow students. This highlights a potential risk that more impactful self-handicapping strategies might lead to a decline in actual performance.

Deppe and Harackiewicz (1996) proposed that self-impaired individuals pay less attention to anxiety and failure related fear of failure while performing owing to their readymade excuse or explanation for potential failure. Also, they argued that self-handicapping facilitates the maintenance of intrinsic motivation. Their conclusion was that interest in a task is reduced on ontaining a negative feedback, and such an undesirable consequence can be reduced by displaying self-handicapping trait by offering immediate excuses. It can thereby increase engagement with the task and promote positive feedback. The results of their study indicate that self-impaired individuals who practiced less before the actual performance were less likely to perceive themselves as impaired than those who engaged in more practice. Moreover, such subjects reported higher levels of enjoyment and engagement in tasks as well.

Feick and Rhodewalt (1997) asserted that studies conducted in laboratories predominantly concentrate on the self-protection aspect of self-handicapping, often neglecting its self-enhancement aspect. In an effort to address this gap, they performed a field study in a naturalistic setting, to explore how self-handicapping trait impacted self esteem and attribution involving augmentation and discounting of abilities. Initially, the subjects were evaluated for their self-esteem and self-handicapping tendencies. After their first in-class exam, these subjects were made to complete a checklist consisting of claimed handicap items. Following the announcement of exam results, subjects provided the scores of ability attributions, mood and self-esteem for their performance. Findings showed that subjects with higher self-handicapping trait communictaed more pretexts before the test. Furthermore, in failing subjects, self-handicapping was linked to higher self-esteem and reduced ability attribution, while in successful subjects, self-sabotagging was linked with enhanced self-esteem and the augmentation of ability attribution.

Brown (1998) concluded that self-handicapping behaviors, while decreasing the probability of achievement, provide individuals with a means to camouflage their setbacks by generating convenient pretexts instead of confronting the actual root cause, which is incompetence. Berglas and Jones (1998) asserted that the tendency for self-sabotagging is fundamentally linked with doubtfulness on self's competence. They further argued that learners who have confidence in their competence and the ability to navigate daunting situations do not require the ascribing benefits of self-sabotagging. Instead of resorting to this disenabling strategy, they achieve the wanted effects through actions well directed towards their goal and its attainment.

The nature of feedback received or provided serves as another antecedent of this behavior. Achievement, which is both contingent and non-contingent, coupled with offering of failing feedback, influence individual's self-handicapping traits in distinct ways. Feedback associated with Non-contingent success informs individuals that they have performed exceptionally well on an improbable task. On the other hand, contingent success feedback indicates that the individuals have excelled in a task that is achievable for them in real terms.

Zuckerman et al. (1998) discovered that individuals with higher self-sabotagging traits tend to engage in a detrimental cycle over the long term. This suggests a correlation wherein subjects with elevated levels of this behavior are more prone to employing dysfunctional coping strategies that elicit negative emotions, such as self-centered rumination, denial and withdrawal. Consequently, over time, this pattern is associated with lower self-esteem and heightened negative moods, further contributing to an increase in self-handicapping tendencies.

Dweck (1999) advocated for the promotion of the concept of intelligence as a malleable trait that can be enhanced through effort by elders. This approach encourages more frequent praise for utilizing effective anti self-sabotagging strategies. In a qualitative research, it was identified that self-handicapping was positively correlated with test anxiety. Individuals with high self-handicapping tendencies were more inclined to procrastinate, abandon tasks, or seek excuses in the face of failure.

Martin and Brawley (2002) revealed that gender was not significantly related to self-obstructing behaviour. Martin et al. (2003) found that certain subjects in their study reported perceived advantages of self-sabotagging, such that it made it easier for them to generate excuses in the event of failure. Hirt, McCrea, and Boris (2003) provided further clarity on self-handicapping by presenting an illustrative example. In this scenario, a student chooses to go to the movies the right before an exam in the place of preparing. If the student doesn't perform well in the exam, he or she can then attribute the outcome to a lack of preparation, thereby concealing any deficiency in intelligence or ability. On the other hand, if the student performs well, he or she might attribute the success to inherent intelligence or ability, since he or she faired well in the exam without prior studying.

Martin, Marsh, Williamson, and Debus (2003) asserted that most of the studies involving the investigation of self-handicaaping traits in university students typically consisted of using either experimental manipulation or self-report measures. They performed a qualitative study in an effort to gain a more comprehensive understanding of how individuals employ this behavior, the reasons behind indulging in such acts, and the goal orientation of these subjects.

Subjects with high level of this trait reported various behaviors associated with it prior to exams or assignments, like going out, watching TV, visiting relatives, engaging in

housework (such as cleaning the wardrobe), and postponing the study by leaving it until the last minute. In contrast, subjects identified as low self-handicappers did not partake in such acts. Instead, they demonstrated greater awareness of potential distractors. Their answers involved selecting to study at the library to by-pass distractions present at home (such as food and television), not accepting social invitations, and not attending parties to maintain focus on their academics.

High self-handicappers offered various pretexts for getting involved in this behavior, including the desire to avoid stress, downplaying the significance of the task, and providing a readymade excuse as an explanation for their poor performance. In terms of goal orientation, responses indicated that high self-handicappers are less task-oriented and leaned highly towards being ego-oriented in comparsion to low self-handicappers. These subjects also communicated that outperforming others made them feel more achievers since it is visible more than mastering the task in question. Individuals who do not have this trait might not recognize such a planned use of such an undesirable behavior. As a result, they may accept at face value the display of such behaviour by others.

Warner and Moore (2004) illustrated that self-handicappers attribute their poor perfromance in an evaluative situation to the created impediment rather than their incompetence. However, in the event of a successful performance, despite the impediment, their competence is enhanced. This exemplifies the strategic use of self-handicapping to manage attributions and perceptions of competence.

Moreover, the findings from a study conducted by Martin et al. (2003) revealed that individuals with high levels of self-handicapping believed they had limited control over their self-handicapping tendencies. The researchers interpreted this result from a pedagogical standpoint, suggesting that a perception of loss of control can potentially result in learned helplessness. It is worth noting that while self-handicapping may serve a strategic purpose in terms of ability attribution, it can have negative consequences for interpersonal relationships. The focus on creating obstacles or excuses may impact how individuals are perceived and interact with others. Multiple studies, in line with the findings of Elliot and Church (2003), have consistently demonstrated a negative association of handicapping of self trait with academic performance. Self-handicapping has been identified as a negative predictor of both test performance and GPA. Further mediation analyses indicated that the goal

of avoidance partially mediated the link between this behavior and both test performance and grade point average. It emphasizes that self-handicapping is fundamentally rooted in avoidance motivation. Similarly, in Warner and Moore's (2004) study, the scores of this tendency in female participants were significantly higher than those of male participants. This suggests that, in this context, women's self-handicapping tendencies and emotions exerted a greater influence on performance compared to men. Research studies consistently indicate that this behaviour effectively shifts the judgment of others away from ascribing dismal performance to failure. Since it can undermine performance and can cause sustained disengagement from activitiestasks given by educational institutions, it is recommended for the stakeholders to make the learners unlearn it and avoid behaviors that may inadvertently promote it in the first place.

Zuckerman and Tsai (2005) found no existence of statistically relevant gender differences in trait self-handicaps. However, Elliot and Church's (2003) study identified gender as an important antecedent of this behavior, reporting a greater inclination for self-handicapping among women compared to men. The reasons for the discrepancy between these findings would require further investigation.

In a study conducted by Kimble and Hirt (2005), the impact of self-focus when in public, on self-sabotagging tendencies was explored. They defined self-focus as “directing attention inward, toward oneself, as opposed to others and the environment”. Conversely, other-focus was defined as “directing attention outward, towards other people and the environment, rather than oneself”. The researchers changed the conditions of self versus other focus and observed that men were more leaning to show self-handicap when they were in a self-focused state, in contrast to women. This suggests a gender-specific difference in the relationship between self-focus and self-handicapping tendencies.

Pulford et al. (2005) conducted a descripive study comparing antecedents of self-sabotagging in an individualistic culture like the Great Britain, and in a collectivistic culture like Lebanon. The study found that perfectionism and self-esteem were negative antecedents of self-sabotagging in both cultures. As a result, self-sabotagging was not statistically significant with respect to culture. These evidences suggest that this behavior may be more directed towards self oriented than towards others.

In a study by Brown and Kimble (2009), it was demonstrated that male self-handicapping is influenced by the type of feedback received. Specifically, failure feedback, rather than unconditional success feedback, reinforces male self-sabotagging tendencies. The study also indicated that this trait in women was linked to reactions related to their emotions emotions like self-doubt, concern about others' opinions of performance outcomes, and uncertainty in evaluation situations.

Schwinger and Stiensmeier-Pelster (2011) demonstrated that learners who aim their learning direction towards mastery of the content, perceive failure as a chance to grow as an individual since its results can be well-controlled and modified. With such an outlook, these individuals stay way from any self-disruptive acts. Extending this concept to the workplace, it is proposed that performance management tools emphasizing performance goals may lead to concerns about meeting standards, outperforming others, or avoiding the perception of incompetence—factors that can trigger uncertainty and, consequently, self-handicapping. Conversely, a focus on setting goals which aid in mastery and managing of performance help individuals learn from setbacks and grow while taking complete responsibility of their capability.

Brown et al., (2012) demonstrated that women generally do not employ behavioral strategies as self-handicaps, unless they are less motivated to grow and improve their skills. Additionally, women were reported to be less vulnerable to get involved in self-sabotagging acts and less prone to accept others' self-handicaps (Hirt et al., 2003). In contrast, men selected performance-inhibiting substances such as drugs, CDs, cassettes (Brown and Kimble, 2009; Berglas and Jones, 1978; Brown et al., 2012), and alcohol (Tucker et al., 1981). They also exhibit self-handicapping behaviors such as reducing study time (Warner and Moore, 2004), reduced efficiency (Baumeister et al., 1985), and reducing physical activity (Hirt et al., 2000; Kimble, Kimble and Hirt, 2005; Hirt et al., 1991).

Akça (2012) concluded that self-sabotagging covaries in the same direction as academic procrastination and external locus of control, but does the opposite with academic success. Bobo et al. (2013) reported that the neuroticism and the conscientiousness dimensions of personality were significant antecedents of self-sabotagging, with the former dimension displaying positive covariance and the latter dimensions showing negative covariance, establishing empirically the linkage of this undesiravle trait with the factors of personality using regression analysis.

Gender is identified as a critical variable, influencing subject to subject variation in the self-sabotagging literature (Hirt et al., 1991). Some investigators used exclusively male samples (e.g., Tucker et al., 1981; Kolditz and Arkin, 1982; Greenberg, 1985; Rhodewalt and Fairchild, 1991 and Deepe and Harackiewicz, 1996), while others focused solely on female samples. In contrast, most studies used both male and females samples, and some examined the role of gender to this trait. There are clear gender differences in this trait's propensity (Hirt and McCrea, 2009; Brown and Kimble, 2009). Several studies have shown that men tend to exhibit more behavioral self-handicapping than women.

Schwinger et al. (2014) conducted a meta-analysis on the relationship between self-sabotagging and academic performance and found a "*mean effect size*" of Pearson product moment correlation coefficient r at -0.23, highly significant at 0.001 level, and cautioned the stakeholders not to ignore self-handicapping variable's effects which designing educational interventions at various levels of schooling and tertiary education.

While the literature consistently indicates a male dominance in display of "*behavioural"* form of this trait, results on gender differences in its "*claimed*" form produce conflicting findings. Also, there are studies such as Hirt et al. (1991), which found no significant gender differences, between men and women regarding "*self-reported*" handicapping. In situations where social anxiety was considered to be an acceptable reason for failure in assessment situations, men with more social anxiety were found to report more anxiety related symptoms and used this undesirable trait as a strategic tool of self-handicapping, while women did not exhibit the same pattern. This suggests that the relationship between social anxiety and self-handicapping may be influenced by gender-specific dynamics.

Torbrand and Ellam-Dyson (2015) in their work found one subject reporting not putting the full effort into any task owing to the fear that dedicating such a full effort and then receiving poor grades would damage self-esteem more. Here, the student displayed behavioral from of self-sabotagging by intentionally downsizing the effort with the intension of protecting the self. On the contrary, self-reported form of this trait involves letting out the presence of roadblocks to successful performance.

Akın and Akın (2015)'s study communicated that self-sabotagging covaried negatively with essential humane traits of kindness towards self, others and being

mindful. However, only humanity emerged as an antecedent of this trait. Also, undesirable traits like judging the self, remaining aloof from others and over-identification covaried positively and were antecedents of this behaviour among tertiary level students.

In a study by Ganda and Boruchovitch (2015) on teacher candidates, no significant differences were found in self-handicapping based on age, gender, or course year. Although age did not show a direct link with this behavior, young learners were increasingly vulnerable to take part in behavioral form of self-sabotagging.

Çingöz (2015) observed significant differences in university students' self-handicapping levels based on their regular exercise status. Interestingly, this study contradicted findings in sports management students, where no significant difference in self-handicapping levels was detected based on exercise status.

Kalyon et al. (2016) reported a negative association or covariance of self-sabotagging with academic performance among learners of tertiary level. They found that handicapping of self was also negatively linked to academic self-efficacy, negative school climate, school alienation, and fear of failure. These findings align with previous research documenting the adverse effects of self-handicapping, such as increased levels of fear, spoilt mood, depleted levels of mental well-being, reduction in academic efficiency, and heightened levels of defferment of tasks. The results suggest that this behaviour has similar detrimental impact on subjects inside and outside Turkey.

Zafer (2016) found no significant differences in self-handicapping levels based on age among firefighters aged between 20 and 40. This aligns with the sports management students' study, where age did not significantly influence self-handicapping levels. While some studies align with these findings regarding age, others have reported reverse trends.

Ferradás et al. (2016) provided evidence that both the forms of self-sabotagging is heightened with the formation of gaols which are ego-centric in nature. The goals set with the intension of mastery a skill or content covaried in negatige direction with both the forms of this disenabling behaviour. In adolescents, goals set to escape from work were specifically found to be linked to the behavioral type of this act. In a study by Firoozi (2016), increased levels of self-handicapping were associated with both positive and negative perfectionism, as well as fear of test, which emerged as the strongest antecedent of this behaviour. The adverse impacts of it on studies were not

restricted to high school going learnres alone. Cano et al.'s (2018) work with newly admitted learners, found that when these subjects adopted an approach of indepth learning, they shunned all the mechanisms of self-sabotagging, while the surface approach to learning showed the opposite relationship. Additionally, negative course experiences were associated with greater self-handicapping in this study.

Tyler et al., (2017) reported that racist stereotyping when made part of the persona, predicted self-sabotagging in studies with the African-American secondary school boys as the subjects.Other antecedents of social origin predicting this behaviour were socio-economic status and ethenic status. Prpa (2017) demonstrated a positive covraince between self-handicapping and neuroticism and extraversion, while a negative link was observed with conscientiousness among 183 students, including athletes and non-athletes.

Chen and Kao's (2018) study uncovered a negative link between self-esteem and mastery goals with this trait, while a positive linkage was found with performance-avoidance goals. Both the forms of mentioned goals partially mediated the covariance between self-esteem and self-sabotagging.Babu and Selvamari (2018) found an inverse covariance between this trait and math achievement among teenegers in line with the findings of Košir and Šimek's (2015) study on same subjects, which also reported a negative covariance of this behaviour with overall performance in studies encompassing all schools subjects.

Kamuk, Evli, and Tecimer (2018) revealed existence of no significant difference in self-handicapping levels between men and women football referees, and this finding aligns with the study on sports management students, which also detected no significant gender-based differences in self-handicapping levels. While some studies share similarities with these results regarding gender, others present contradictory findings.

Putwain (2019) found that individuals with higher levels of self-handicapping, experienced elevated pre-exam pressure. However, despite the increased pressure, they did not exert as much effort, leading to poorer final performance compared to their counterparts. It is because, individuals with high levels of self-handicapping may exhibit hesitancy, deliberately misplace study materials, strategically abandon effort, and avoid practicing skills beforehand—all of which are associated with poor academic performance. The study with 11^{th} and 12^{th} standard students revealed that

performance in tests and exams negatively covaried with this behavior, mediated by heightened anxiety levels lowered levels of control. This trait, along with self-efficacy was found to be mediators in the linkage of Academic procrastination with negative form of perfectionism, among high school going students.

Putwain (2019) found that according to the "*self-referent executive processing (S-REF)"* model, test anxiety is caused by the interplay between maladaptive situational interactions, self-beliefs and executive self-regulation processes. To test this model, one variable from each of these three mechanisms was selected, with self-handicapping, control and emotional regulation representing them accordingly. The study found that by reducing the self-disruptive behaviour and increasing control, subjects can better deal with examination related fears.

Falconer and Djokic (2019) did not find proof of any association this trait and academic self-efficacy has with demography related variables like age, gender, race and socioeconomic status of doctoral students. The results is in contradiction with general findings of the literature in this regard and is explained by the difference in age of the terminal degree learners in comparsion to school or tertiary level students and also to the use different cognitive strategies by these specific subjects (Falconer, 2017). Achievement-goal orientation is another extensively studied variable with self-sabotagging, categorized based on stages of development into young adults and adolescents.

Self-handicapping is pervasive in classroom settings and is utilized by both bright- and poor-performing learners, leading to a failure-self-handicap-failure cycle resulting in declined effort and eventual staying away from activities (Coudevylle et al., 2020; Gupta and Geetika, 2020). Despite its prevalence, there are limited studies or tools in the literature designed to measure this variable.

Mansournia and Karimi (2020) reported a positive covariance of this behaviour with academic burnout and a negative covariance with achievement motivation. Also, locus of control, failure related fear (Chen et al., 2009) and perfectionism affected this trait in undergraduate students involving preservice teachers as one of the members

Adil et al. (2020) discovered that this variable mediated the association performance in studies has with academic psychological capital of tertiary level stduents. Higher levels of the mediating variable of this study were associated with reduced levels of the independent variable, leading to enhanced dependent variable. Alaloğlu and

Bahtiyar (2020) found a positive covariance between self-handicapping and perfectionism among university students. This relationship is consistent with the idea that perfectionism may drive individuals to create excuses if perfectionistic goals seem unattainable. Furthermore, Alaloğlu and Bahtiyar (2020) reported a negative link between self-handicapping and self-compassion, highlighting the relevance of self-compassion in self-handicapping research. Barutçu-Yıldırım and Demir (2020) identified a significant link between self-sabotagging and procrastination. This suggests that individuals who display self-handicapping, may also exhibit procrastination tendencies.

Živković (2020) investigated procrastination, a commonly reported behavior linked with academic self-handicapping. The study found that defferment is best predicted by the claimed form of this behaviour and gender among Bachelor of Education students. The research also extended to graduate students, examining academic self-handicapping behaviors in this population.

Şahin and Çoban (2020) reported that when the climate of the school is conducive for learning, the students were less vulnerable to self-sabotagging and this maladaptive behaviour also protects the individual from being called a bully. Also, bright students stayed away from this behaviour. Here, this behaviour was found to be mediator between the predictor school climate and the criterion variable of academic achievement. Similarly, for middle school students, this variable covaried negatively with school attachment (Anlı, 2019). Overall, these studies suggest that the behaviour of this trait does no change in school and tertiary level learners.

Wondra and McCrea's (2021) study unearthed proof for a negative correlation between self-sabotagging and lower socioeconomic status (SES). Lee et al., (2021) conducted a study with racially marginalized groups, and found the link between literacy achievement and self-sabotagging was contextually influenced by ethnic minority group membership, although such finding did not hold well in the case of math achievement.

Zhang et al. (2021), as mentioned in Bozkurt (2022), conducted a study to explore the how gender stereotyping with respect to mathematics subject, instances of study related burn out and self-handicapping were related to the orientation of goals pertaining to achievement among Chinese teenagers. The study's results found self-sabotagging along with performance-avoidance goals, mediated the association

between academic burnout and math gender stereotyping. This suggests that self-sabotagging plays a role in the relationship between academic burnout and gender stereotypes in the context of mathematics among Chinese adolescents. Additionally, the study implies that achievement-goal orientation, specifically performance-avoidance goals, is involved in this complex interplay.

Robinson et al., (2023) examined the antecedent factor of academic self-disruption in Afro-american students attending white university. Regression analysis found that variables like Black identity positive regard, family support, and approach/avoidance motivation were independent antecedents of self-sabotagging tendency in studies in these university students. Jagadeesan and Kanchana (2023) combined "*Rational Emotive Behavior Therapy (REBT)*" and "*Acceptance and Commitment Therapy (ACT)*" to reduce the self-disruptive behaviour in 53 university students through an experimental study and found the treatment, when administered for eight hours to be effective on the subjects of experimental groups in reducing this undesirable trait in them, statistically proven by t-test and MANCOVA techniques. Sherin (2023) found that women had more self-saboattging trait in them and higher negative evaluation tendency of the body in their mind when compared to men. This study also found dysfunctional attitudes, which make subjects cognitively prone to depression owing to their gloomy perception of self, people and the future, linked to self-sabotagging tendencies.

Cassady, Helsper and Quagliano (2024) collected proof of a Process model based interrelationships among multiple variables like academic self-handicapping, cognitive test anxiety and intolerance of uncertainity on learner outcomes. When students are not apt in handling the uncertainity, it increases their examination related fears, which further provoke them to take up self-handicapping strategy in studies, which eventually leads to lowering of the students' grades, thus the independent variables forming a serial mediation model.

2.2 SUMMARY OF REVIEWS ON SELFHANDICAPPING

Humans have a natural tendency to ascertain a cause for any event manifesting in their lives (Heider, 1958). But, when cognitively disruptive intensions house this cause forming and ascribing exercise, traits like self-handicapping emerge. Such sabotaging behaviours act as screens to protect one's self-image in the public and hide one's incompetency and deliberately stay away from addressing the real issue of not

placing enough efforts in proportion to the task (Berglas and Jones, 1978). The psychological, followed by physical repurcussions of this trait as mentioned in the literature reveal that neither of its two forms should be allowed to breed in the personality of individuals of any age group, especially the youth, which is supposed to be entering into the most productive phase of their lives personally and proefessionally (Coudevylle et al., 2023).

2.3 STUDY PERTAINING TO PERFECTIONISM AND SELFHANDICAPPING

Perfectionism in its negative sense is defined as "setting high standards for a task that often ends up unfulfilled or accomplished" (Pacht, 1984). Several studies, such as those by Burka and Yuen (1983), Solomon and Rothblum (1984), and Solomon and Rothblum (1984), have identified links between perfectionism and self-handicapping, highlighting procrastination as a strategy used to avoid less-than-perfect performance.

Defining perfectionism can be challenging due to variations in accepted definitions like that of Frost et al.'s (1990) in whose definition setting high standards and being critical self-evaluation are essential features coupled with display of a related performance-debilitating characteristic of Self-impediment. Studies, such as those by Frost et al. (1990) and Zuckerman et al. (1998), have associated self-handicapping with poor adjustment, academic underachievement, and lower achievement in non-clinical populations.Both these traits share similar features, including concerns about meeting standards, excessive worry about others' opinions, and a self-image dependent on external achievements. Hewitt and Fleet (1991) define perfectionism as "setting unrealistic standards, selective attention to failure, stringent self-evaluations, and all-or-none thinking". "*Self-Oriented Perfectionism (SOP)*", a subscale of the "*Multidimensional Perfectionism Scale*" (Hewitt and Fleet, 2004), measures personal expectations and has been linked to various psychological outcomes.

Research by Hobden and Pliner (1994) found that learners with high "*self-oriented or socially-prescribed*" forms of being flawless are more prone to show self-disruptive behaviors. Unhealthy perfectionism and self-handicapping may be particularly prevalent among gifted students. Procrastination, a common self-handicapping strategy, has been reported among college and university students, indicating a potential link between perfectionism and self-handicapping. Studies by Onwuegbuzie (2000), Solomon and Rothblum (1984), and Germeroth (1991) emphasize the role of

perfectionism in procrastination and academic barriers. Martin et al. (2003) noted that self-handicappers are prone to getting distracted distracted, whereas subjects with low self-handicapping are aware enough to stay away from them. Both perfectionism and self-handicapping negatively impact students and their academic work. These traits are likely exacerbated in evaluative situations, and academia, being highly evaluative, often intensifies perfectionistic tendencies and self-handicapping behaviors.

Competitive educational environments, where rewards hinge on achievements and performance is benchmarked against others, can foster self-protection strategies among students, as highlighted by Martin et al. (2003). The study explores the intricate link between the two discussed traits in the specific context of doctoral studies, a unique evaluative situation marked by the stress to conduct noval research and write at an exceptionally elevated level with limited support and feedback over an extended period. In such an environment of high performance, subjects under this behaviour were found to be 4.58 times more probable to display maladaptive perfectionism compared to those who are non-self-handicappers (Ali and Phiras, 2020). The study uncovered a blend of personal, surrounding and cultural factors influencing the adoption of these strategies among bright students. Consequently, the research proposed a framework that explained the interplay among these constructs and their related factors. The study also put forth various educational implications applicable to the realm of gifted education (Alodat et al., 2020).

Perfectionism is also defined as “having extremely high expectations of others or of oneself when it comes to accomplishing a certain task”. Perfectionists often hold extremely high benchmarks of efforts that are often not required for completing the task (VandenBos, 2007). The majority of works have investigated the covariance between perfectionism and self-stabotagging in academic context, particularly focusing on university-level students. Kearns et al., (2008) presented a model explaining this association within high correctness seeking college students, though not explicitly applying it to bright students. Arazzini Stewart and De George-Walker (2014) explored self-disruptive tendency as an efficiency-reducing trait that connected self-efficacy, locus of control, perfectionism and underachievement among tertiary level learners.

Stewart and George-Walker (2014) found that negative perfectionism sense was positively linked with self-sabotagging behaviour in Australian university students. Similarly, Karner-Huţuleac (2014) found a positive covariance between these two

variables in specifically 136 undergraduate psychology learners with high standards. Hobden and Pliner (1995) associated self-disruptive trait among university students with the dimensions of perfectionism, "*self-presentation*" and "*self- protection*".

Perfectionism is commonly defined as" the pursuit of perfection or the belief that perfection can be attained". Generally regarded as a positive trait, individuals often use the term "healthy perfectionism" to validate their pursuit of perfection. Agarwal and Rathore (2021) discussed the 1967 work of Brown, who differentiated being flawless from good behaviour, and emphasised that perfection is not merely giving one's best effort but is about achieving flawlessness. They concluded that both positive and negative dimensions of this trait are indicative of predicting self-sabotagging. Positive sense of this trait, however, exhibits a dual link, encompassing both a negative correlation and a positive and meaningful relationship with self-sabotagging. These findings align with established scientific perspectives and the outcomes of prior studies. Negative perfectionists, in particular, tend to uphold unrealistic expectations that impose stringent standards beyond realistic capabilities, fostering fears of disappointment and distress that may either lead to or deter from challenges. On the other hand, optimistic perfectionists, characterized by high motivation, intrinsic focus, and the ability to achieve under specific conditions that align with strict, self-imposed expectations, demonstrate a more favorable alignment with self-handicapping tendencies. Also, the same study suggested that perfectionism is often employed as a defense mechanism against guilt, judgment, and disgrace.

Both these traits were extensively studied with significant negative impacts on performance, well-being, anxiety and depression in clinical and non-clinical populations and studies on their treatments remaining limited to cognitive-behavioral coaching interventions in tertiary level students.

Perfectionists in academic settings face challenges, especially when striving to avoid being labeled as underachievers. In these situations, perfectionists may resort to self-sabotagging as a smokescreen for dismal academic performance.

Torok et al., (2022) argues that both these traits are related and partially mediated by the attributional style as is the case in the context of elite athletes. While concerns regarding perfectionism can prove to self impediments, striving for the same can be motivating.

Sudirman et al., (2023) found a same directional covariance between trying to be exact and fear of failure among subjects displaying academic procrastination. It stressed on the need to teach the learners to manage time, deal with fear and consider mistakes as elements of the process of learning. While establishing high benchmarks for self can be motivating, it is equally important to balance this vigor so as to protect both mental and physical health.

Zaiba and Akshaya (2024) investigated the role of this trait and anxiety in learners born after 1980 and after mid 1990s called as millennials and generation Z respectively. High expectations from the parents were potently related to the acquisition of the trait of perfectionism in the learners. Age of the learner was also moderately related to this trait. Anxiety was found to be linked to the self-oriented and social-prescribed types of seeking exactness trait in the chosen subjects. Both the generations' subjects slightly differed with respect to their levels of anxiety. Also, slightest amount of doubt pertaining to initiation of action was found to be linked to subjects possessing at least smaller amount of perfectionism in them.

Egan et al., (2024) studied how the famous intervention to curb perfectionism, namely, the "*Cognitive Behaviour Therapy for Perfectionism (CBT-P)*" now provided using artificial intelligence (AI) faired among the young subjects of this trait with mean age of 24 years. These subjects were privy to the use of AI in plathora of their daily life activities and were comfortable with use of the mentioned advanced technology as an intervention in the form of guidance. They viewed the new intervention to be useful in terms of cost, accessibility, stigma immunity along with several other benefits.

2.4 SUMMARY REVIEWS OF PERFECTIONISIM AND SELF HANDICAPPING

Analysis of the above literature review reveals that while perfectionism within in realistic limit can be a primer to accomplishment of many feats in life, its unrealistic benchmarks when set without much forethought can lead to harmful mental health consequences. Nature and nurture, in the form of specific personality type and parental upbringing style, along with certain environmental factors, make certain individuals prone to be maladaptively exact. They eventually fail to achieve the set standards and in order to save face end up adopting disruptive strategies of self-sabotagging, which further aggreviate the negative mental consequences associated

with such cognitive state (Niknam, Hosseinian and Yazdi, 2014).

2.5 STUDIES PERTAINING ON ATTRIBUTIONAL BELIEFS AND SELF HANDICAPPING

Attribution theory delves into the exploration of understanding the causes behind both successful and unsuccessful results. It is concerned with individuals' causal perceptions, encompassing three dimensions: "locus of causality, stability and controllability" as presented by Weiner (1979). Early studies like Wilson and Linville (1982) reported the use of attribution therapies for students in crucial life and career phases. Elliot and Dweck (1988) concluded that individuals with learning goals seek to increase their competence, emphasizing challenges as opportunities for greater competence. Such individuals respond to failure by increasing effort.

The attribution theory had its origin from the discipline of social psychology and elucidates how individuals explain the causes of events, their own behaviour, and the behaviour of others. Attribution theory identifies four pervasive causal factors for academic performance: Task ease or difficulty, ability, effort, and luck, coupled with the three mentioned dimensions. The first dimension, Locus of causality, is associated with the position of the cause within or outside an individual. Stability indicates the temporal existence of the cause in the individual's life, either for a short span or for a longer haul. Controllability concerns the extent to which an individual exerts control or influence over a factor. For instance, meeting an accident on the day of examination and hence failing to appear for it, represents a cause outside the subject, whereas watching a movie a day before a test and hence failing in it, leads to the position of the cause within the subject. Similarly, expanding of efforts by self is within one's control, whereas ability, contextual settings, or luck are less controllable by nature. From stability viewpoint, ability or contextual settings are considered more stable whreas as attributions made to effort or luck are less stable.

Sweeton and Deerrose (1995) observed that earlier research on attribution phenomenon involves three stages: discreet observation of the event, deciphering intentions, and attributing causes. Williams, Burden and Al-Baharna (2001) found that attributions for success among students learning English included practice, family support, and a positive attitude, while attributions for failure included poor teaching methods, no support from family and teachers, poor comprehension, and a negative temperament. Pintrich and Schunk (2002) emphasized that, from a motivational perspective, the accuracy of attributions is not crucial for them to have behavioural

consequences. Gibb et al. (2002) reported that learners making internal and stable ascribing for negative conequences had poor academic achievement. Thompson and Hepburn (2003) found linkages between trait causal uncertainty and claimed and ehavioural self-handicapping tendencies across 72 undergraduate students. Willam et al. (2004) identified 21 casual ascribing categories, with major causes for success indicated as effort, planning, capability, linking, activity, teacher, and contemporaries. Ommundsen (2004) observed a negative relation between success expectations, task performance, and expected self-handicapping. The majority of attributions for both success and failure were considered internal Greenlees, Jones, Holder and Thelwell (2006) explored the relations between attributions and self-handicapping, emphasizing the interconnectedness of these constructs across the social world, cognitive processes, motivational beliefs, and achievement b ehaviour.

Gobel and Mori (2007) surveyed Japanese first-year university students, revealing a link between attributions of ability, exam scores, task difficulty and luck. Cortes-Suarez and Sandiford (2008) investigated differences in attributions between passing and failing students in an algebra course, finding significant distinctions. Perry et al., (2008) explored attributional thinking for failure in a new academic setting, revealing a fixed order of causes for poor performance. Proposed attributions are often more external than internal.Graham and Williams (2009) applied Weiner's (2010) philosophy to interpret attributions as involving the search for causes leading to success or failure in academia.

Hassaskhah and Vahabi (2010) investigated attributions among children, teenagers, and adults toward success and failure in learning English, finding effort to be the most significant cause. Basturk and Yavuz (2010) surveyed high school students, exploring ascription for success and failure in the subject of mathematics. Shaukat et al. (2010) examined internal and external attributions for success and failure among postgraduate students, revealing differences between high and low performers. Cochran et al. (2010) studied causal attributions for success, attitude, and aptitude in learning a foreign language, finding gender differences in effort attributions. Stewart et al. (2011) explored the efficacy of attributional retraining to reduce course failure in freshmen, finding it effective in replacing lack of ability and bad luck attributions.

Gordeeva and Osin (2011) found that good events related optimistic attributional style was linked with higher academic performance. Gargari et al. (2011) examined the relationship between academic procrastination and causal attribution, finding a

negative correlation between procrastination and causal description for success. Pishghadam and Motakef (2012) surveyed Iranian students, revealing differences in attributions between mathematics and science students and humanities students. Park and Brown (2014) research on 252 workers in South Korea. The subjects were divided into two groups of either being a handicap or a member of the control group, with either victory or setback as the outcome. Subjects gave their responses with respect to the casual attributions beliefs either being capability, effort, luck or other factors, their desire to mingle with people and cooperate with either the selfhandicaps or control group members. Findings revealed that workers in general rated poorly for the former than the latter group members.

Eyink et al., (2017) found that subjects indulge in the display of self-sabotagging behaviour when they are mentally fully replenished instead of in times with depleted energy levels. Since it is a strategic behaviour, the subject must guage the audience well to camaflouge the incompetence in public yet managing to internalize achievement. Miscalibration of the audience and the surrounding can prove to be counter-productive. Otherwise, it is an effective self-defense strategy with certain surprising rewards to offer.

Shin and park (2018) investigated how effectively this tendency can create an outer image of competency in public, with workers as the population, replicating and extending Ganda and Boruchovitch (2021) found that student teachers, who attributed their poor performance to causes residing within them and success to external attributors, communicated experiencing of self-debilitating tendency often. Wyse, Machado, Frare (2023) concluded in their study that self- sabotagging is covariant with elevated levels of anxiety, stress, depression, and procrastination in corporate environment though.

2.6 SUMMARY REVIEWS OF ATTRIBUTIONAL BELEIFS AND SELF-HANDICAPPING

The above body of previous works on attributional beleifs drive home the main point that individuals should always self reflectively ascribe the reasons for the situations in their lives. Blaming others or pointing towards external factors as the cause, display of lack of will to address the reality at hand and assuming the challenge to remain for good, are reflections of shortcomings in one's personality and beyond a critical point compels the individual to take up disruptive strategies, like handicapping the self through pretexts, as a means to save face and the self-esteem. The rewards of such

strategies are limited but very devastating in the longer run (Uchida, 2004). Finally, self-handicapping can be perceived as a technique of attribution that stops an individual from assigning causes to his or her failures rooted in personal abilities (Jhangiani and Tarry, 2022).

2.7 STUDIES PERTAINING TO LEARNING ENVIRONMENT AND SELF-HANDICAPPING

The term "Learning Environment" encompasses the diverse elements and activities within which learning occurs, traditionally classified into two dominant forms: the physical and the socio-cultural. There are four key aspects of an optimum learning environment, categorized as "Learner-Centered, Knowledge-Centered, Assessment-Centered, and Community-Centered". Huebner (1989) suggests that understanding and predicting student ehaviour is best achieved through examining the interactions between individuals and their environment. Covington (1992) further divides the campus environment into four dimensions: "*physical component, organizational measure, social climate, and human aggregate*". Covington's (1992) contribution is significant in explaining educational self-handicapping. His theory of self-worth posits that students' primary goal is to continue with a b ehavioural image of self in front of others and avoid being ehaviou as either timid or unintelligent. This can imply application of self-sabotagging strategies in studies as a means of avoiding responsibility for their performance.

Deppe and Harackiewicz (1996) argue that ceasing self-sabotagging can alleviate task pressure and improve individual performance. Research consistently shows that this trait is negatively correlated with performance, self-regulated learning, and stable internal motivations. Greaven, Santor, Tompson and Zuroff (2000) found a positive correlation between it and age in girls. Maternal care was shown to modulate the relationship between it and restlessness in boys, according to their research. Dorman et al. (2002) associated classroom climate with an element of emotion handling possess lesser levels of self- handicapping. Overall, the school climate appears to play a critical role in shaping students' tendencies toward self-handicapping behaviors.

Scott, Shannon, and Curoline (2004) demonstrated that learners highly satisfied with the quality of life they are leading, perform better in their homework and ascribe their success to personal abilities rather than external factors or fluke. Shokrkon et al. (2005) linked low self-efficacy and self-esteem to self-sabotagging, as individuals lacking confidence in their abilities often seek justification for their failures through

self-handicapping strategies. Fleming et al, (2005) emphasized the significant role of the collegiate or classroom environment in shaping students' transitions and opinions.

Long-term self-handicapping is associated with deteriorating mental well-being, spoilt mood, and use of substances. Zuckerman and Tsai (2005) explored the relationship of self-sabottaging with compatibility and psychological well-being, indicating that it predicts denial, blaming self and others, sleep-related complaints and depression. It not only contributes to uncertainty about personal abilities but may also lead to anomalies and poor psychological well-being. Various studies by behavioural scientists, psychologists, and sociologists, such as Speller (2006), revealed that the surrounding can both promote and stifle actions and emotions of individuals. Consequently, student actions are moulded by the multi-faceted campus environment, and vice versa (Strange and Banning, 2001).

Skaalvik and Skaalvik (2006) found that the classroom environment significantly influences high school students' self-esteem, with poorly adapted task assignments leading to ego-based tendencies and disruptive behaviors. An ego-oriented climate of the school was identified as a positive antecedent of self-sabotagging in a study by Standage et al. (2007). Lent, Sheu, and Singley (2009) demonstrated that environmental support predicts progress in goals, academic adjustment, and life satisfaction in the future. Baeten et al., (2010) explored learning environments and student-based consistent engagement, emphasizing situation-specific contextual factors, perceived contextual elements, and the student's focus. Lee and Shute (2010) observed the impact of ehavioural, cognitive, affective, and metacognitive factors on personal factors shaping student engagement, learning attitudes, and strategies.

The study highlighted the dual influence of personal and social cognitive factors on academic outcomes and performance. Coudevylle et al. (2011) emphasized self-handicapping's focus on self-regulation and satisfaction, noting that hard work and other forms of self-regulation enhance learning ability. However, long-term use of self-handicapping strategies may lead to dissatisfaction and reduced psychological well-being. Schwinger and Stiensmeier-Pelster (2011) discussed the manifestation of self-handicapping in various behaviors, including substance abuse, weak effort, unattainable goals, and dismal performance. Recent research in educational environments indicated that some students knowingly engage in self-handicapping strategies, negatively impacting academic performance and intrinsic motivation. Byrgany et al., (2011) highlighted self-handicapping as a prevalent issue,

acknowledging its short-term boost to self-esteem but emphasizing the long-term costs, including less psychological well-being, self-efficacy, motivation, spoilt mood, and increased drug abuse.

Barzegar and Khezri (2012) and Gadbois and Sturgeon (2011) suggested schools as suitable environments for the emergence of the handicapping behaviour in learners, attributing it to the constant evaluation of their abilities and intelligence. Academic self-handicapping was identified as a strategy used to cope with weak performance in homework. Also, it was hypothesized that a decline in teacher support and lower expectations, coupled with an emphasis on performance goals, could increase disruptive ehaviour as a form of self-handicapping. The importance of a positive classroom environment with high academic expectations and supportive teacher-student relationships was emphasized.

The prevalence of social comparison in students' performance and achievements was observed to safeguard self-identity and promote self-protectionism. Contexts and situational factors affecting student engagement in learning environments have been a subject of intense debate and analysis. Student engagement and its context are interpreted as shaping beliefs, attributions, motivations, self-esteem, and the tendency to engage in non-performance and external excuse-making behaviors. Sağlam and Sali (2013) investigated pre-service EFL teachers' perceptions of various characteristics of foreign language learning environments. Most participants highlighted "language teaching resources" and "teaching strategies and approaches" as essential components, suggesting the need for awareness-raising exercises to enhance their understanding of a productive learning environment.

In the study conducted by Shahab, Nordin, and Zubair (2015), the focus was on validating the model of antecedents of self-sabotagging ehaviour. The research interpreted the phenomenon by examining the linkages exhibited within the POASH ("*Predictors of Academic Self-Handicapping"*) model of engagement. The POASH model aims to understand the factors influencing self-handicapping behaviors in students. The study suggests that this maladaptive strategy is closely related to the patterns and scale of student engagement across various learning environments within educational institutions. The findings highlight the intricate connections between engagement and self-handicapping behaviors, shedding light on the factors that contribute to or influence such behaviors in the academic context.

The majority of current tertiary level college or university learners, often classified as "*Generation Z learners"* born after 1995, are characterized as digital natives, quick decision-makers, and highly networked individuals Dauksevicuite (2016). Recognizing the distinctive features of these learners is crucial for educators, as failure to do so might result in classroom teaching methods that are not relevant to their needs.

Cleland et al., (2018) delved into the traits of university learners and found that they expect a teaching environment where interaction mirrors their virtual worlds. Moving beyond traditional teaching methods to capture the interest, imagination and understanding of Generation Z students poses a challenge. It is essential to figure out the components of technology and social networking that can engage learners in the teaching and learning process. Shin and Park (2018) revealed learners who implemented the potent strategies of self-regulated learning in the context of social media usage and networking, were less prone to be under the harmful effects of self-sabottaging tendency, which is otherwise the case in the absence of these strategies. The study underscores the positive moderating effect self-regulated learning strategies can play in the productive usage of social media in learning without falling under the undesirable consequences of self-disruptive behaviours.

Additionally, Sertel and Tanrıöğen (2019) reported that this behaviour is less prevalent among school staffs dwelling in a vibrant school climate. Conversely, self-sabotagging behaviors is more frequent in schools where stress is given to competition and success over and above other aspects of learning. Şahin and Çoban (2020) found the probability of using self-handicapping strategies decreases in a positive school environment where teachers' b ehaviour is guided by the will to create a safe environment and where students can achieve success. The focus of the current study was in the mathematics classroom. However, it should be emphasized that affective-motivational aspects have been considered by several researchers as essential tools to develop an enabling learning environment (Eccius-Wellmann and Ibarra-Gonzalez, 2020). In the specific case of mathematics, a discipline that many fear, the role that affectivity plays in the teacher-student relationship may be even more important to help moderate the application of self-handicapping as a performance disabling strategy. Valtonen et al., (2021) studied the factors can comprise in a best learning environment as per the perceptions of students and found that they desired to see quality pedagogy, state of the art infrastructure, campus

characteristics, flexibility in learning chances and use of ICT in teaching and learning. Availability of teachers, an informal learning environment, ICT service and support and online learning facility emerged as some of the stressed aspects of preferred learning environment by students of tertiary level in this study.

Closs, Mahat and Imms (2022) studied the role of psychosocial, physical and teaching related factors of learning environment on the student learning experiences in Australian context using a mixed research method. The study provided deeper insights into the mechanism through which the mentioned dimensions of learning environment merge and impact the students' perception of learning experiences in various learning environments. Rusticus, Pashootan and Mah (2023) conducted a qualitative study to find the factors that promote and hinder student learning within learning environments from the prespective of the taught and the teacher. The study recruited 22 students and 9 university level teachers and through focus-group and interview techniques found themes which could be broadly categorized under three main dimensions of the culture of the institution, relationships and personal development. In the context of STEM education, Fairhurst, Koul and Sheffield (2023) addressed the factors responsible for promotion of STEM learning environment from the perspective of the learners using a mixed research method and found them to be helping nature among friends, a sense of freedom, time, communication and problem solving techniques.

2.8 SUMMARY REVIEWS OF LEARNING ENVIRONMENT AND SELF-HANDICAPPING

Probably the most influentional environment related variable, to very deeply affect the learner, is the surrounding or the climate of his or her learning. Reviewing of the existing knowledge reveals the multi-facted impact this variable can make on the subjects and how deteriotion of any of the elements making up the learning environment, like negativity towards the staff, poor infrastructure or following of outdated teaching methodologies can rise the probability of taking up self-sabotagging strategies to put a fake and bold picture of academic performance by the students, without actually learning anything concrete from the institution (Boruchovitch et al., 2022; Gupta and Geetika, 2020).

2.9 CONCEPTUAL FRAMEWORK OF THE STUDY

In light of the literature review conducted in the above sections of the thesis, the below mentioned interrelationship between the research variables is conceived and proposed as the conceptual framework of this work.

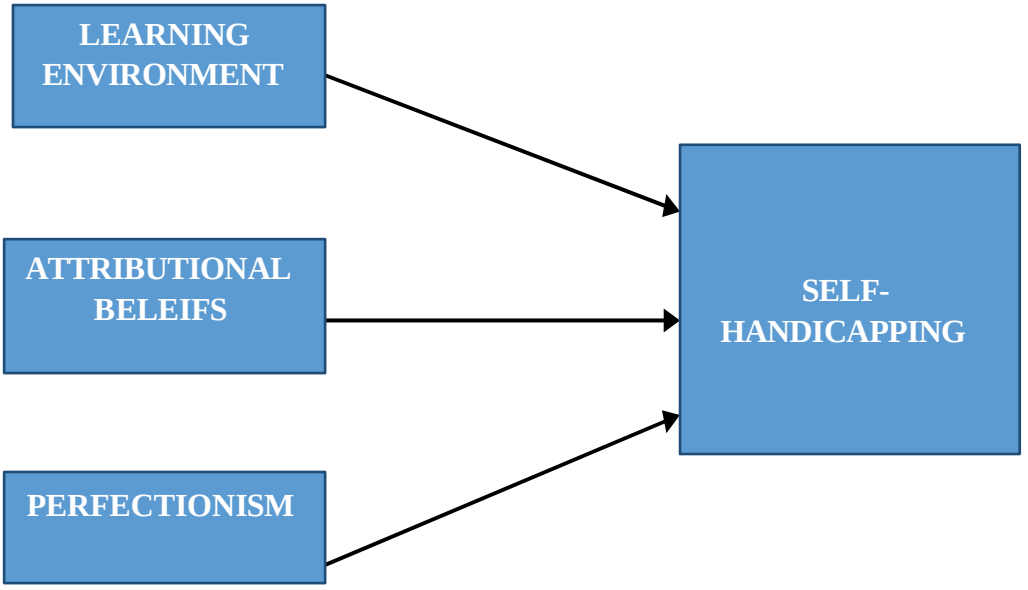

Fig 2.1 Conceptual Model (Dependent variable: Self-handicapping tendency & Independent variables (Attribution beliefs, Learning environment and Perfectionism).

Conclusion

The above enterprise of exploring the relationships between the research variables as per the edfice of knowledge, paves way towards the establishment of the proposed farmwork of this study on empirical grounds. For achieving the same, data will be collected from three regions of the Punjab state, whose technicalities will be further presented in the upcoming Chapter 3 Research Methodology.

CHAPTER - III

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology represents the entire gamut of enterprise placed by the investigator in order to gather data for empirically proving the research objectives. After selection, definition and delimitation of the problems, the next step is now to collect relevant data, sufficient in quantity and quality. By method we approach a systematic approach towards a particular phenomenon. In research there are number of methods and procedures to be applied such as experimental method, historical method and descriptive survey method etc. Out of these methods, the investigators selected descriptive survey method which is most appropriate for the present study

3.2 RESEARCH DESIGN

Research Design is the plan, structure, and strategy of an investigation designed to obtain answers to research questions and control variance (Kerlinger, 1973). It provides information on "how" to conduct research using a particular methodology. Every researcher has a list of research questions that need to be assessed. This can be done using a research design. An effective research design usually creates minimal data bias and increases confidence in the research information collected and ehaviou. It helps the researcher in hypothesis testing by drawing valid and reliable conclusions about the relationship between the independent and dependent variables. After conducting a detailed literature review of the research problem, the next step to progress is to plan or design the research study (Creswell, 2016). A research design is a plan for how the researcher would collect, ehavio, and interpret data on the variables in the study. In social science research, the collected data related to the research problem provide evidence for the correct determination of the phenomenon under study. The research problem decides the type of design to be adopted (De Vaus, 2001, William, 2006).

There are three types of research design studies. They are mainly qualitative, quantitative and mixed research studies.

According to Morse (1991), the problem of qualitative research is conceived with an exploratory perspective, which aims to study concepts that are still “immature” and where there is a lack of theory to support it, a lack of research literature to guide the theory is either biased or inaccurate or the phenomena under investigation they do not meet the conditions for quantitative analysis.

Quantitative research is conducted to determine the factors responsible for the apparent existence of a phenomenon as well as to advance the testing of a theory whose research questions rest on a detailed literature review.

Whenever a topic of interest involves the study of underlying factors as well as their further investigation, a combination of qualitative and quantitative approaches, called a mixed method, is used.

The paramount importance of research design lies in conducting any research in a scientific manner. It ensures neutrality, reliability and validity of generalizations. Research design provides the glue that binds the entire research project together. The purpose of applying the adopted research design is to make the research work more structured and to analyse how the different components of the research such as sample, treatment, methods will help in solving the given research problem. Although there are a number of research designs, a descriptive survey method was used to collect information from the respondents. This method is useful in studying existing trends and phenomena and establishing cause and effect relationships between variables. Research involves collecting data to test hypotheses or answer questions regarding the current status of different groups on selected variables of the study, so a cross-sectional design was used to compare different groups of the population at one point in time and also help in studying the association between different variables.

3.3 POPULATION

The term population in research is used in broader sense than its common place meaning as population of people. The active group from which the sample has been taken is called population. The group may consist of persons, objects, attributes, qualities and behaviors of the people. According to the nature and scope of the research in hand a population should be well defined in terms of geographical limits, age grade, sex, category socio economic status, physical attribute and psycho social ehaviour.

Population in the proposed study comprises of Higher education Students studying in bachelor program of different streams (Science, Arts and Commerce) in the colleges of Punjab. This is owing to the rationale that according to the Ministry of Education (2020) report as cited in Varghese and Sabharwal (2022), 79.5 percent students enrolled in higher education in this country belong to the under-graduate stage. Also, according to AISHE report 2021-22, 56.4% universities and 60.1 % colleges in India offer the general courses as specialization compared to other professional and technical specializations (pg7, AISHE report, 2021-22). Owing to the quantitative superiority of this specialization in higher education, students pursuing such specialization in the state of Punjab were considered as the population of this study.

Distributions of districts, colleges and universities are discussed in the following Table:

Table 3.1 Distribution of the Districts of Punjab

S. No.	Majha	Doaba	Malwa
1	Amritsar	Jalandhar	Bathinda
2	Tarantaran sahib	Kapurthala	Ferozpur
3	Pathankot	Hoshiarpur	Moga
4	Gurdaspur	RoopNagar	Ludhiana
5		Nawan shehr	Barnala
6			Fridkot
7			Mansa
8			Fatehgarh Sahib
9			Patiala
10			Muktsar
11			Fazilika
12			Mohali
13			Sangrur

Table 3.2 Distribution of the Universities in Punjab

Types of Universities in Punjab	Number
State public Universities	14
Central University	1
Private Universities	18
Deemed University	2
Total Universities	35

The details of the universities can be accessed from the source link provided below:

Source:https://www.ugc.gov.in/universitydetails/university?type=0wBmFB1Rb4JGVzq9UP/iOg==

Out of the 35 universities mentioned above, 15 universities offer professional courses and hence were removed from the sampling design. From the remaining 20 universities offering general specialization courses like bachelors in science, commerce and arts, 16 institutions have single campuses and the remaining 4 institutions have multiple campuses and affliliated colleges as well. The details of these institutions are provided below:

Table 3.2.1 Distribution of Universities in Punjab Offering Bachelors in Science / Commerce / Arts Courses

S.No.	Name of the University	District	Campus
	Akal University	Bhathinda	Single
	Amity University	Mohali	Single
	Chandigarh University	Mohali	Single
	Chitkara University	Patiala	Single
	C.T. University	Ludhiana	Single
	D.A.V. University	Jalandhar	Single
	Desh Bhagat University	Fatehgarh Sahib	Single
	GNA University	Kapurthala	Single
	Lamrin Tech Skill	S.B.S. Nagar	Single

	University		
10	Lovely Professional University	Kapurthala	Single
11	Rayat Bahara University	Mohali	Single
12	RIMT University	Mohali	Single
13	Sant Baba Bhag Singh University	Jalandhar	Single
14	Sardar Beant Singh State University	Gurdaspur	Single
15	Shahed Bhagat Singh State University	Firozpur	Single
16	Sri Guru Granth Sahib World University	Fatehgarh Sahib	Single
17	Guru Nanak Dev University	Amritsar	Multiple
18	I.K. Gujral Punjab Technical University	Kapurthala	Multiple
19	Maharaja Ranjit Singh Punjab Technical University	Bathinda	Multiple
20	Punjabi University	Patiala	Multiple

The details of the affiliated and autonomous colleges to Guru Nanak Dev University, Amritsar and Punjabi University, Patiala can be accessed from the source link provided below:

Source: https://nrcb.ugc.ac.in/pdf/NRCBcolleges_list.pdf

Similarly, the details of the affiliated and autonomous colleges to I.K. Gujral Punjab Technical University and Maharaja Ranjit Singh Punjab Technical University, Bathinda can be accessed from the source links provided below respectively:

Source: https://admissions.ptu.ac.in/Courses-Offered-Affiliate-Autonomous- Colleges.aspx

Source: https://mrsptu.ac.in/cdc/colleges/Affiliated_Colleges_2022-23.pdf

Table 3.3 Distribution of the Colleges in Punjab

S.No..	University of Affliation	Total Number Of Colleges Offering Bachelor of Science, Commerce and Art Courses
1	Guru Nanak Dev University, Amritsar	67
2	Punjabi University, Patiala	44
3	I.K. Gujral Punjab Technical University, Kapurthala	78
4	Maharaja Ranjit Singh Punjab Technical University, Bathinda	23
	Total Colleges	212

Hence the total number of institutions offering the Bachelor of science, arts and commerce courses in Punjab state are 228.

3.4 SAMPLE SIZE ESTIMATION – POWER ANALYSIS

In order to estimate the minimum sample size required for conducting the multiple regression analysis, the free online calculator offered by danielsopher.com was used (Soper, 2020). The inputs to be provided for the estimation of sample size to the calculator are the expected effect size, desired power, number of predictors involved in the study and the level of significance.

In the present study, the effect size was assumed to be moderate at 0.15. The desired power chosen was 0.9, since any value above the benchmark of 0.8 represents high power. The total number of predictors in the model are four, involving Learning environment, Perfectionism, Causal attributional beliefs – Locus of Causality and Causal attributional beliefs – External control. The level of significance of the study was $\alpha = 0.05$. For these mentioned inputs, the online calculator returned a minimum sample size of 108.

3.5 SAMPLING FRAME

The sampling frame of the proposed study comprised of six higher education universities and colleges, from which the data was ultimately collected, well over and above the estimated minimum sample size through power analysis. These institutions offered courses in three different streams, namely Science, Arts and Commerce at undergraduate level and belonged from all the three regions of Punjab. Their selection was done randomly using Microsoft Excel worksheet. Intitially, a worksheet containing the list of 16 universities and 212 colleges was prepared. Following the Law of Statistical regularity, Central limit theorem and 10 percent rule of statistical sampling, a separate list comprising the names of 1.6 (rounded off to 2) universities and 21.2 colleges (rounded off to 21), which made up the 10 percent of these institutions respectively were prepared. From these list of 2 universities and 21 colleges, the final list of 1 university and 5 colleges were finalized using the random number generator command =RANDBETWEEN(1:2) and =RANDBETWEEN(1:21) in Microsoft Excel When sampling in done without replacement, the exercise of 10 percent rule (Berry and Lindgren, 1990), ensures a sufficient large sample size and randomness in sampling, with the sample characteristics approximately representing the population parameters. The details of the six institutions are shown below:

Table 3.4 Details of the Final Instituitions Visited for Data Collection

S.No.	Name of the Institution	Type	Location	Region
1	D.A.V. College	College	Amritsar	Majha
2	GuruNanak National College	College	Ludhiana	Malwa
3	Govt. College	College	Hoshiarpur	Doaba
4	Lovely Professional University	University	Jalandhar	Doaba
5	Malwa College	College	Samrala	Malwa
6	Sanatan Dharam College	College	Hoshiarpur	Doaba

3.6 SAMPLING TECHNIQUE

Stratified random sampling technique, under probability sampling was adopted in the research study for the selection of the sample subjects. The rationale towards the selection of this sampling technique is due to the presence of several heterogeneous stratas into which the population can be divided. These stratas are spread across the vast geographically three regions of the Punjab state (i.e. Majha, Malwa and Doaba region) as mentioned below:

- Type of the educational institution – University / College
- Stream of Study – B.Sc. / B.A / B.Com.
- Year of Study – Ist / IInd / IIIrd
- Gender – Boys / Girls

All the subjects are the students of general specialization courses like sciences, arts and commerce, thus representing the homogeneous stratum level of the sampling technique. The figure 3.1 represents the stratification of the population diagrammatically below:

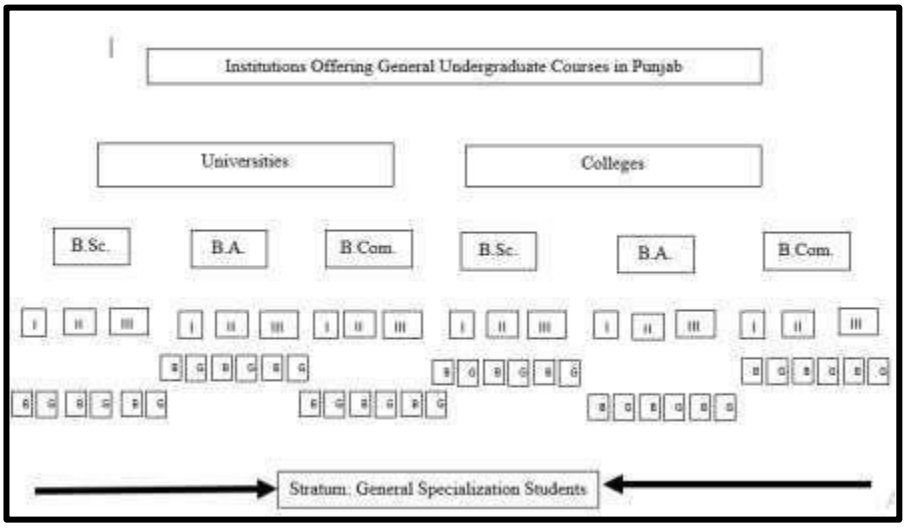

Fig. 3.1 Stratified Random Sampling

3.7 SAMPLING PROCEDURE:

Prior permission was taken from the heads of the six instituitions for allowing the researcher to gather data from the students during regular classroom sessions.

Investigator personally visited six instituitions for getting the questionnaires filled. Kind cooperation was sought and received from the faculty members present in the classroom for helping in the data collection exercise. The students were informed with

the purpose of the visit and assurance were given to them with regard to the confidentiality of the data and its usage strictly for research purpose. They were given clear instructions on how to fill the questionnaires and voluntary participation but with sincerity in filling the data were sought from them. Thus, in total 600 respondents filled the tools booklets on SelfHandicapping Tendency, Causal Dimensional scale, College university environmental scale and the Big Three Perfectionism scale. They took one hour and 30 minutes on average to fill the questionnaires, which were returned back to the investigator. After data screening, the incomplete forms, along with the forms in which extreme and or mean scores were found for all the items, were removed, treating them as outliers, which were accounted as 44 in number.

3.8 SAMPLE SUBJECTS

The final data from the sample subjects, considered for data analysis was of size 556. The region wise, gender-wise and program wise distribution of the sample is presented in table below:

Table 3.5 Descriptive Analysis of Demographic Variables

DESCRIPTIVE ANALYSIS OF DEMOGRAPHICAL VARIABLES		
Gender		
	Count	**Percent**
Male	282	50.72
Female	274	49.28
Total	556	100
Region		
	Count	**Percent**
Doaba	190	34.17
Malwa	182	32.73
Majha	184	33.09
Total	556	100
Stream		
	Count	**Percent**
Science	247	44.42
Arts	126	22.66

Commerce	183	32.91
Total	556	100

This table shows that there were total male respondents were 282 and female respondents were 274 out of 556 respondents. In the region wise,there were 190 respondents from Doaba region ,182 from Malwa region and 184 respondents from Majha region. There were 247 respondents from science stream,126 respondents from Arts stream and 183 respondents from commerce stream out of total 556 respondents.

Table 3.6 Break-up of the Sample Data as Collected from the Six Institutions

S.No.	Name of the Institution (Region)	Stream	Year			Gender		Total
			Ist	IInd	IIIrd	Male	Female	
1	D.A.V. College, Amritsar (Majha)	B.Sc.	25	28	6	29	30	59
		B.Com.	0	0	60	35	25	60
		B.A.	47	0	18	33	32	65
					Total			**184**
2	GuruNanak National College, Ludhiana (Malwa)	B.Sc.	23	0	6	16	13	29
		B.Com.	21	18	24	30	33	63
		B.A.	1	7	7	0	15	15
					Total			**107**
3	Govt. College, Hoshiarpur (Doaba)	B.Sc.	51	67	0	55	63	118
		B.Com.	0	0	0	0	0	0
		B.A.	0	0	0	0	0	0
					Total			**118**
4	Lovely Professional University, Jalandhar (Doaba)	B.Sc.	0	12	0	12	0	12
		B.Com.	0	0	0	0	0	0
		B.A.	0	0	0	0	0	0

	Total							**12**
5	Malwa College, Samrala (Malwa)	B.Sc.	22	1	6	14	15	29
		B.Com.	0	0	0	0	0	0
		B.A.	0	32	14	32	14	46
	Total							**75**
6	Sanathan Dharam College, Hoshiarpur (Doaba)	B.Sc.	0	0	0	0	0	0
		B.Com.	0	0	60	26	34	60
		B.A.	0	0	0	0	0	0
	Total							**60**
7	**Grand Total Sample Size: 184+107+118+12+75+60 =**							**556**

3.9 DETAILS OF THE TOOLS USED IN THE RESEARCH STUDY:

The details of the four tools used to quantitatively measure all the variables of the study are mentioned below:

Table 3.7 Tools Descriptions Dimensions wise the following tools were used in the present research study detailed of which are given below

TOOL NAME	AUTHORS	DIMENSIONS	ITEMS
Self-Handicapping Tool (2022)	Mandeep Kaur & Dr. Navdeep Singh Raji	TWO DIMENSIONS 1. Behavioral & 2. Claimed	12 ITEMS
The Revised Causal Dimension Scale" (CDSII) – (2023)	Dr. Jyoti Gupta & Dr. Vijay Kumar;	FOUR DIMENSIONS 1. Locus of Causality 2. External controllability 3.Stability 4.Personal controllability	12 Items
The Big Three Perfectionism Scale (2016)	Martin M Smith	THREE DIMENSIONS Dim 1. Rigid Perfectionism consists of two facets: 1.Self-oriented perfectionism (SOP; 5 items) 2. Self-worth contingencies (SWC; 5 items) Dim 2. "Self-critical Perfectionism consists of four facets: 3.Concern over mistakes (COM;5 items) 4.Doubts about action (DAA; 5 items) 5.Self-criticism (SC; 4 items): 6.Socially-prescribed perfectionism (SPP; 4	45 ITEMS

		items)" Dim 3. Narcissistic Perfectionism consists of four facets: 7.Other-oriented perfectionism (OOP; 5 items) 8. Hypercriticism (HC; 4 items) 9. Entitlement (ENT: 4 Items) 10. Grandiosity(GRAN:4 Items)	
College / University Environment Scale (1997)	Dianne Lynn Williams	SIXTEEN DIMENSIONS with 7 Items under each dimension 1. Financial 2. Physical Procedure 3. Organization 4. Teaching Facilitation 5. Technical 6. Professor‟ s Evaluation 7. Student Evaluation 8. Curriculum Evaluation 9. Learning style 10. Effectiveness 11. Social academic support 12. Influence 13. Social Recreational 14. Scholarly 15. Job / Career	112 items

3.10 PSYCHOMETRIC PROPERTIES AND VALIDATION OF RESEARCH TOOLS

3.10.1 Psychometric Properties of Self-Handicapping Tool

The researcher constructed the tool to measure the construct self-handicapping, following a deductive approach. Here, a comprehensive literature review was conducted to understand the construct on its entirety. The exercise led to theoretical extraction of two factors, namely, claimed self-handicapping and behavioural self–handicapping. Based on the initial understanding, a pool of 37 items was constructed and the instrument‟ s face and content validity was established by showing the items to six experts of the field. Items less than 0.75 content rating, were removed from further analysis.

In the next stage of tool construction, the retained items were administered on a sample of 600 college students of Punjab comprising equal number of male and female students during the pilot study. The responses of the subjects were collected using a five point Likert scale with “Strongly Disagree = 0, Disagree = 1, Not Sure = 2, Agree = 3 and Strongly Agree = 4. The data collection was followed by item analysis procedure where the scores of self-handicapping of 600 undergraduate students were arranged in descending order and the discrimination index of the items was calculated by applying t-test on the mean self-handicapping estimate of subjects from upper and lower 27% groups of the sample subjects. All items were found to possess discrimination index greater than 1.99 and hence were retained.

3.10.2 Extraction of Factors of Self-Handicapping Construct – Exploratory Factor Analysis (EFA)

For statistically extracting the factors of self-handicapping construct, the data was subjected to exploratory factor analysis using SPSS Statistics software Ver. 22. All 37 items were subjected to the extraction technique of Principal Component Analysis (PCA) using the rotation method of “Direct Oblimin”. Multiple iterations of the factor analysis technique were conducted with items having communality value less than 0.4 removed. This approach caused the removal of 25 items and retaining of 12 items. The sample size for the exercise of factor extraction was sufficient since the Keiser Meyer Olkin (KMO) sampling adequacy estimand has an estimate of 0.829, which is above the benchmark value of 0.6 (Tabachnick and Fidell, 1996). The Barlett‟s test of

sphericity was found to be significant indicating that the correlation matrix is not an identity matrix and relationships existed between the items, leading to the formation of factors. Through Keiser‟s criterion, two factors were extracted from the data, which explained 48.772% of variance in the construct.

Table 3.8 Total Variance Explained (TVE) Estimation

“Total Variance Explained”									
Component	“Initial Eigenvalues”			“Extraction Sums of Squared Loadings”			“Rotation Sums of Squared Loadings”		
	“Total”	“% of Variance”	“Cumulative %”	“Total”	“% of Variance”	“Cumulative %”	“Total”	“% of Variance”	“Cumulative %”
1	3.993	33.278	33.278	3.993	33.278	33.278	3.661	30.512	30.512
2	1.859	15.495	48.772	1.859	15.495	48.772	2.191	18.260	48.772
3	.957	7.976	56.749						
4	.841	7.006	63.755						
5	.805	6.707	70.462						
6	.669	5.579	76.040						
7	.662	5.517	81.557						
8	.550	4.587	86.144						
9	.489	4.077	90.222						
10	.442	3.685	93.907						
11	.370	3.083	96.989						
12	.361	3.011	100.000						
Extraction Method: Principal Component Analysis.									

Table 3.7: Factor loading of the Extracted two factors of Self-Handicapping Scale

Rotated Component Matrix[a]		
	Component	
	1	2
SH1		.748
SH2		.682
SH4	.746	
SH5	.705	
SH6	.718	
SH9		.549
SH12	.649	
SH19		.650
SH20		.594
SH22	.714	
SH23	.733	
SH24	.658	

While items 1, 2, 9, 19 and 20 formed the factor 2 – "Behavioural self-handicapping", the items 4, 5, 6, 12, 22, 23 and 24 of the original item pool formed the factor 1 – "Claimed self-handicapping" as per Berglas and Jones (1978) theory of self-handicapping. As seen from the above table, the factor loadings of the retained 12 items are quite high indicating apt representation of their respective factors. The Cronbach‟ s alpha internal consistency reliability was found to be acceptable at 0.779 which is more than the benchmark value of 0.60 (Kline, 1999).

3.10.3 Construct Validity Estimation of Self-Handicapping Tool – Confirmatory Factor Analysis (CFA)

The confirmatory factor analysis technique was conducted using the software SPSS AMOS Ver. 22.0. Fig.3. 1 shows the factor structure of self-handicapping to be validated.

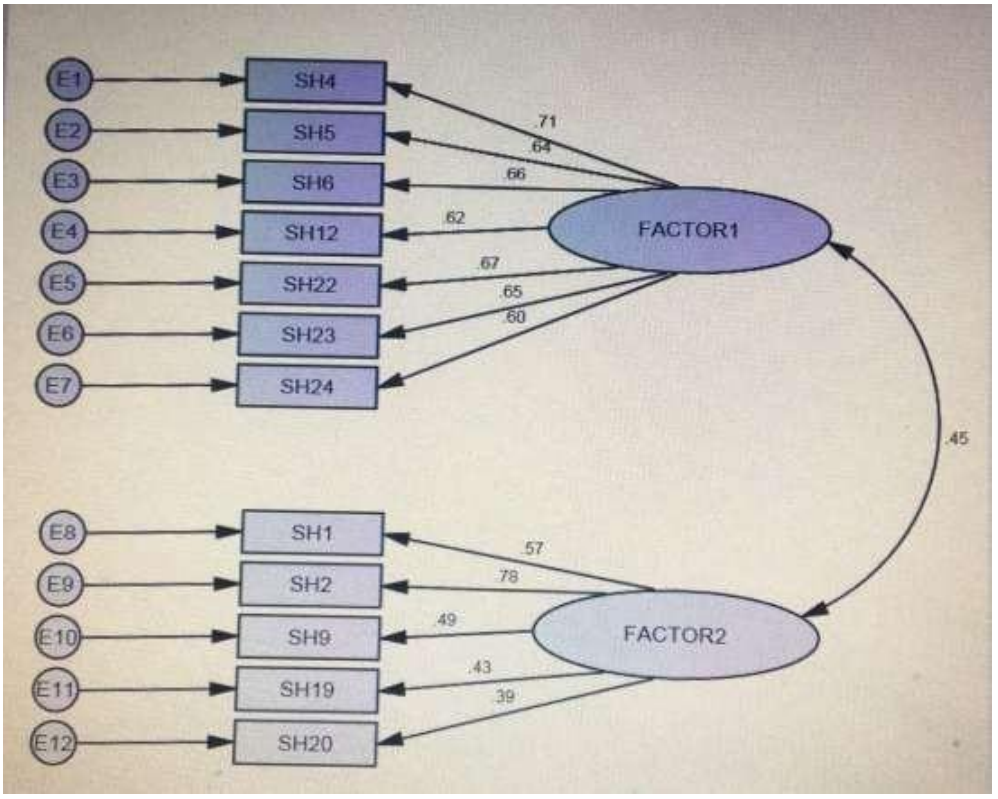

Fig 3.2: Path Diagram of Self-Handicapping Scale

Table 3.8: Standardized Regression Weights

	Estimate
SH24 ←- FACTOR1	.60
SH23 ←- FACTOR1	.65
SH22 ←- FACTOR1	.67
SH12 ←- FACTOR1	.62
SH6 ←- FACTOR1	.66
SH5 ←- FACTOR1	.64
SH4 ←- FACTOR1	.71
SH20 ←- FACTOR2	.39
SH19 ←- FACTOR2	.43
SH9 ←- FACTOR2	.49
SH2 ←- FACTOR2	.78
SH1 ←- FACTOR2	.57

Factor 1 here represents Claimed Self-Handicapping and Factor 2 represents Behavioural Self-Handicapping. Both the factors are related moderately with the loadings between them at 0.45. Except item 20, the factor loadings of all the items are moderately strongly associated with their respective factors. The goodness of fit estimates of the hypothesized factor structure is obtained were CMIN/Df = 5.80, Comparative fit index (CFI) = 0.860, Tucker-Lewis Index = 0.83 and Root mean square error of approximation (RMSEA) = 0.09. The CMIN/Df estimand is greater than its benchmark of 3, but can be ignored since it is sensitive to large sample sizes. Also, the root mean square error of approximation‟ s (RMSEA) estimate is above the benchmark of 0.08 at 0.09, which indicate the model to have reasonable error of approximation (Browne and Cudeck, 1993). However, the comparative fit index and Tucker-Lewis Index estimates are close to its respective benchmark of 0.9 indicating moderate fit of the hypothesized factor structure with the empirical data. In light of the above obtained psychometric results, the self-handicapping tool was considered to be the means to gather quantitative data of this construct in Indian undergraduate students.

3.10.4 Psychometric Properties of Attributional Beliefs

For measuring the attributional beliefs of the undergraduate students, the Revised Causal Dimension Scale" (CDSII) originally developed by McAuley et al. (1992) and adapted in the Indian context by Gupta and Kumar (2023) was used in this study. The tool has four factors namely "Locus of Causality, Stability, Personal Controllability and External Controllability", with each dimension containing three items respectively, making the scale length of 12 items. As per the adapted Indian study on the college students of Punjab state by Bhalla and Kumar (2019), the items 1, 6 and 9 belonged to the dimension of Locus of Causality, items 5, 8 and 12 belonged to the External controllability, items 3, 7 and 11 belonged to Stability dimension and items 2, 4 and 10 belonged to the dimension of Personal controllability. The responses are recorded in a 9-point differential scale, with the summing of items scores leading to the obtaining of the total score. Confirmatory factor analysis conducted of the scale revealed satisfactory estimates of different goodness of fit estimands by Bhalla and Kumar (2019) like Standardized Root Mean Square Residual (SRMR) at 0.05, Root Mean Square Error of Approximation (RMSEA) = 0.07, CMIN/Df = 3.10 and Comparative Fit Index (CFI) = 0.95. The factor loadings of all the 12 items were

above 0.5 expect item 11 in that study. The internal consistency reliability coefficient estimated using Cronbach‟ s alpha for locus of causality dimension was 0.65, for external controllability dimension was 0.6, for personal controllability was 0.68 and for stability was 0.61. Over all, the scale's internal consistency reliability estimate using Cronbach‟ s alpha was at 0.81 as per (Bhalla and Kumar, 2019; Gupta and Kumar, 2023). These findings established the construct related validity of the Revised Causal Dimension Scale and provided a means to readily measure this construct in the Indian context by the researchers.

3.10.5 Psychometric Properties of the Big Three Perfectionism Scale

For the measurement of perfectionism in the college students, the Big three perfectionism scale originally developed by Smith (2016) was selected. The literature does cite studies to exist in the Indian context which used this scale in the recent times for the measurement of perfectionism trait in the Indian subjects (Rizvi and Iiyaz, 2022; Jerine and Pearlene, 2020; Shah, 2020). However, none of these studies conducted validation of the items of this scale in the Indian context. This objective was targeted in the present research by applying the "*Item Response Theory"* (IRT) approach of item analysis, where certain critical characteristics of each of the items of a psychological scale are determined to evaluation the ultimate placing of such item in the final version of the scale.

3.10.6 Estimation of Validity of the Big Three Perfectionism Scale using Item Response Theory (IRT)

Item response theory (IRT), the quality of an item is found out by estimating the probability with which a specific response P(θ) will be selected by an individual possessing the trait under measurement to a certain degree θ. This logic makes the IRT based scale validation, immune from sample related aspects and more be item specific. "*Parametric (PIRT) and non-parametric (NIRT) item response theories"* (Sijtsma and Molenaar, 2002; Olivares, 2005) are the two variants of item response theory (IRT).

Items validated using this approach can perform with invariance if the three assumptions of item response theory, namely, "*unidimensionality, local independence and monotonicity"*, are not violated (Avsar and Tevesancil, 2017; Hambelton and Swaminathan, 1985). Owing to this reason, the approach of "*Item response theory"*

based validation is considered way efficient than the usual "*Classical test theory*" based scale validation approaches.

The graded response model (GRM) is the technique used to conduct item response theory based item analysis of Likert-scale based ordinal response scales can under parametric item response theory category (Ostini and Nering, 2006; DeMars, 2010), which produces the parameter discrimination index to estimate the quality of an item and its further fate of retention or deletion from the final scale, using the functions mirt, ltm and psych in R/Rstudio software.

The response of the item $P(\theta)$ and the measured personality trait θ share a non-linear relationship as an assumption here (Embretson and Resie, 2000). Model-fit requires the presence of large data set for providing appropriate results, which is a matter of challenge under parametric item response theory approach. This roadblock leads to the adoption of non-parametric item response theory NIRT (Stout, 2001), which needs fewer assumptions (Stochl, 2007) and has wide-spread application on categorical ordinal scales (Sijtsma, 2005).

The primary estimator of non-parametric item response theory approach is the Mokken model, which is divided into the "*double monotonicity model*" (DMM) and the "*Monotone Homogeneiry model*" (MHM). The double monotonicity model is further divided into Isotonic and smoothened isotonic regression models and Kernal Smooting approach model (KSAM) (Sijtsma and Molennar, 2002; Lee, 2007).

For the estimation of the discrimination index parameter of an item, two basic models, namely, the unconstrained and the constrained models are tested. The discrimination index is not allowed to change of the items under the constrained model and it is allowed to change for the items under unconstrained model, Anova test reveals the better model between the two, by providing a significant p-value.

This exercise is followed by the generation and subsequent analysis of certain graphs related to each of the analysed items listed below:

- Item Characteristic Curve (ICC),
- Item Information Curve (IIC),
- Test Information Function Curve (TIC) and
- Option Characteristic Curve (OCC)

According to the Item Response Category Characteristic Curve, an item separates subjects who possess the trait from those who donot possess the trait when the curves have heights and when they are distributed across all the levels of the measured latent trait.

The extent of accurate measurement of a latent trait at various levels is shown by the Item Information Curve (IIC). Items can perform well at both the low and high levels of the variables‟ presence in individuals.

When the Item Information Curves of all the items is added, the Test Information Function Curve is obtained, which indicates the over-all performance of the entire scale while measuring the latent trait at different levels of its existence in the sample subjects and is favoured to rise at about the mean of the sample (Rizopoulos, 2006).

The parallel to the ICC in response of the items in a scale is the Option Characteristic Curve (OCC) which pictorially shows the functioning of every response category of an instrument‟ s item over various levels of the measured hidden trait (Mazza et al., 2014). These curves should be such that the item must measure the trait for all the levels of the tool.

The Steps / sample Rcodes for conducting the IRT based scale validation of the Big Three Perfectionism scale on a sample size of n=300, are shared below along with the results in the form of discrimination index of items and graphically characteristic curves, :

> Import the data file in Rstudio

> View(Perfectionism_300)

> install.packages(“psych”)

> library(psych)

> install.packages(“ltm”)

> library(ltm)

> Fit1<-grm(Perfectionism_300, constrained = TRUE)

> Fit1

Call:

Grm (data = Perfectionism_300, constrained = TRUE) Coefficients:

$Perf1

Extrmt1 Extrmt 2 Extrmt 3 Extrmt4 Extrmt 5 Dscrmn

-6.946 -0.912 0.764 1.564 2.276 0.891

$Perf2

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.371 -0.671 1.244 2.901 0.891

$Perf3

Extrmt 1 Extrmt 2 Extrmt 3 Extrmt 4 Dscrmn

-3.624 -1.446 0.649 2.347 0.891

$Perf4

Extrmt 1 Extrmt 2 Extrmt 3 Extrmt 4 Dscrmn

-3.445 -1.247 -0.188 1.685 0.891

$Perf5

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.108 -0.863 0.201 1.089 0.891

$Perf6

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.121 -1.019 0.306 2.117 0.891

$Perf7

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.698 -0.966 1.134 2.607 0.891

$Perf8

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.731 -0.644 0.446 2.178 0.891

$Perf9

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.886 -0.680 0.583 1.719 0.891

$Perf10

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.367 -0.738 0.474 2.384 0.891

$Perf11

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.966 -1.106 0.804 2.514 0.891

$Perf12

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.831 -1.085 0.094 2.266 0.891

$Perf13

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.365 -0.857 0.472 1.732 0.891

$Perf14

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.903 -1.031 0.357 2.889 0.891

$Perf15

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.625 -1.335 0.633 2.315 0.891

$Perf16

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.705 -0.728 0.562 2.403 0.891

$Perf17

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.790 -1.041 0.503 2.100 0.891

$Perf18

Extrmt 1 Extrmt 2 Extrmt 3 Extrmt 4 Dscrmn

-2.866 -0.767 0.673 2.533 0.891

$Perf1

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.681 -1.207 0.842 2.619 0.891

$Perf20

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.749 -1.435 0.247 2.311 0.891

$Perf21

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.852 -1.186 0.352 1.624 0.891

$Perf22

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.749 -1.104 0.429 2.474 0.891

$Perf23

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.628 -1.356 0.959 2.774 0.891

$Perf24

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.902 -0.780 0.743 2.624 0.891

$Perf25

Extrmt 1 Extrmt 2 Extrmt3 Extrmt4 Dscrmn

-1.886 -0.728 0.725 2.305 0.891

$Perf26

Extrmt 1 Extrmt 2 Extrmt3 Extrmt4 Dscrmn

-3.073 -0.792 0.972 2.731 0.891

$Perf27

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.630 -1.395 0.695 2.763 0.891

$Perf28

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.784 -1.112 0.526 2.678 0.891

$Perf29

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.741 -1.021 0.404 1.929 0.891

$Perf30

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.598 -0.946 0.541 2.522 0.891

$Perf31

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.909 -1.085 0.886 2.528 0.891

$Perf32

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.579 -0.802 0.589 2.262 0.891

$Perf33

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.098 -0.699 0.522 2.101 0.891

$Perf34

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.579 -0.711 0.575 1.996 0.891

$Perf35

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.724 -0.984 0.812 2.337 0.891

$Perf36

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.631 -0.922 0.334 2.550 0.891

$Perf37

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.037 -0.640 0.662 1.688 0.891

$Perf38

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.674 -0.860 0.492 2.366 0.891

$Perf39

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.280 -0.828 0.808 2.156 0.891

$Perf40

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.368 -0.687 0.468 2.288 0.891

$Perf41

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.853 -0.807 0.466 2.086 0.891

$Perf42

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.319 -0.714 0.414 2.274 0.891

$Perf43

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.423 -0.997 0.647 2.164 0.891

$Perf44

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.214 -0.963 0.209 2.232 0.891

$Perf45

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.145 -1.011 0.220 1.333 0.891

Log.Lik: -19789.1

Under the constrained model, the discrimination index of all the 45 items of the scale, are fixed at 0.891.

> Fit2<-grm(Perfectionism_300, constrained = FALSE)

> Fit2 Call:

grm(data = Perfectionism_300, constrained = FALSE) Coefficients:

$Perf1

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Extrmt5 Dscrmn

-5.535 -0.743 0.682 1.361 1.992 1.114

$Perf2

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.826 -0.355 0.765 1.708 1.866

$Perf3

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.362 -1.354 0.594 2.183 0.976

$Perf4

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-4.544 -1.657 -0.270 2.182 0.656

$Perf5

```
Extrmt1  Extrmt2  Extrmt3  Extrmt4   Dscrmn
-7.288  -3.055 0.453 3.408    0.251
$Perf6
Extrmt1  Extrmt2  Extrmt3  Extrmt4   Dscrmn
-4.745  -1.585 0.439 3.227    0.553
$Perf7
Extrmt1  Extrmt2  Extrmt3  Extrmt4   Dscrmn
-2.484  -0.902 1.062 2.476    0.971
$Perf8
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -1.820   -0.394    0.380    1.557    1.467
$Perf9
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -0.986   -0.310    0.402    1.030    1.937
$Perf10
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -1.889   -0.416    0.325    1.437    1.796
$Perf11
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -2.246   -0.833    0.653    2.014    1.184
$Perf12
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -3.364   -1.266    0.107    2.679    0.735
$Perf13
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -5.005   -1.830    0.955    3.590    0.401
$Perf14
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -2.945   -1.011    0.383    3.003    0.859
$Perf15
 Extrmt1  Extrmt2 Extrmt3  Extrmt4   Dscrmn
 -2.298   -1.180    0.593    2.109    1.025
```

$Perf16

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.388 -0.356 0.386 1.378 2.001

$Perf17

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-0.845 -0.469 0.338 1.140 2.216

$Perf18

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.860 -0.487 0.508 1.737 1.500

$Perf19

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.543 -1.152 0.815 2.532 0.934

$Perf20

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.359 -1.753 0.300 2.846 0.701

$Perf21

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-5.859 -2.439 0.671 3.284 0.408

$Perf22

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.899 -1.567 0.572 3.467 0.604

$Perf23

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.410 -1.2730.952 2.647 0.960

$Perf24

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.188 -0.577 0.621 2.051 1.246

$Perf25

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.412 -0.490 0.656 1.870 1.211

$Perf26

Extrmt1 Extrmt 2 Extrmt 3 Extrmt 4 Dscrmn

-2.550 -0.640 0.887 2.349 1.104

$Perf27

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-4.204 -1.632 0.820 3.220 0.747

$Perf28

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-6.361 -2.544 1.094 5.797 0.372

$Perf29

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-7.122 -2.6910.926 4.832 0.323

$Perf30

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-4.848 -1.792 0.935 4.573 0.455

$Perf31

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.466 -1.290 1.059 3.031 0.731

$Perf32

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.436 -0.724 0.598 2.158 0.950

$Perf33

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.825 -0.570 0.504 1.867 1.037

$Perf34

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.581 -0.726 0.575 1.994 0.889

$Perf35

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-4.073 -1.485 1.179 3.436 0.571

$Perf36

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-5.031 -1.792 0.584 4.734 0.442

$Perf37

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-5.903 -1.944 1.738 4.699 0.291

$Perf38

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-4.183 -1.358 0.745 3.661 0.548

$Perf39

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.297 -1.198 1.165 3.060 0.598

$Perf40

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-2.522 -0.741 0.511 2.443 0.843

$Perf41

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-1.895 -0.815 0.508 2.166 0.867

$Perf42

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.268 -1.008 0.600 3.199 0.615

$Perf43

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-3.734 -1.537 0.997 3.307 0.553

$Perf44

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-5.026 -2.208 0.388 4.870 0.375

$Perf45

Extrmt1 Extrmt2 Extrmt3 Extrmt4 Dscrmn

-6.552 -3.091 0.642 3.950 0.277

Log.Lik: -19725.68

Table 3.9 Discrimination index of items of the big three perfectionisim scale The unconstrained model produced the discrimination index estimates of all the 45 items of the scale, as shown below:

Item No.	Discrimination Index	Performance of the Item in the Scale
1	1.114	Good
2	1.866	Good
3	0.976	Good
4	0.656	Moderate
5	0.251	Poor
6	0.553	Moderate
7	0.971	Good
8	1.467	Good
9	1.937	Good
10	1.796	Good
11	1.184	Good
12	0.735	Good
13	0.401	Poor
14	0.859	Good
15	1.025	Good
16	2.001	Good
17	2.216	Good
18	1.500	Good
19	0.934	Good
20	0.701	Moderate
21	0.408	Poor
22	0.604	Moderate
23	0.960	Good
24	1.246	Good
25	1.211	Good
26	1.104	Good

27	0.747	Moderate
28	0.372	Poor
29	0.323	Poor
30	0.455	Poor
31	0.731	Moderate
32	0.950	Good
33	1.037	Good
34	0.889	Good
35	0.571	Moderate
36	0.442	Poor
37	0.291	Poor
38	0.548	Moderate
39	0.598	Moderate
40	0.843	Good
41	0.867	Good
42	0.615	Moderate
43	0.553	Moderate
44	0.375	Poor
45	0.277	Poor

Typically, the item discrimination index values of items range from 0 to 2, with better items having higher discrimination index. Based on this thumb rule, the items of the Big three perfectionism scale, were categorized as good, moderate and poor in performance as an item in the scale. Some items had their discrimination index exceeding the typical upper limit of 2, which is legitimate (Hays et al., 2000).

anova (Fit1,Fit2)

Likelihood Ratio Table

AIC BIC log.Lik LRT df p.value

Fit1 39942.20 40616.29 -19789.10

Fit2 39903.36 40740.42 -19725.68 126.84 44 <0.001

The obtained p-value from the above ANOVA test is lower than 0.01 and hence the result is significant implying that the unconstrained model better than the constrained model, and hence the obtained discrimination index of the items are valid as well.

> plot(Fit2, lwd = 2, cex = 0.8,legend = TRUE, cx = “topright”,xlab = “Perfectionism”, cex.main = 1,cex.lab = 1, cex.axis = 1)

Hit <Return> to see next plot:

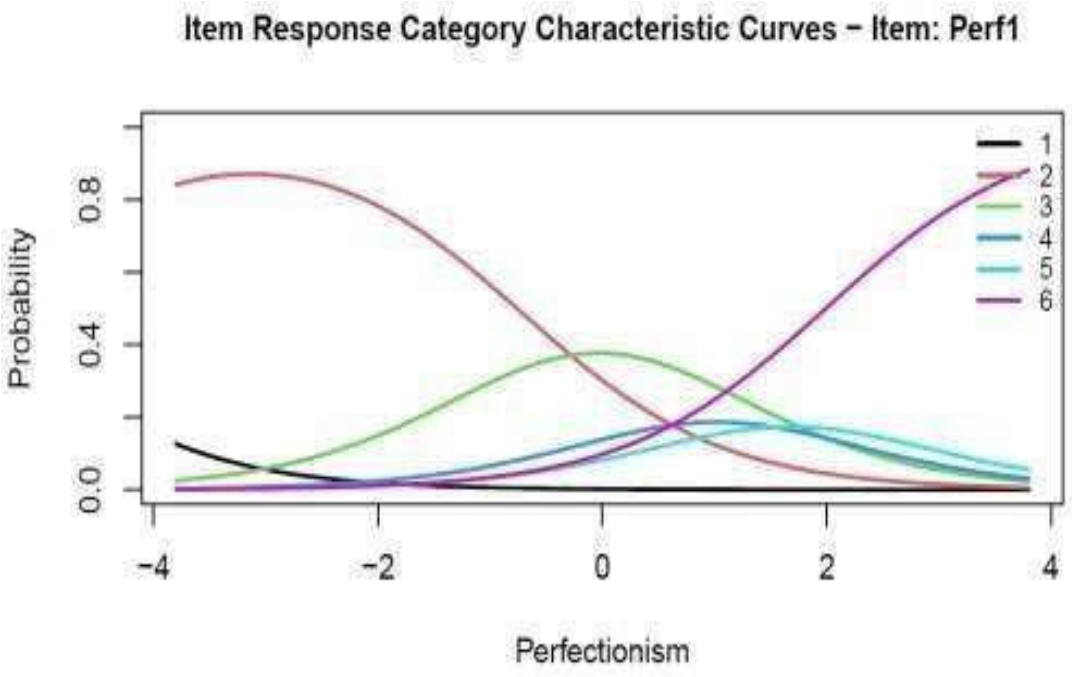

Fig. 3.3 Item Response Category Characteristic Curves of Item 1 of Perfectionism Scale

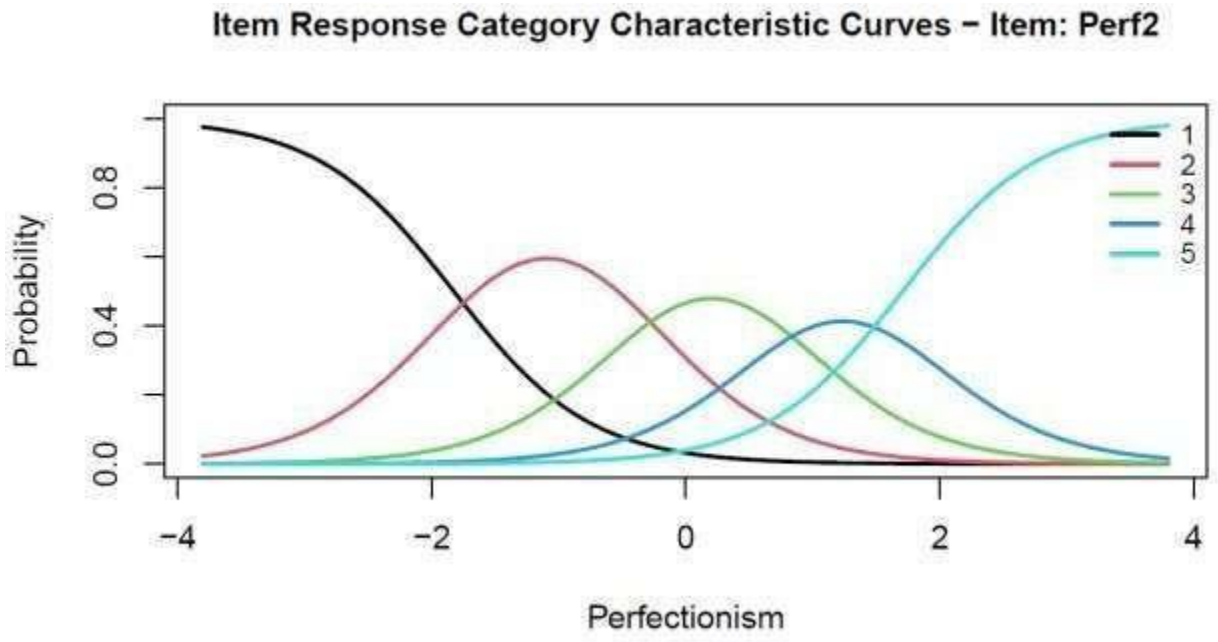

Fig. 3.4 Item Response Category Characteristic Curves of Item 2 of Perfectionism Scale

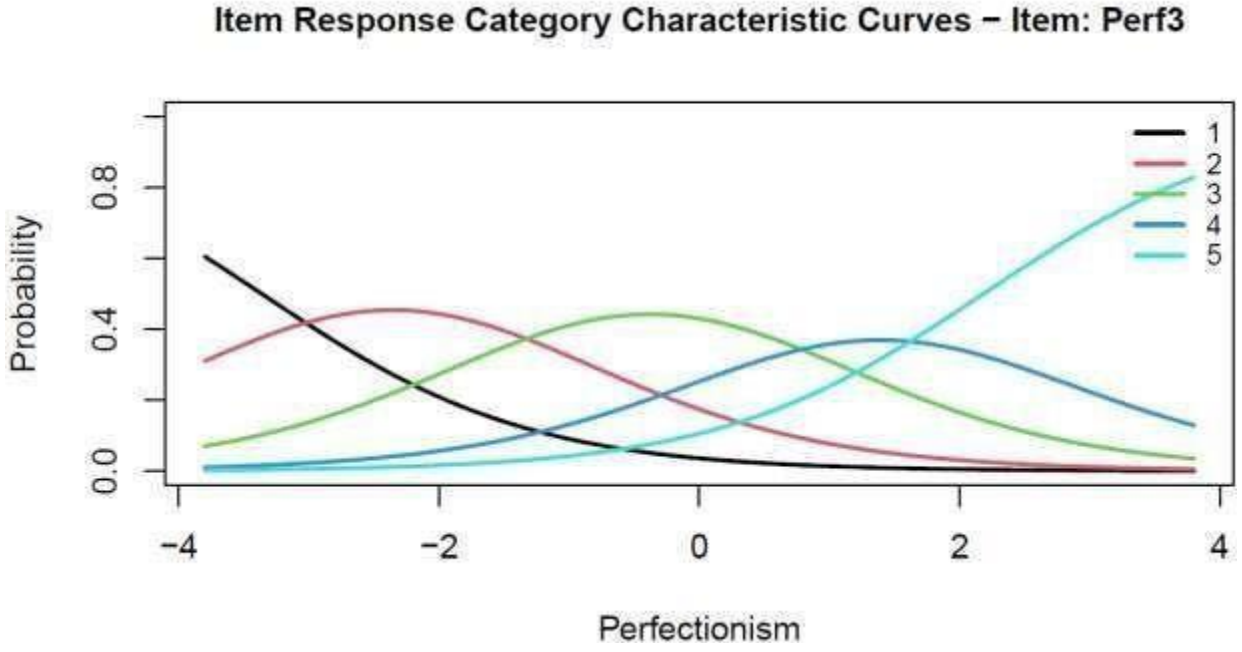

Fig. 3.5 Item Response Category Characteristic Curves of Item 3 of Perfectionism Scale

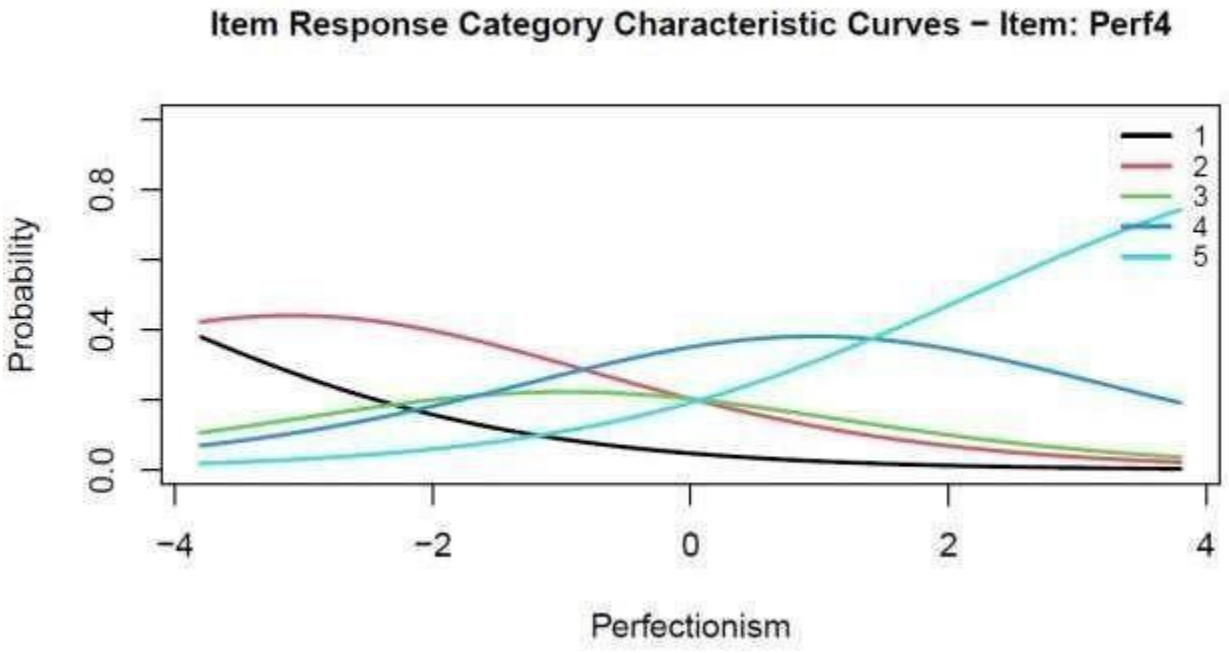

Fig. 3.6 Item Response Category Characteristic Curves of Item 4 of Perfectionism Scale.

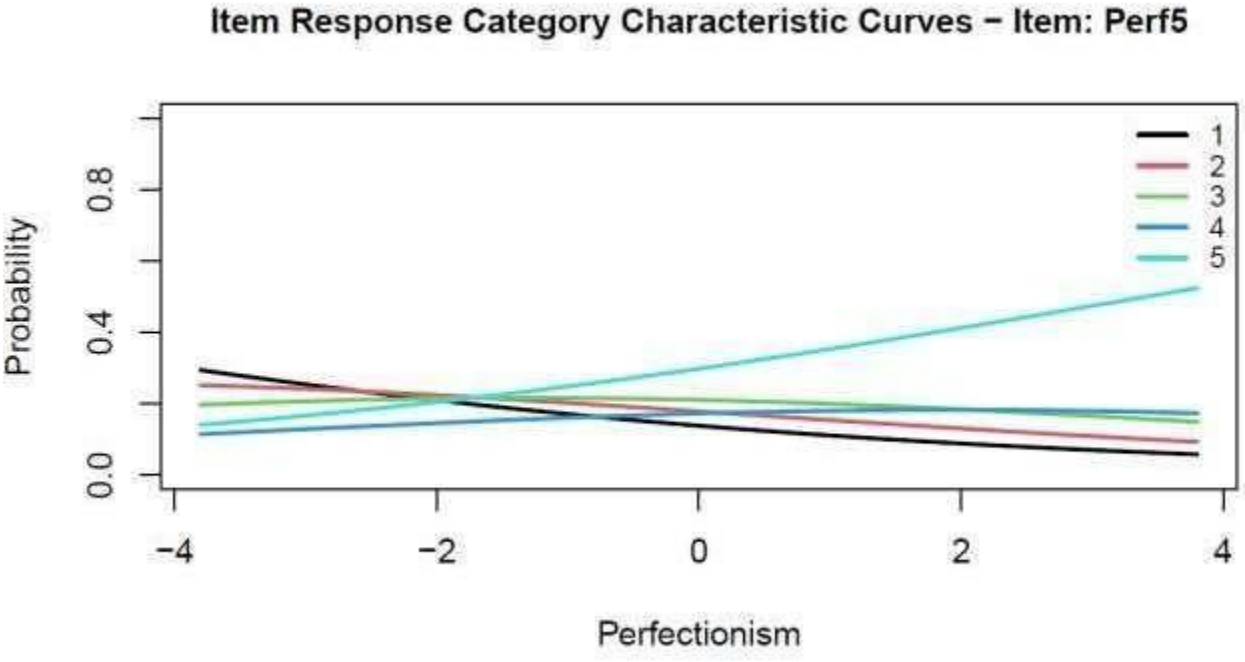

Fig. 3.7 Item Response Category Characteristic Curves of Item 5 of Perfectionism Scale

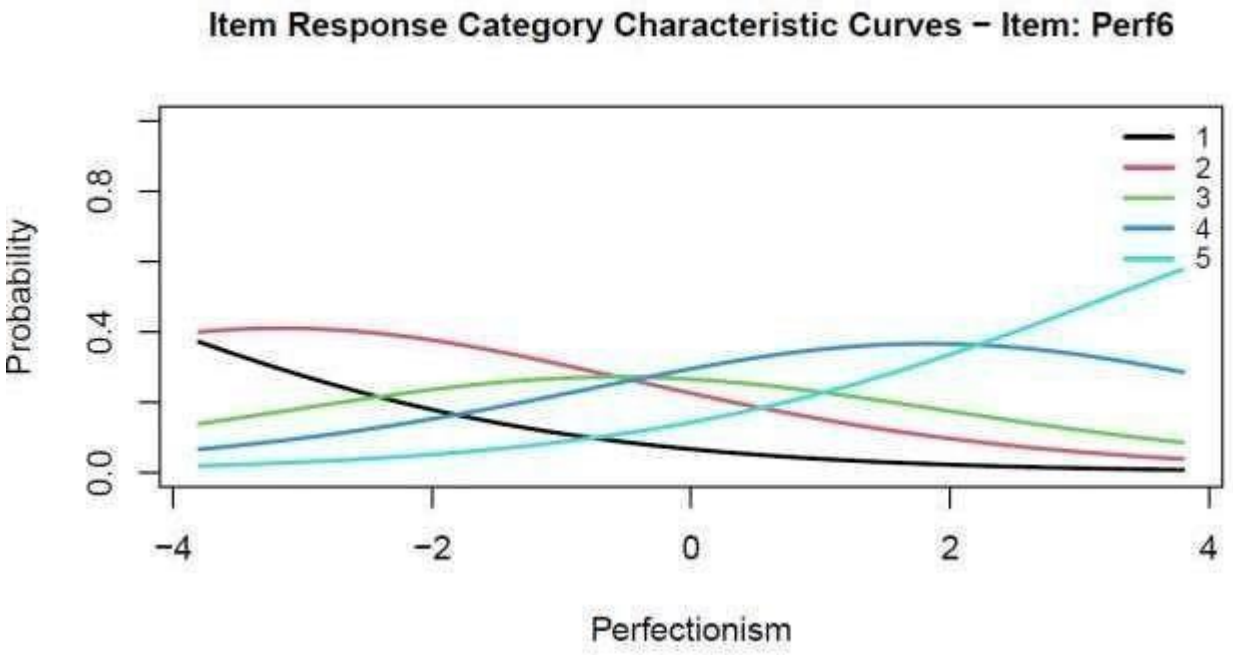

Fig. 3.8 Item Response Category Characteristic Curves of Item 6 of Perfectionism Scale

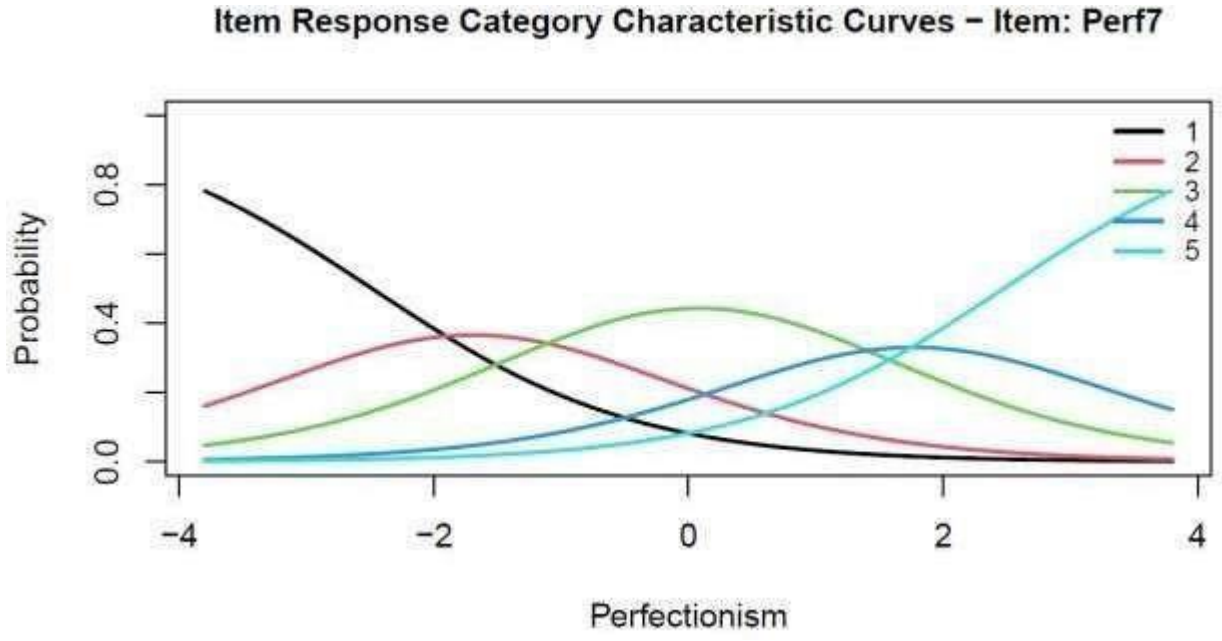

Fig. 3.9 Item Response Category Characteristic Curves of Item 7 of Perfectionism Scale

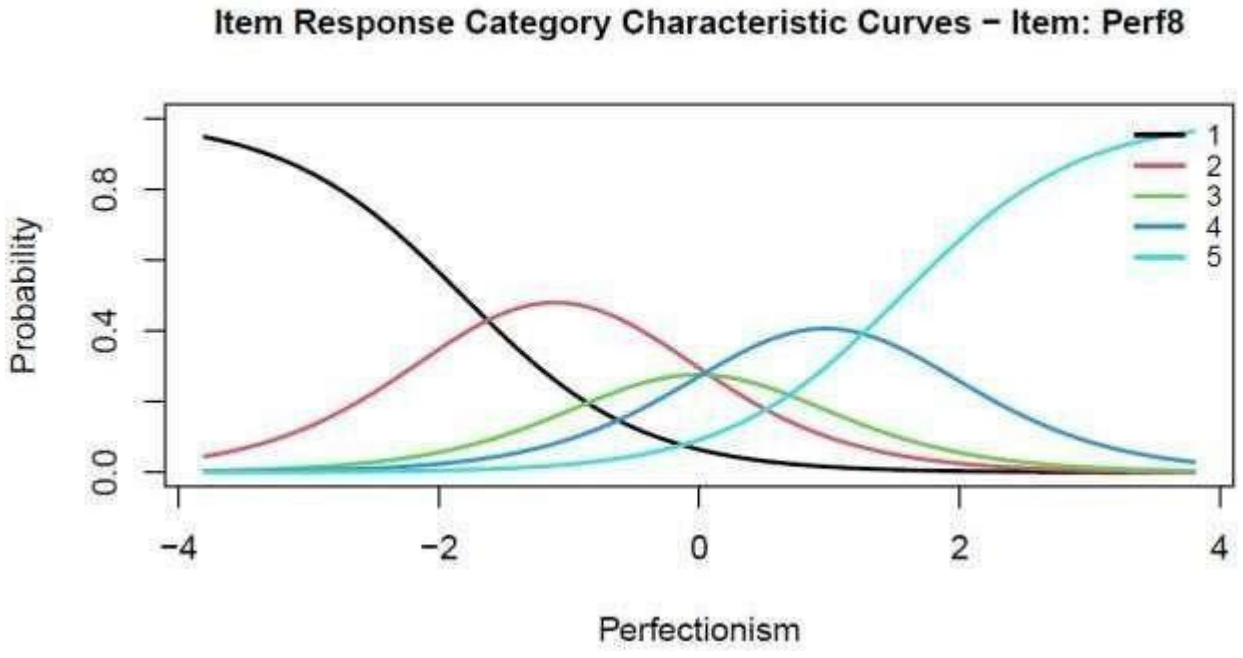

Fig. 3.10 Item Response Category Characteristic Curves of Item 8 of Perfectionism Scale

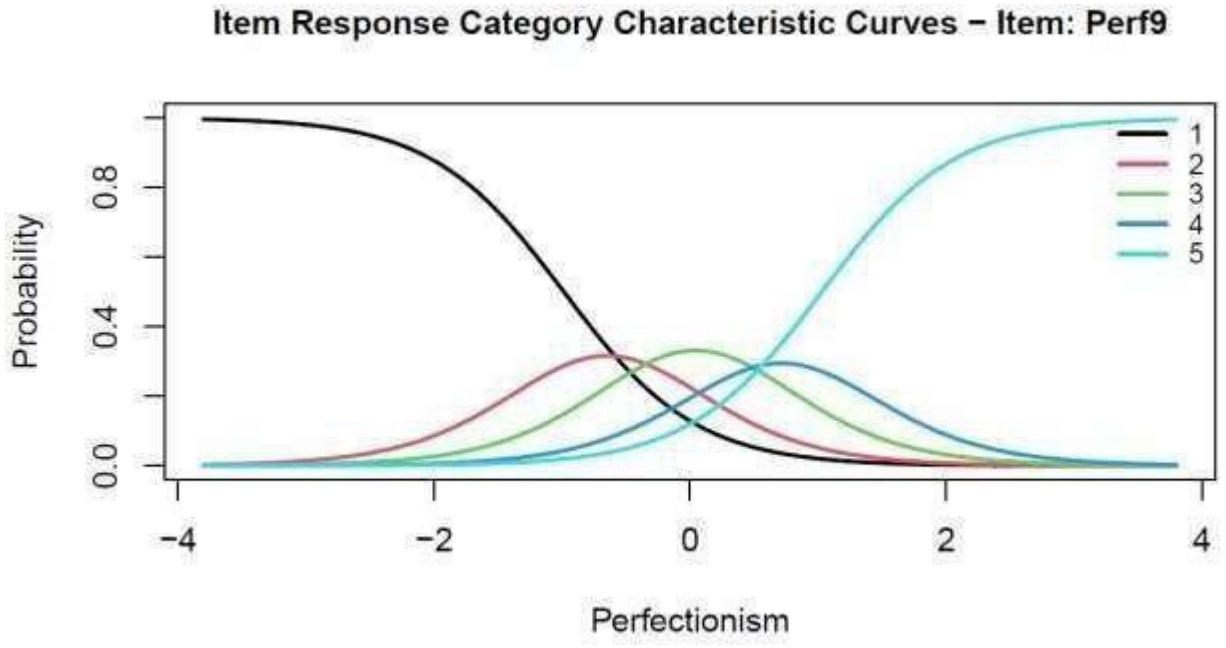

Fig. 3.11 Item Response Category Characteristic Curves of Item 9 of Perfectionism Scale

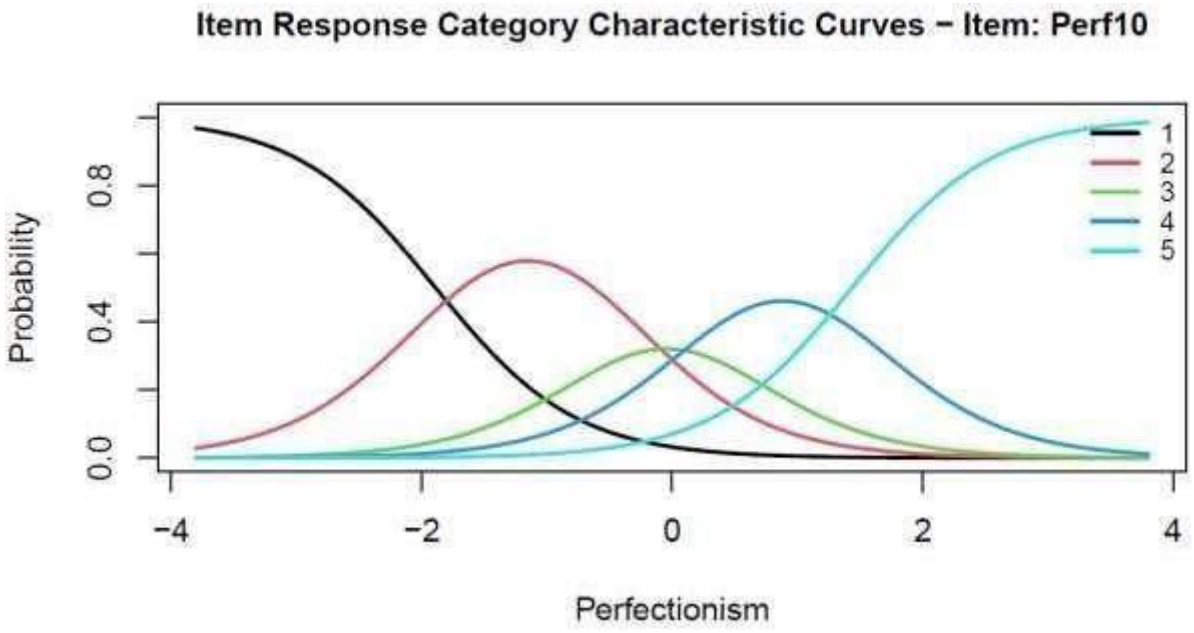

Fig. 3.12 Item Response Category Characteristic Curves of Item 10 of Perfectionism Scale

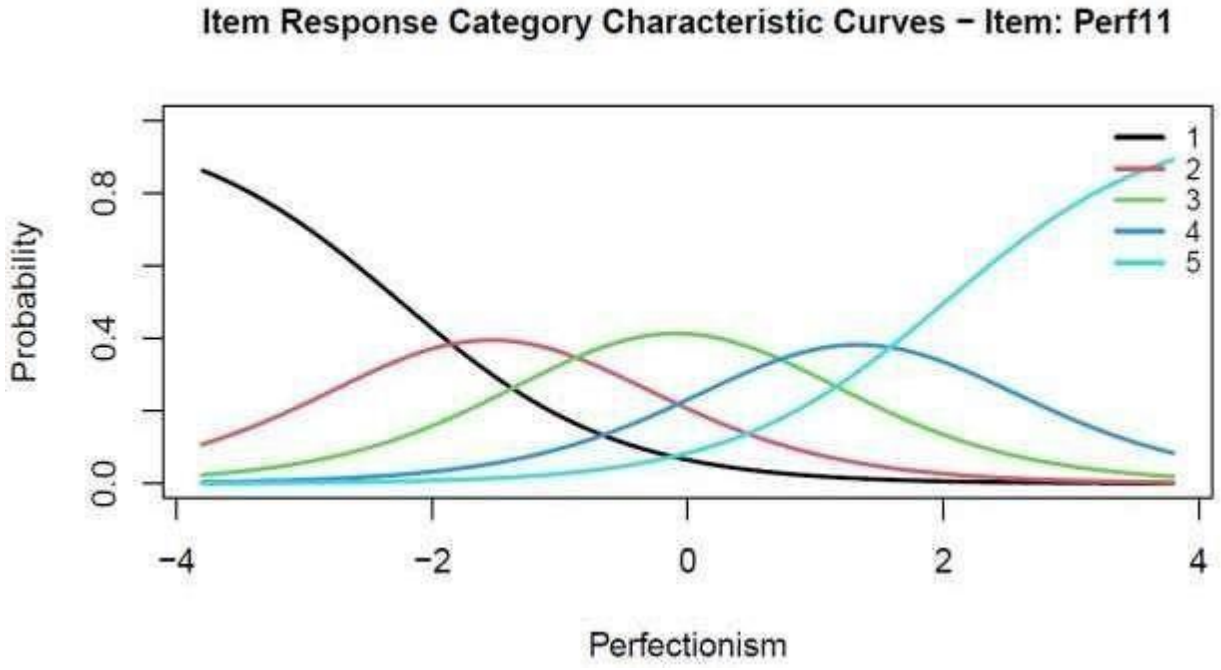

Fig. 3.13 Item Response Category Characteristic Curves of Item 11 of Perfectionism Scale

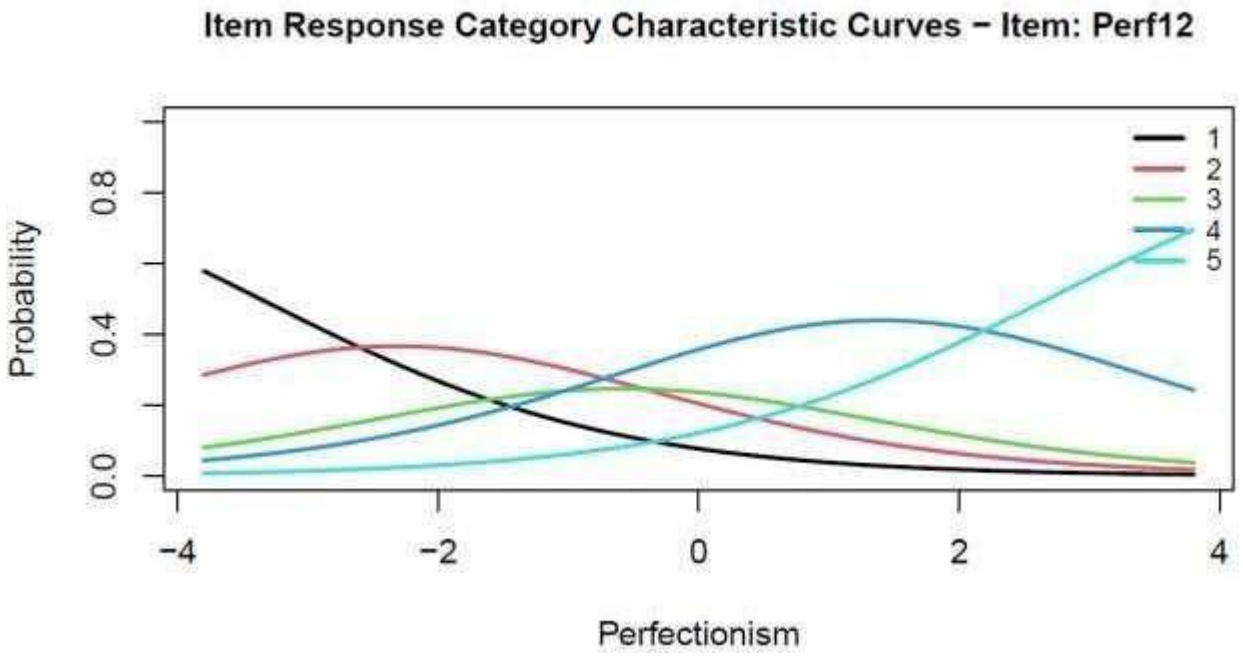

Fig. 3.14 Item Response Category Characteristic Curves of Item 12 of Perfectionism Scale

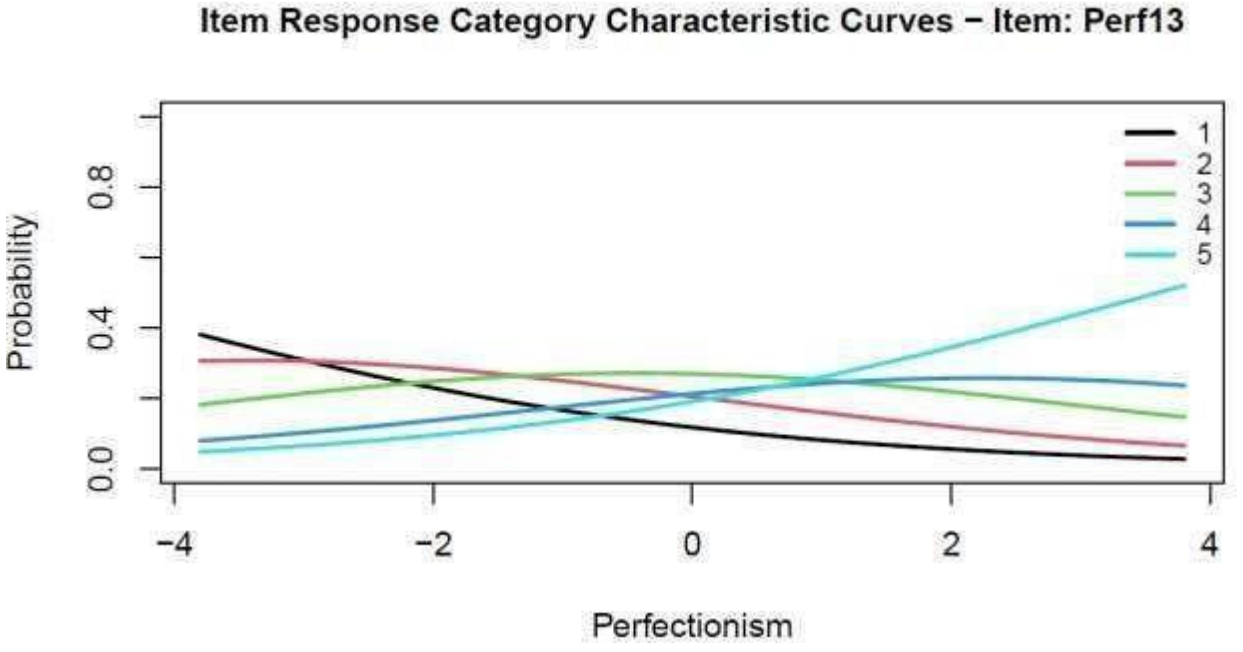

Fig. 3.15 Item Response Category Characteristic Curves of Item 13 of Perfectionism Scale

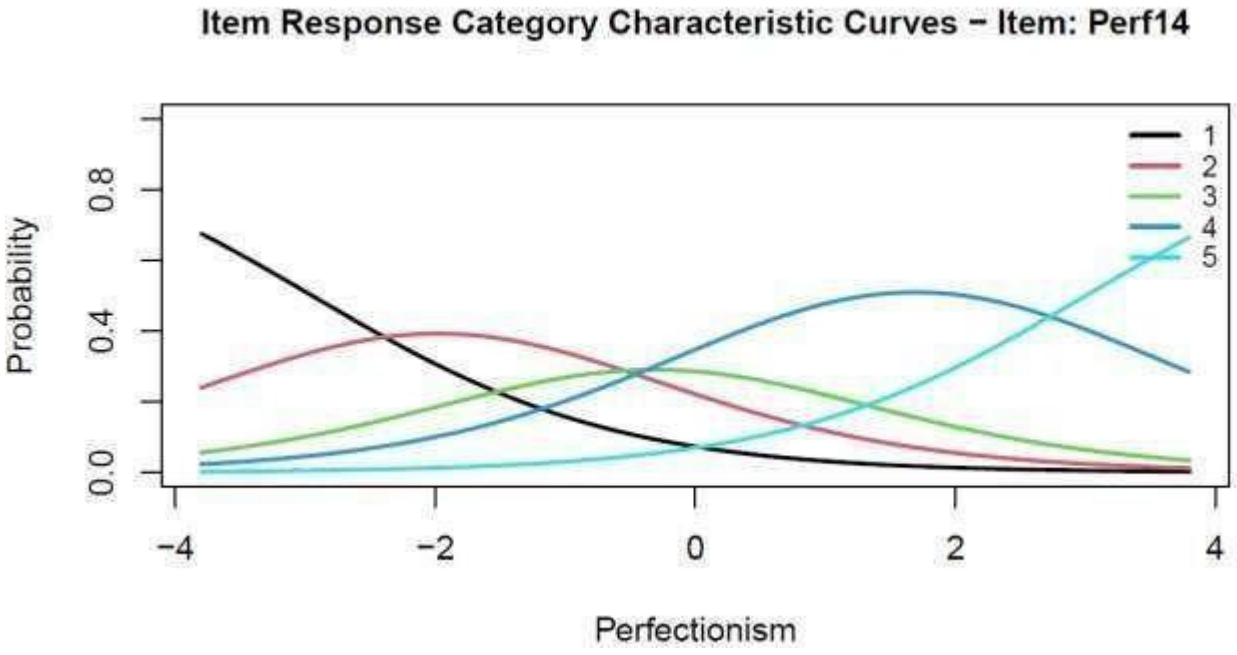

Fig. 3.16 Item Response Category Characteristic Curves of Item 14 of Perfectionism Scale

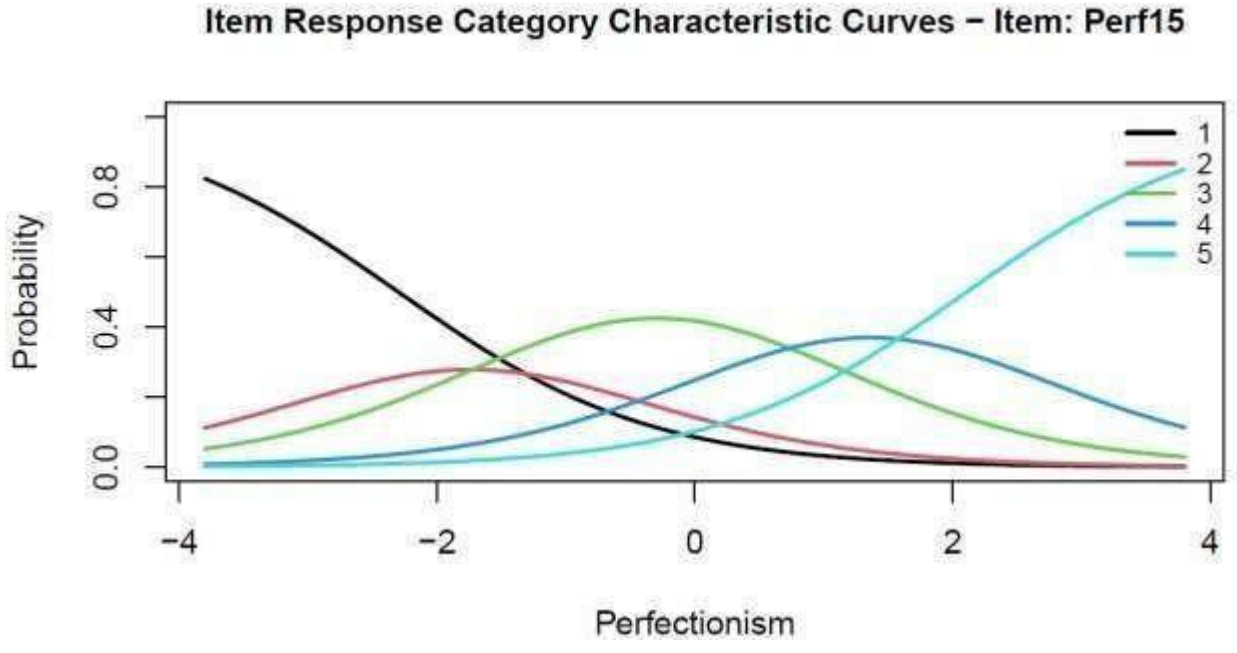

Fig. 3.17 Item Response Category Characteristic Curves of Item 15 of Perfectionism Scale

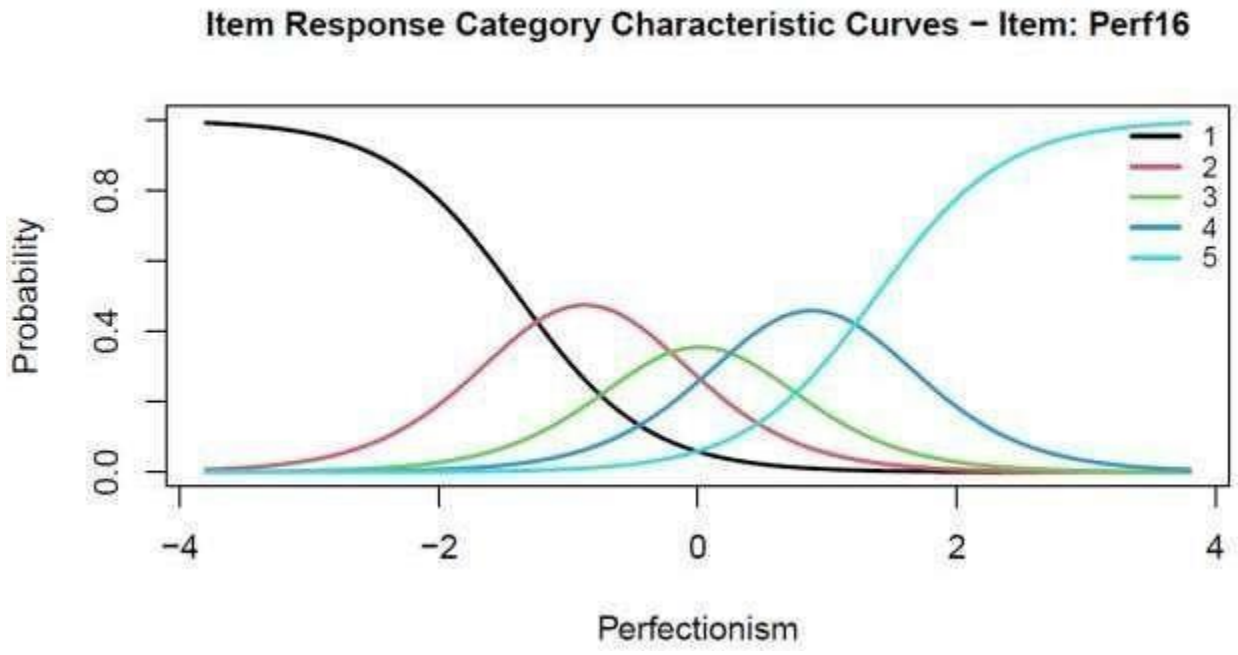

Fig. 3.18 **Item Response Category Characteristic Curves of Item 16 of Perfectionism Scale**

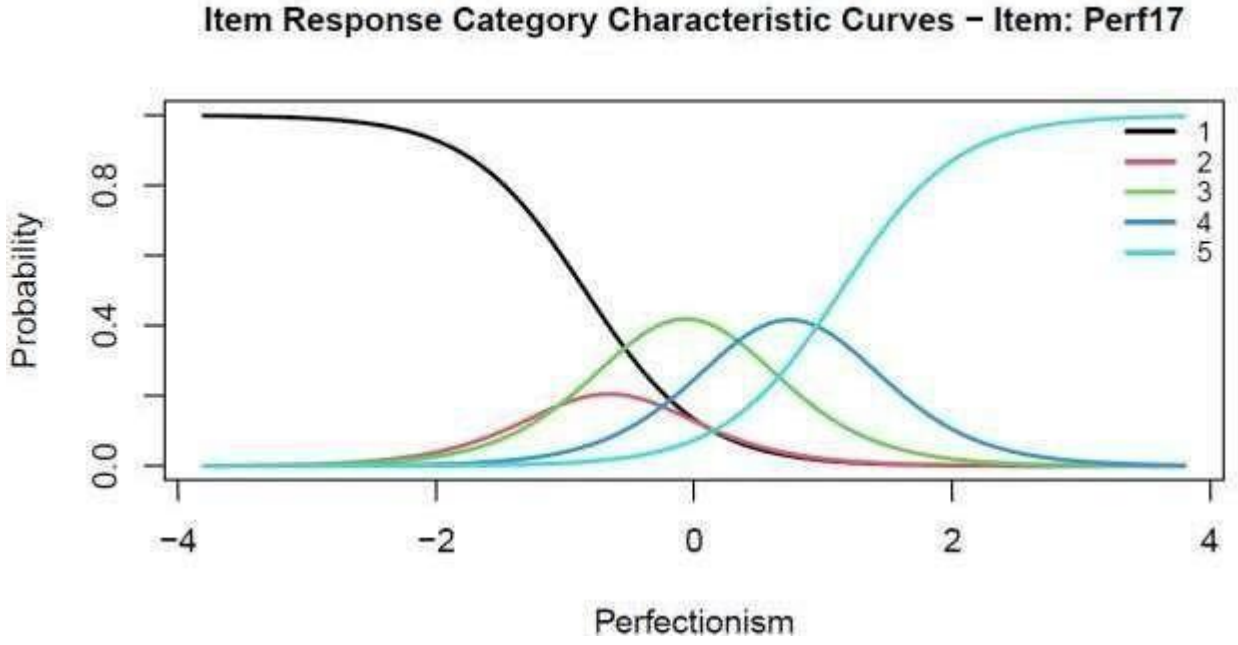

Fig. 3.19 Item Response Category Characteristic Curves of Item 17 of Perfectionism Scale

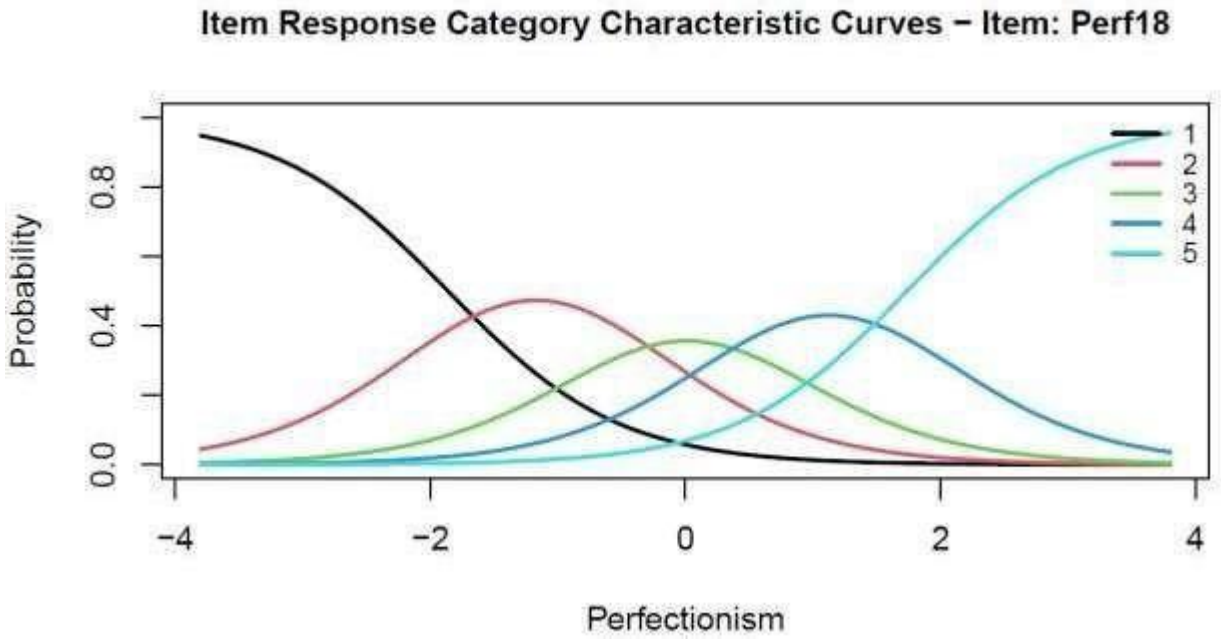

Fig. 3.20 Item Response Category Characteristic Curves of Item 18 of Perfectionism Scale

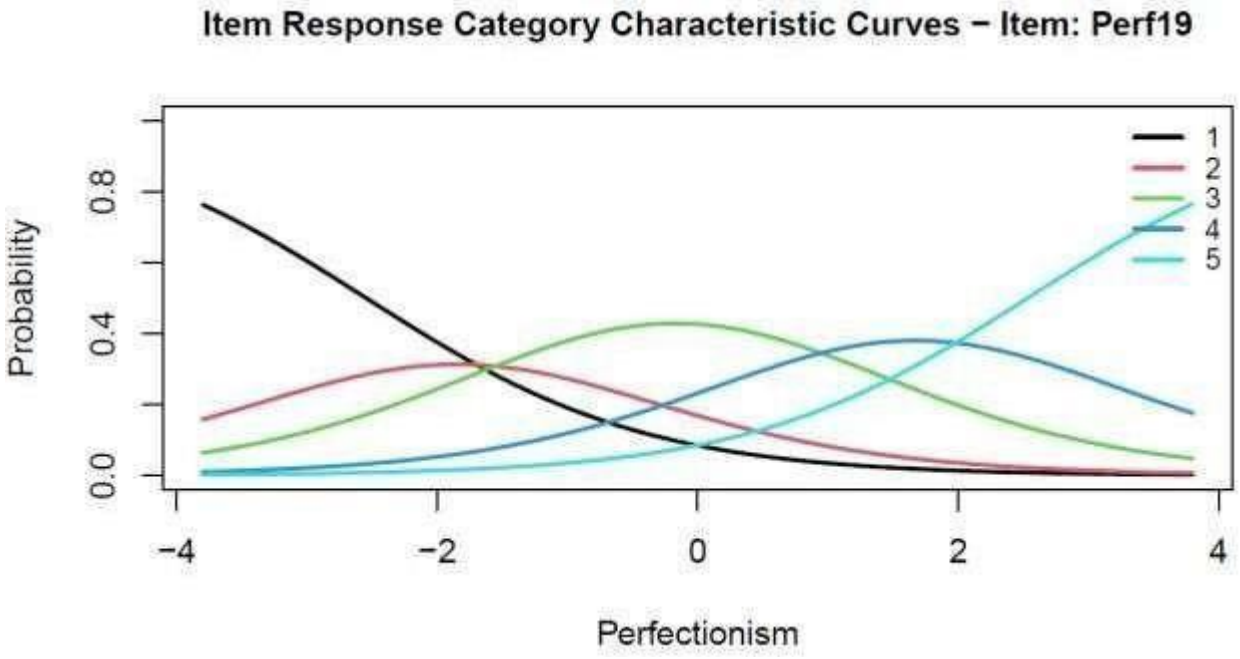

Fig. 3.21 Item Response Category Characteristic Curves of Item 19 of Perfectionism Scale

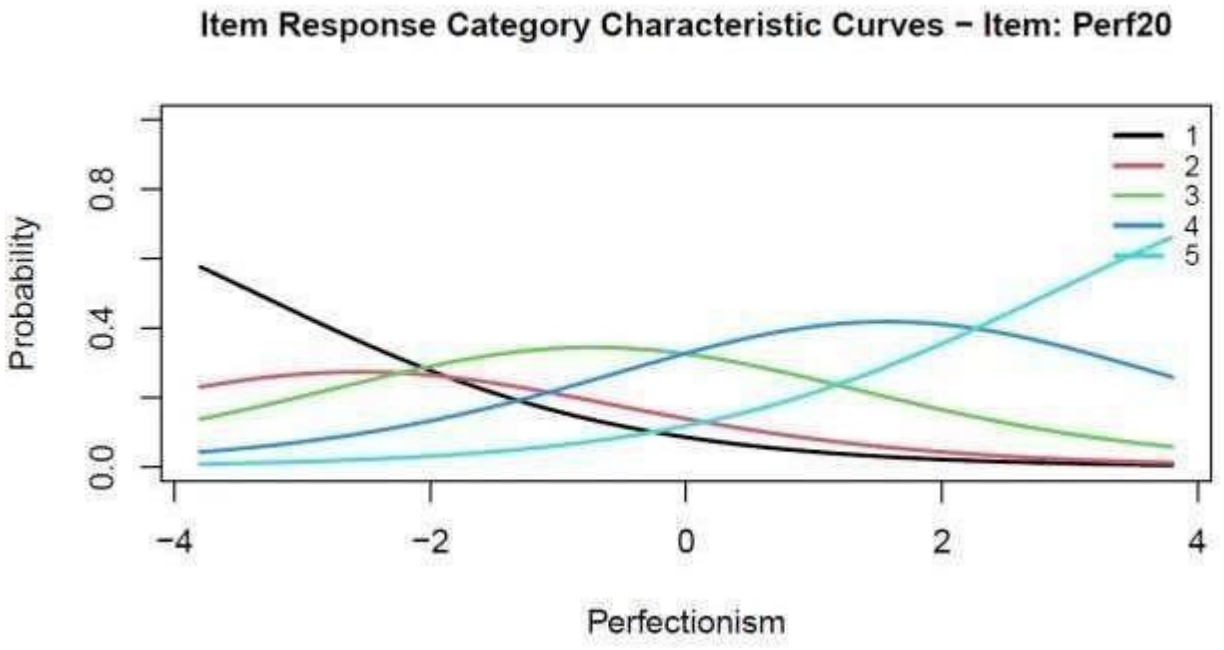

Fig. 3.22 Item Response Category Characteristic Curves of Item 20 of Perfectionism Scale

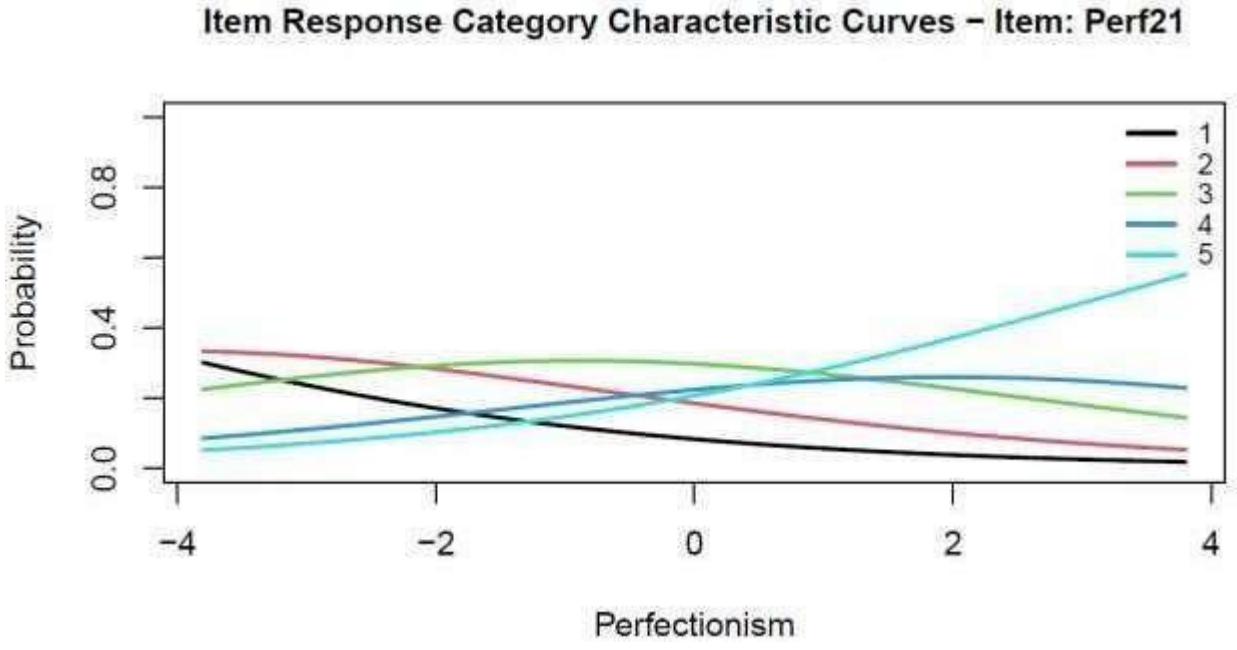

Fig. 3.23 Item Response Category Characteristic Curves of Item 21 of Perfectionism Scale

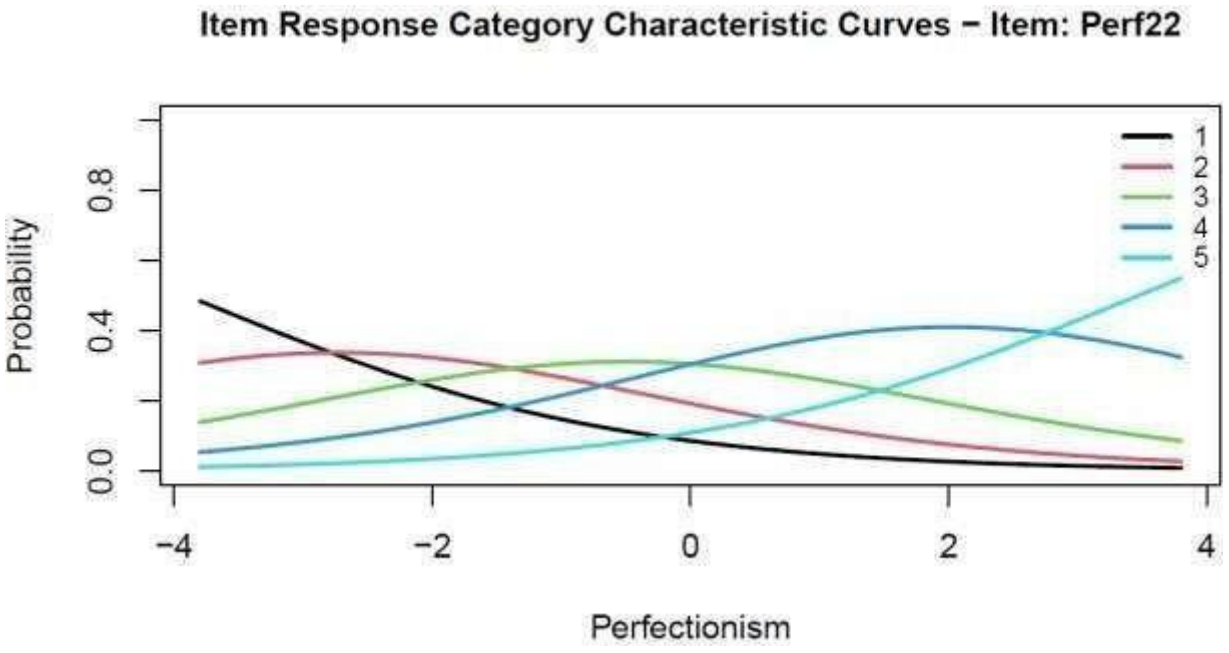

Fig. 3.24 Item Response Category Characteristic Curves of Item 22 of Perfectionism Scale

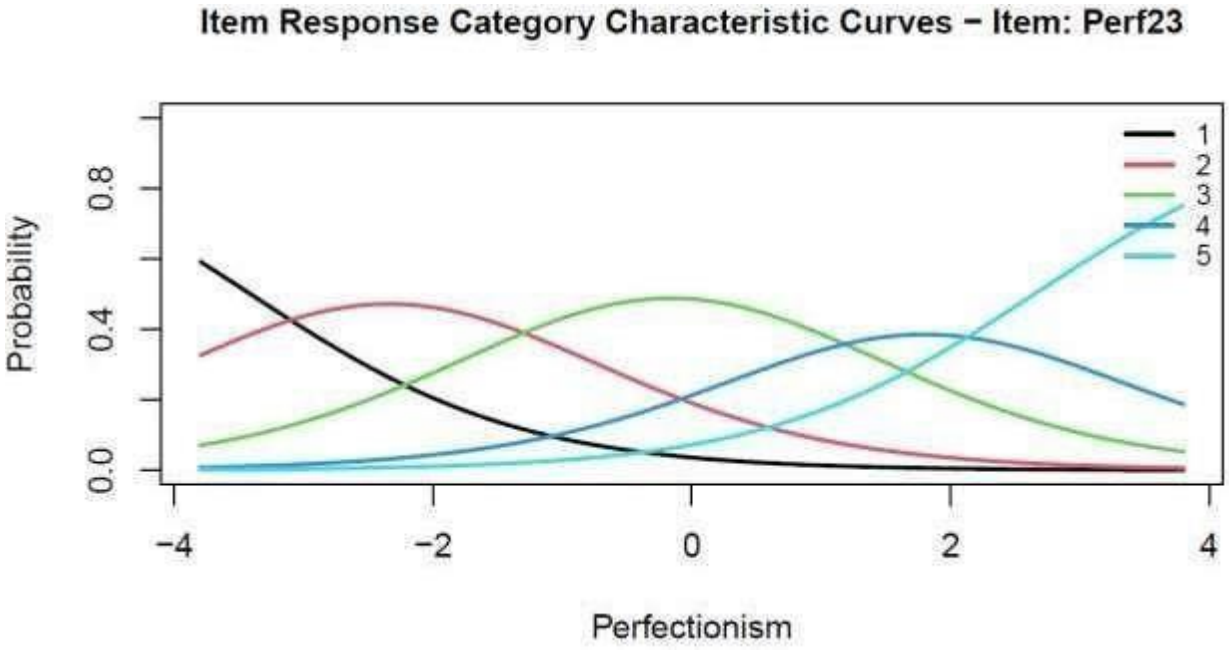

Fig. 3.25 Item Response Category Characteristic Curves of Item 23 of Perfectionism Scale

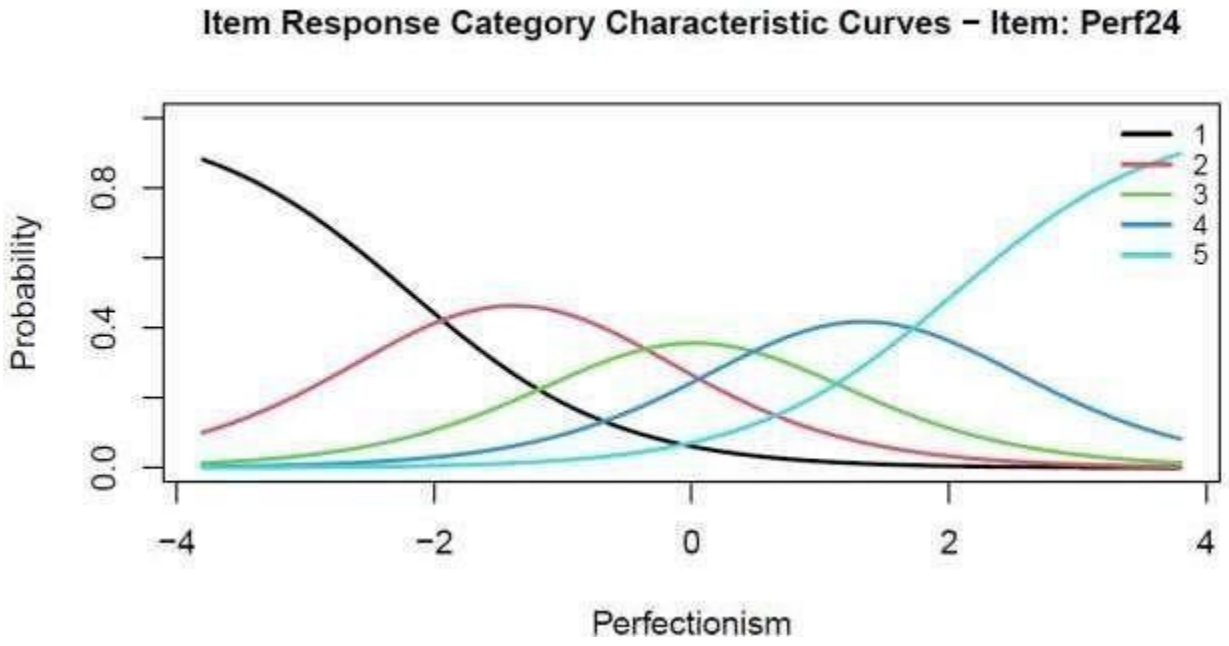

Fig. 3.26 Item Response Category Characteristic Curves of Item 24 of Perfectionism Scale

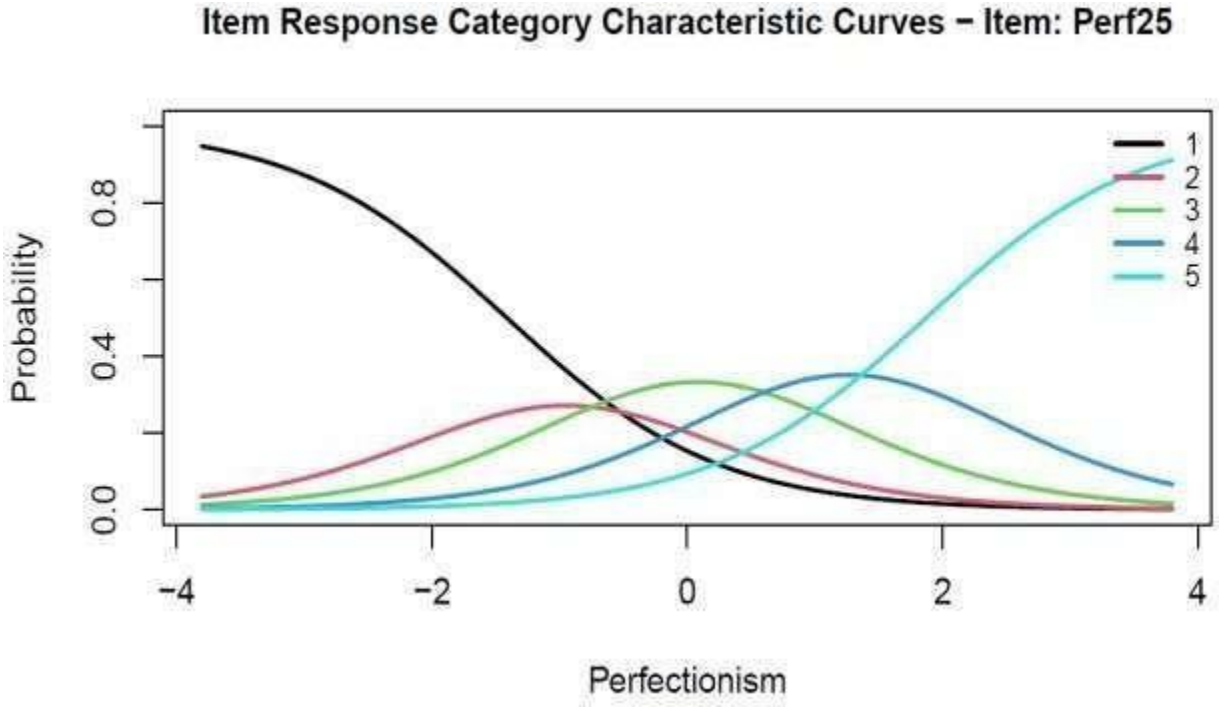

Fig. 3.27 Item Response Category Characteristic Curves of Item 25 of Perfectionism Scale

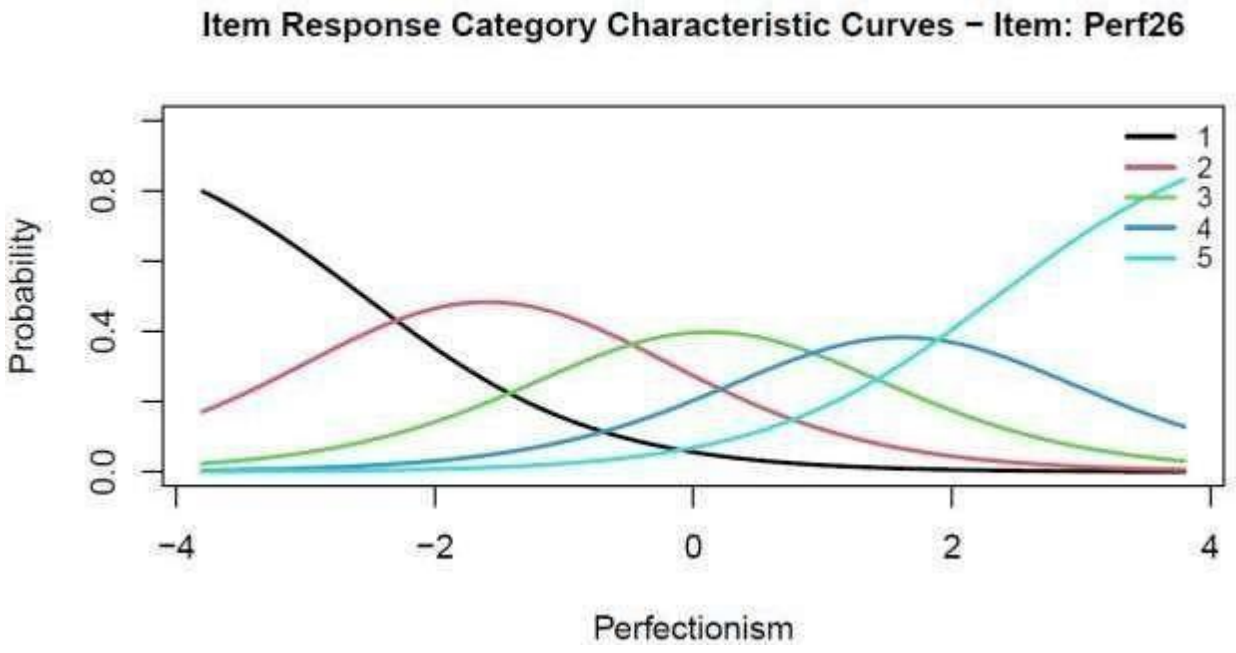

Fig. 3.28 Item Response Category Characteristic Curves of Item 26 of Perfectionism Scale

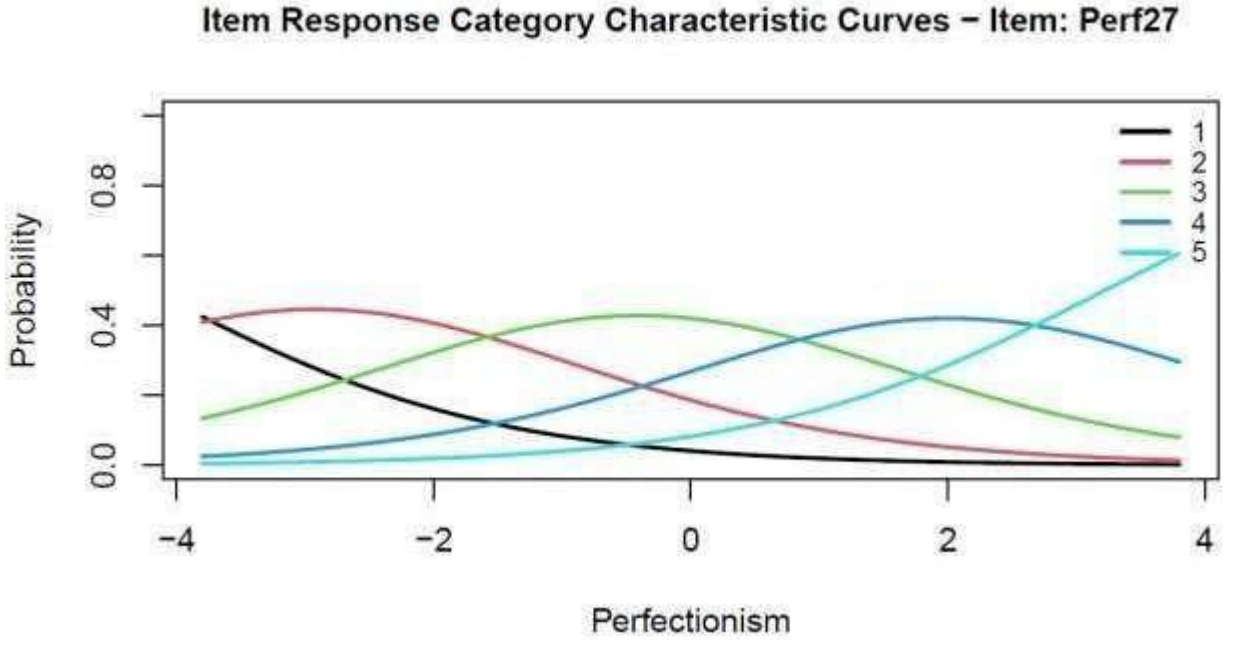

Fig. 3.29 Item Response Category Characteristic Curves of Item 27 of Perfectionism Scale

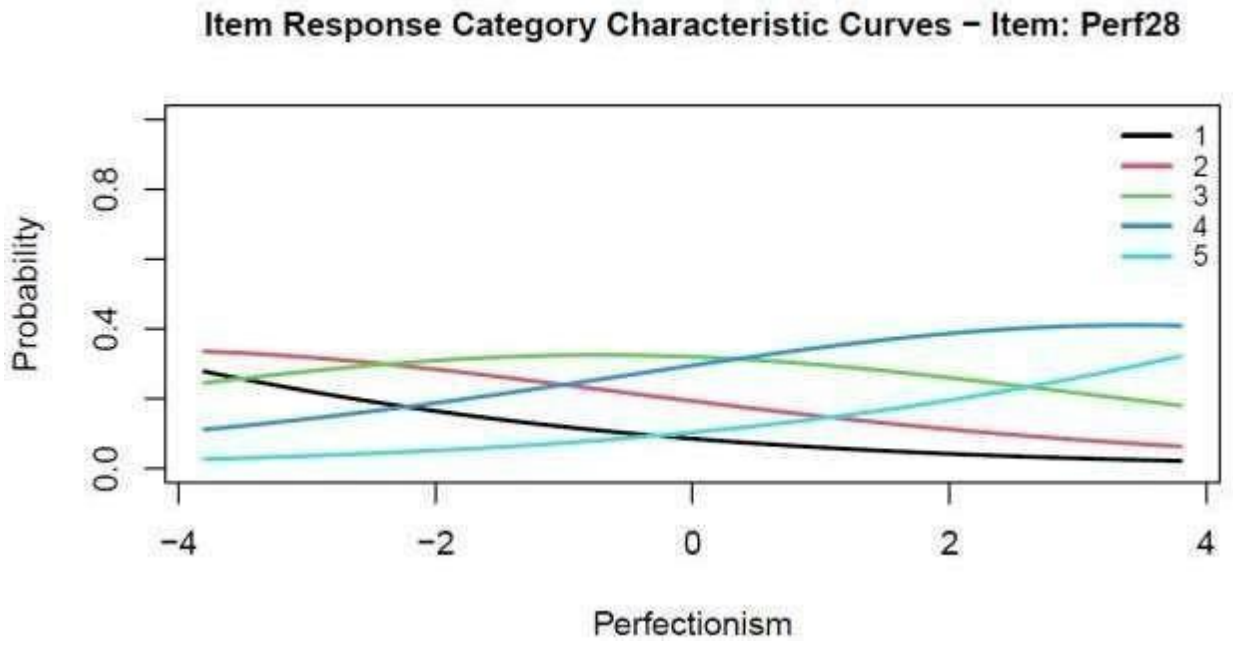

Fig. 3.30 Item Response Category Characteristic Curves of Item 28 of Perfectionism Scale

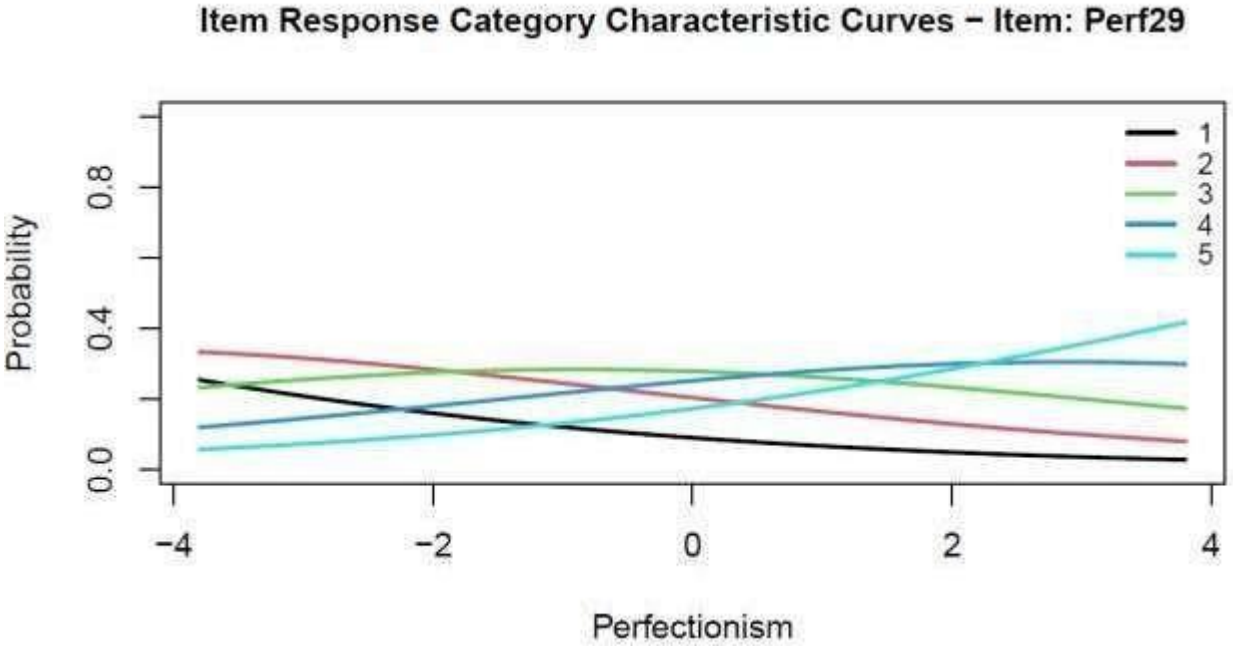

Fig. 3.31 Item Response Category Characteristic Curves of Item 29 of Perfectionism Scale

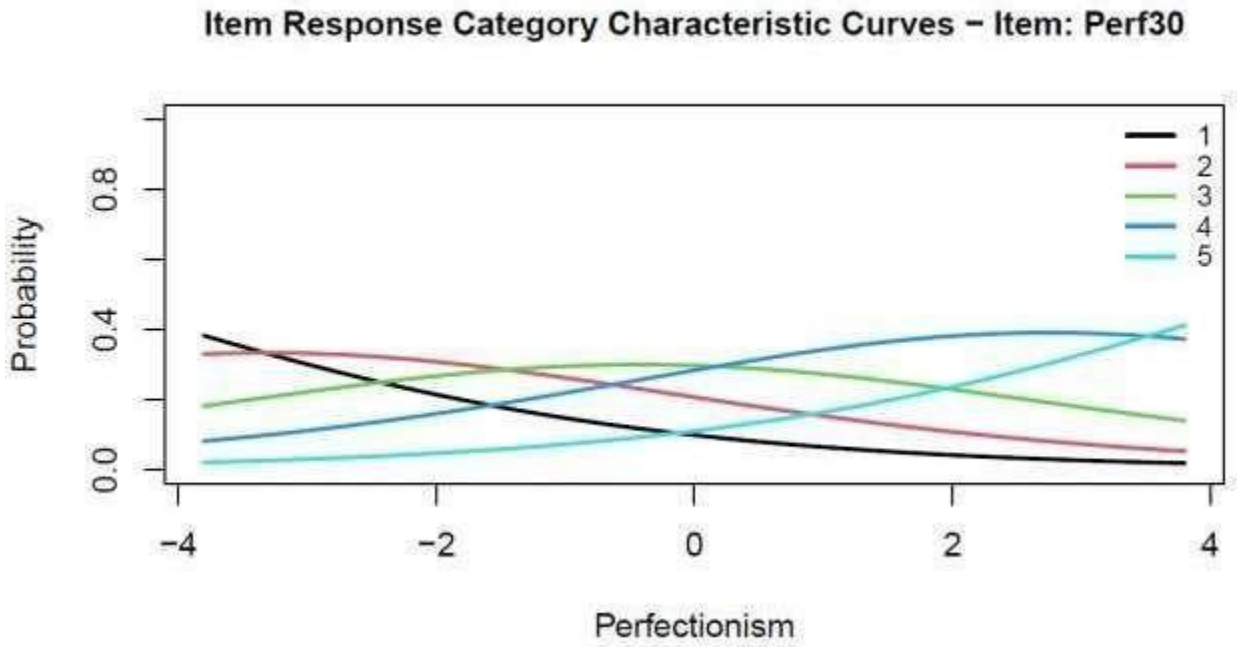

Fig. 3.32 Item Response Category Characteristic Curves of Item 30 of Perfectionism Scale

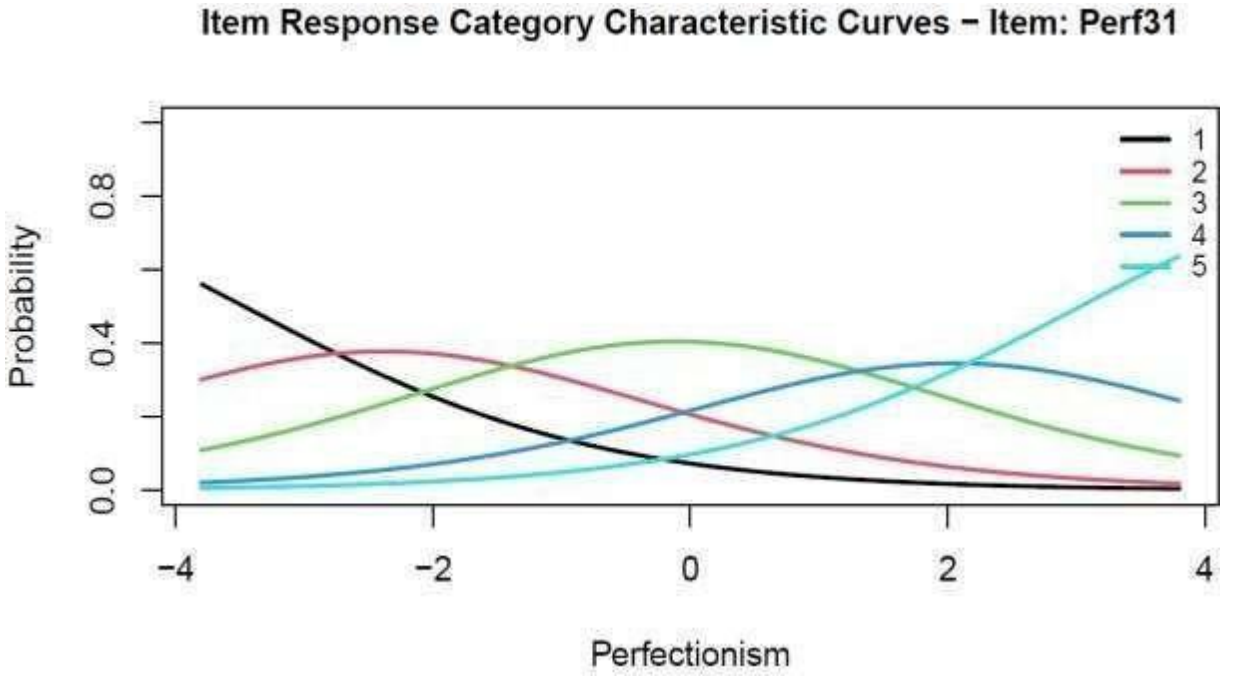

Fig. 3.33 Item Response Category Characteristic Curves of Item 31 of Perfectionism Scale

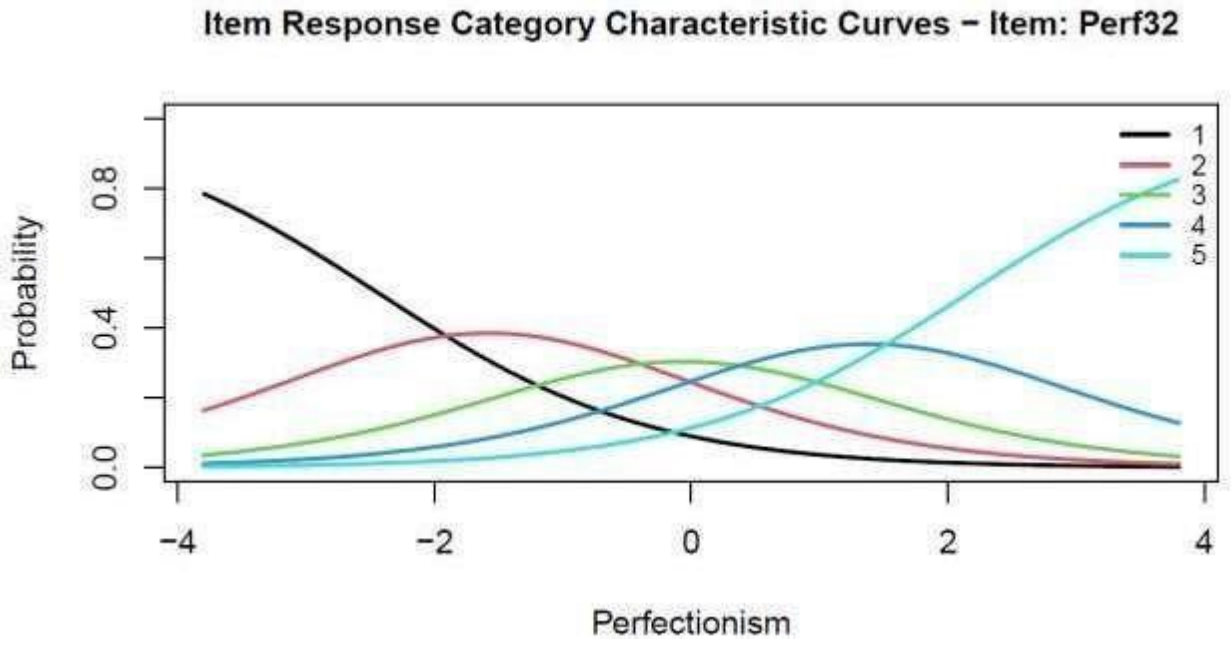

Fig. 3.34 Item Response Category Characteristic Curves of Item 32 of Perfectionism Scale

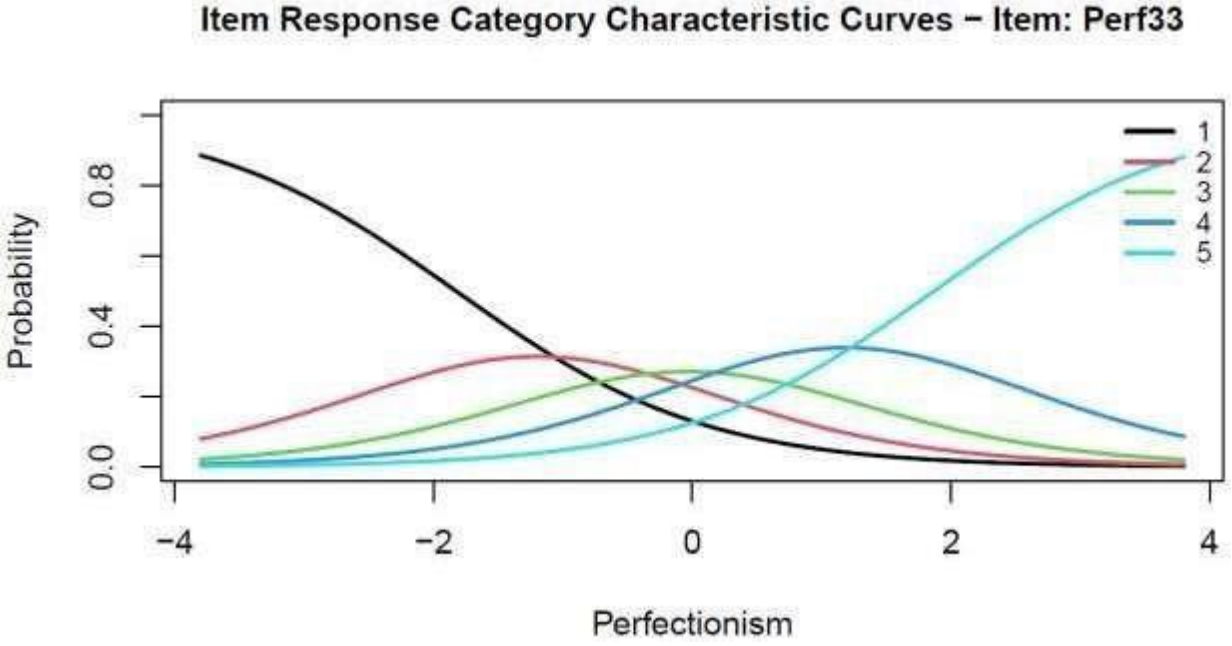

Fig. 3.35 Item Response Category Characteristic Curves of Item 33 of Perfectionism Scale

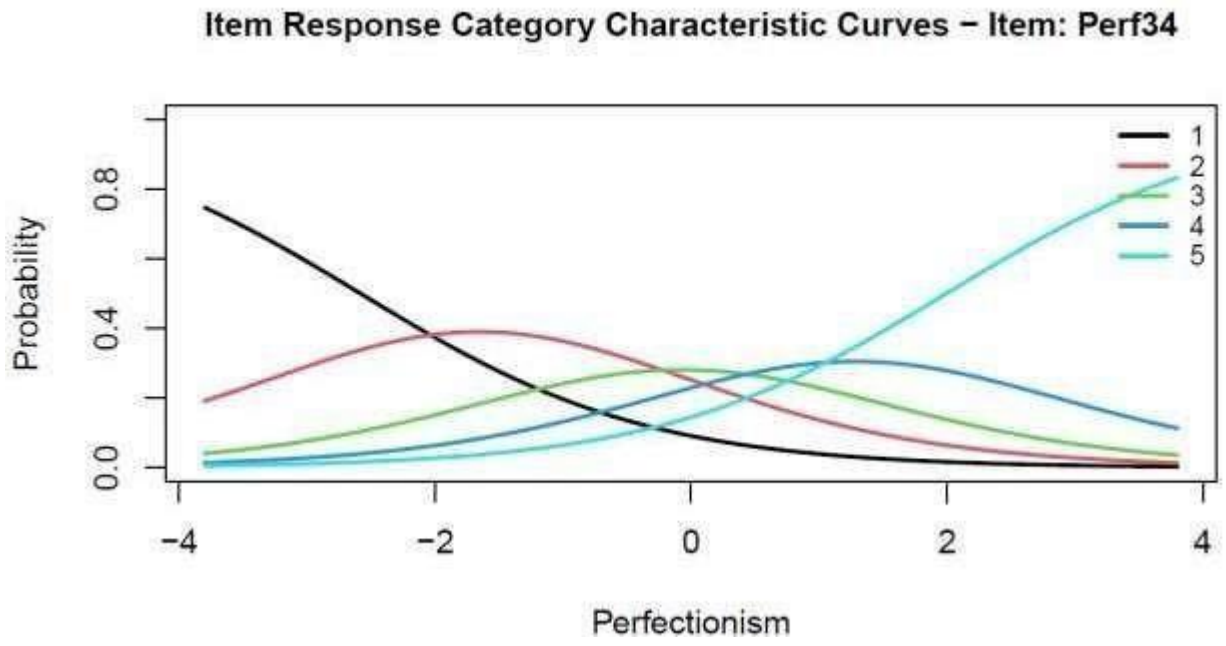

Fig. 3.36 Item Response Category Characteristic Curves of Item 34 of Perfectionism Scale

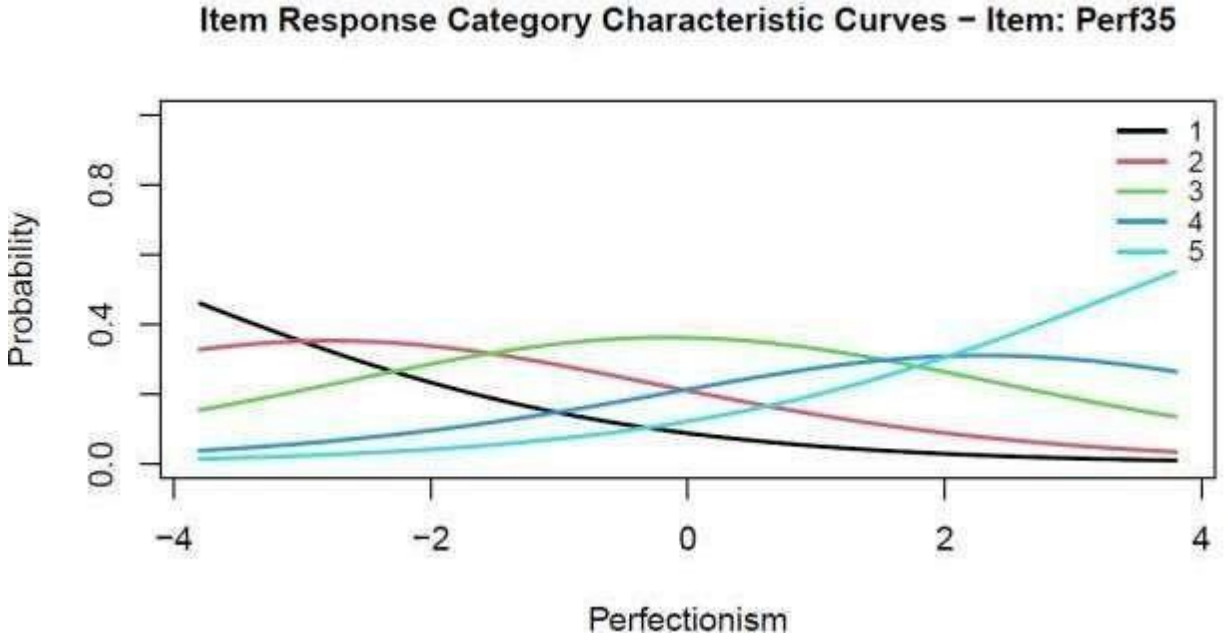

Fig. 3.37 Item Response Category Characteristic Curves of Item 35 of Perfectionism Scale

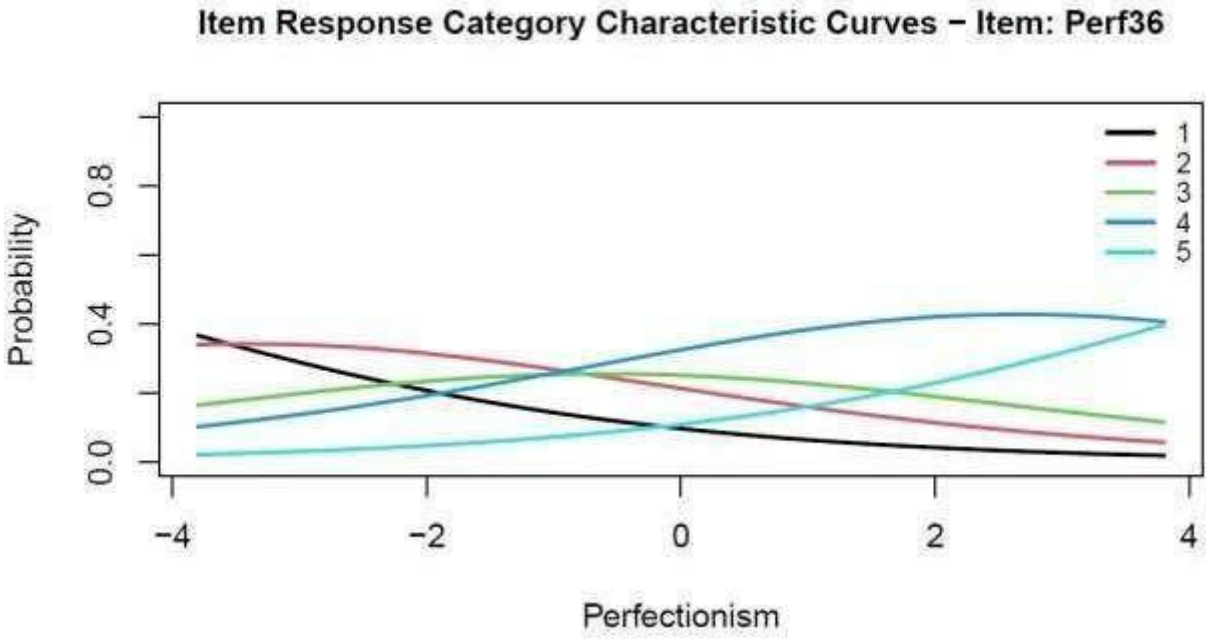

Fig. 3.38 Item Response Category Characteristic Curves of Item 36 of Perfectionism Scale

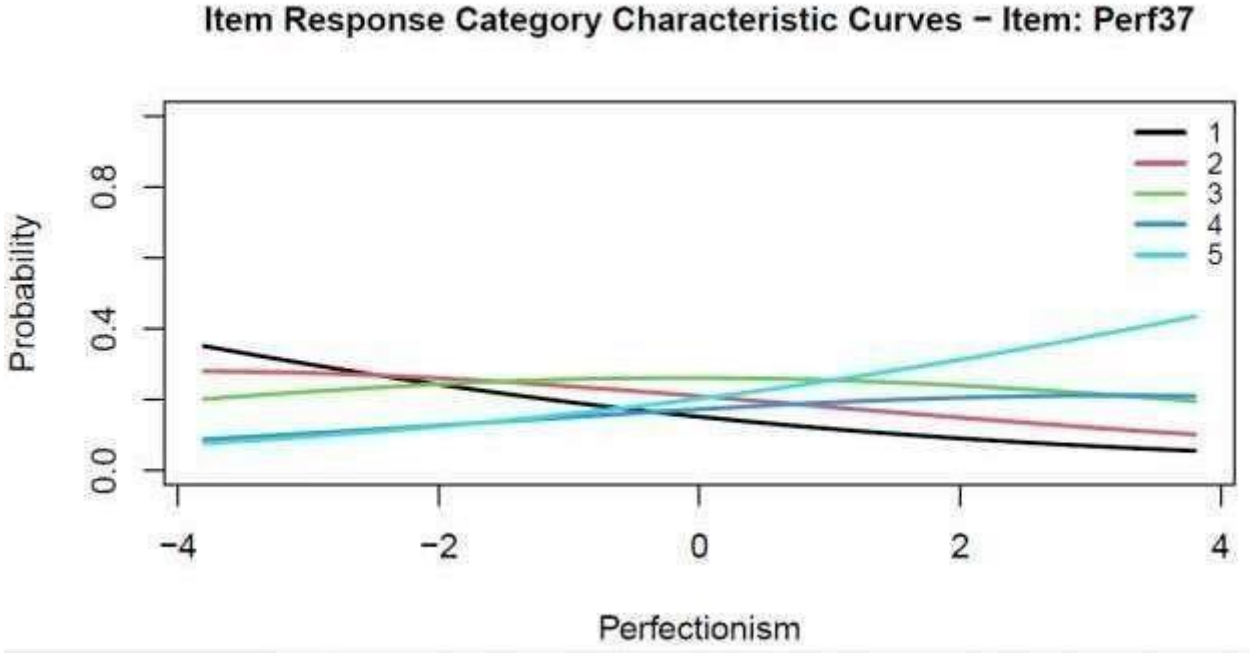

Fig. 3.39 Item Response Category Characteristic Curves of Item 37 of Perfectionism Scale

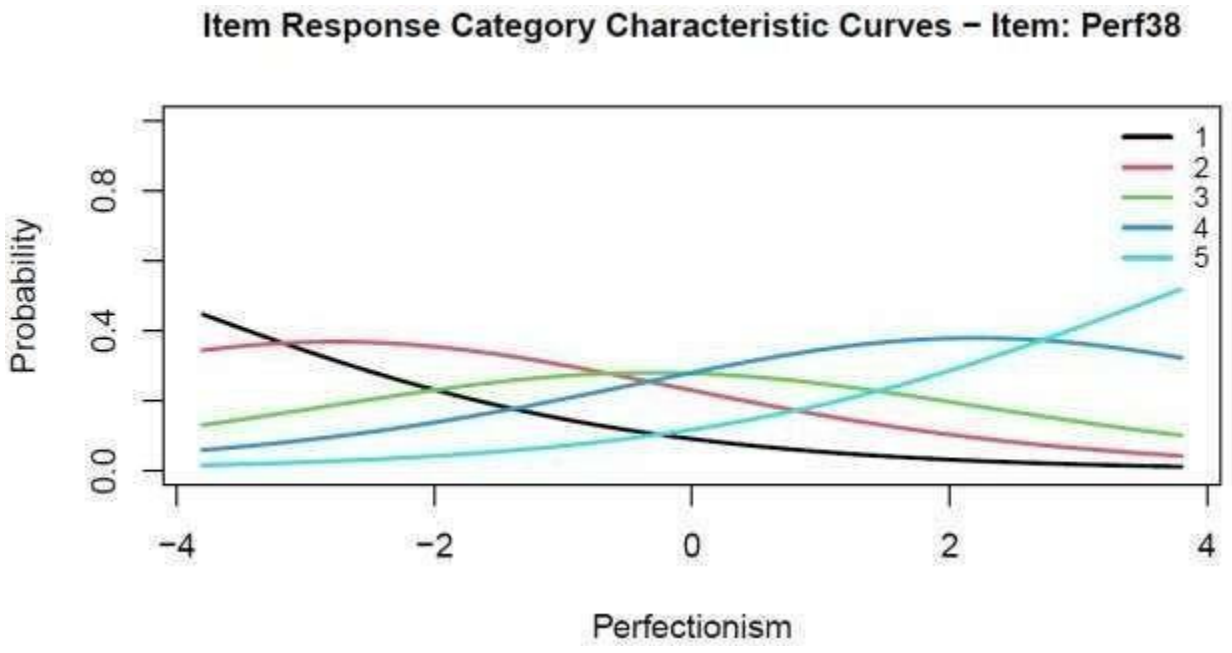

Fig. 3.40 Item Response Category Characteristic Curves of Item 38 of Perfectionism Scale

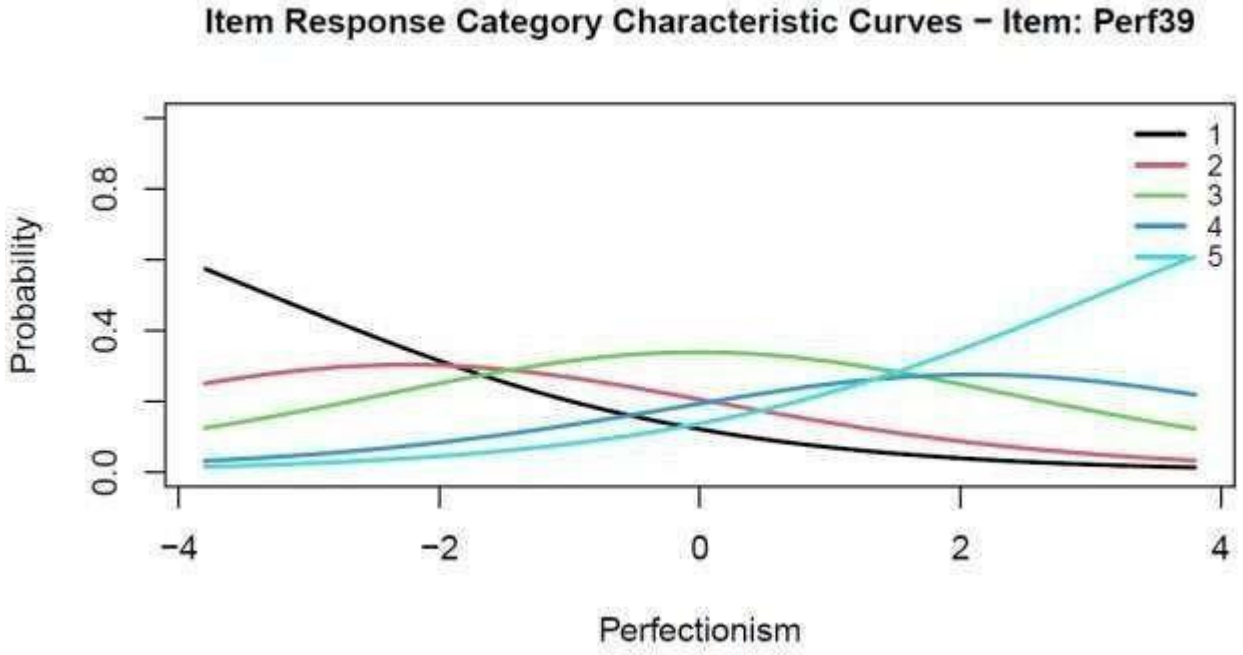

Fig. 3.41 Item Response Category Characteristic Curves of Item 40 of Perfectionism Scale

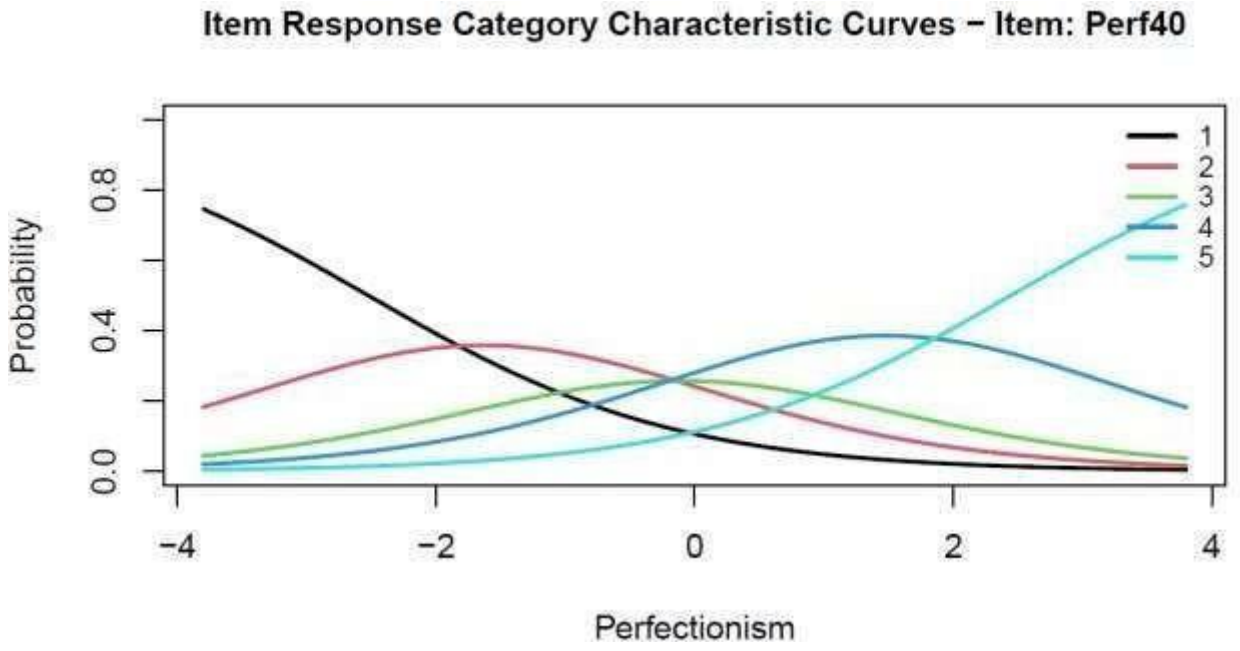

Fig. 3.42 Item Response Category Characteristic Curves of Item 40 of Perfectionism Scale

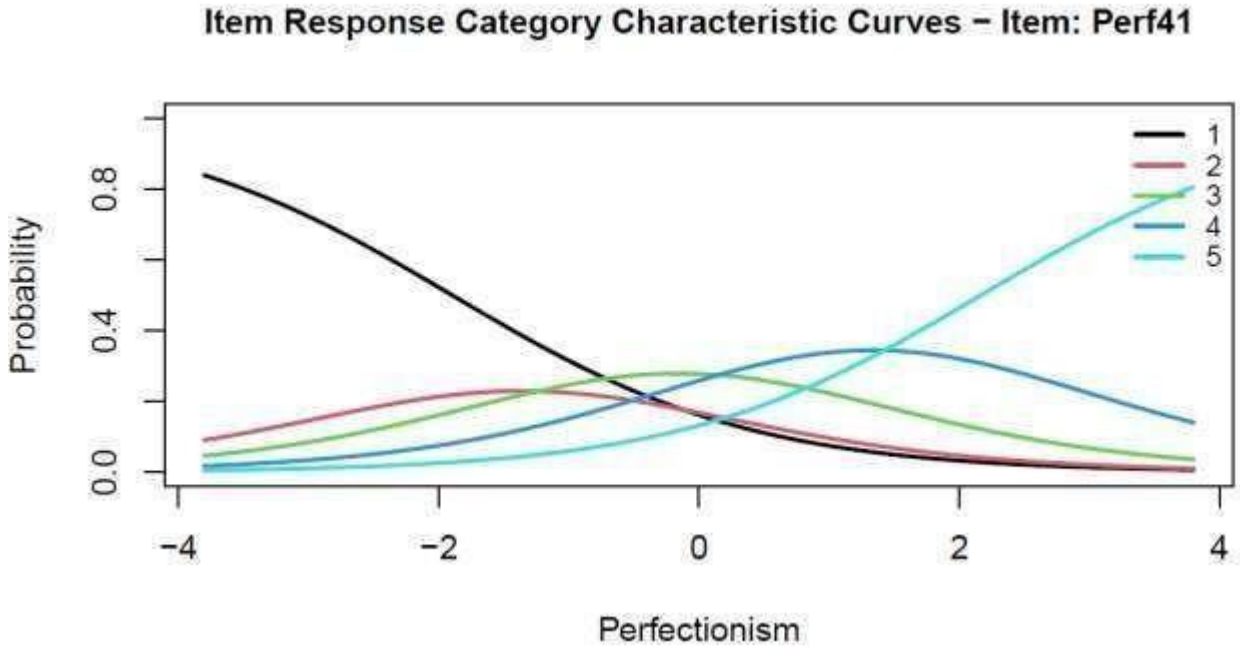

Fig. 3.43 Item Response Category Characteristic Curves of Item 41 of Perfectionism Scale

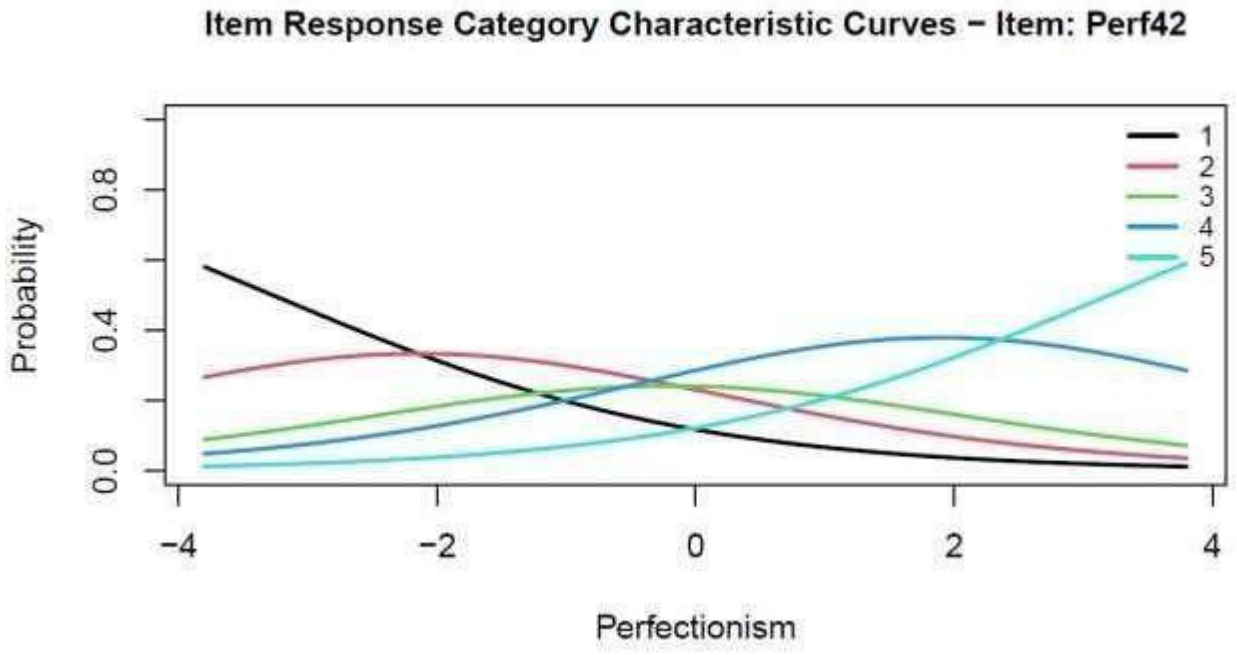

Fig. 3.44 Item Response Category Characteristic Curves of Item 42 of Perfectionism Scale

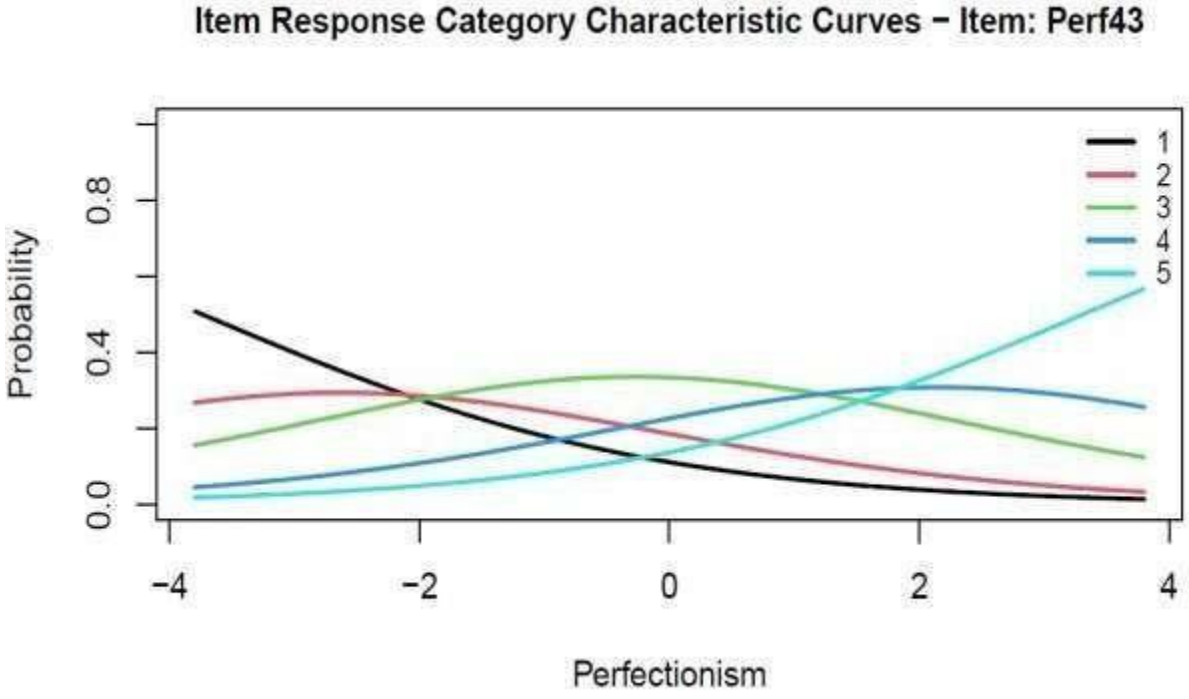

Fig. 3.45 Item Response Category Characteristic Curves of Item 43 of Perfectionism Scale

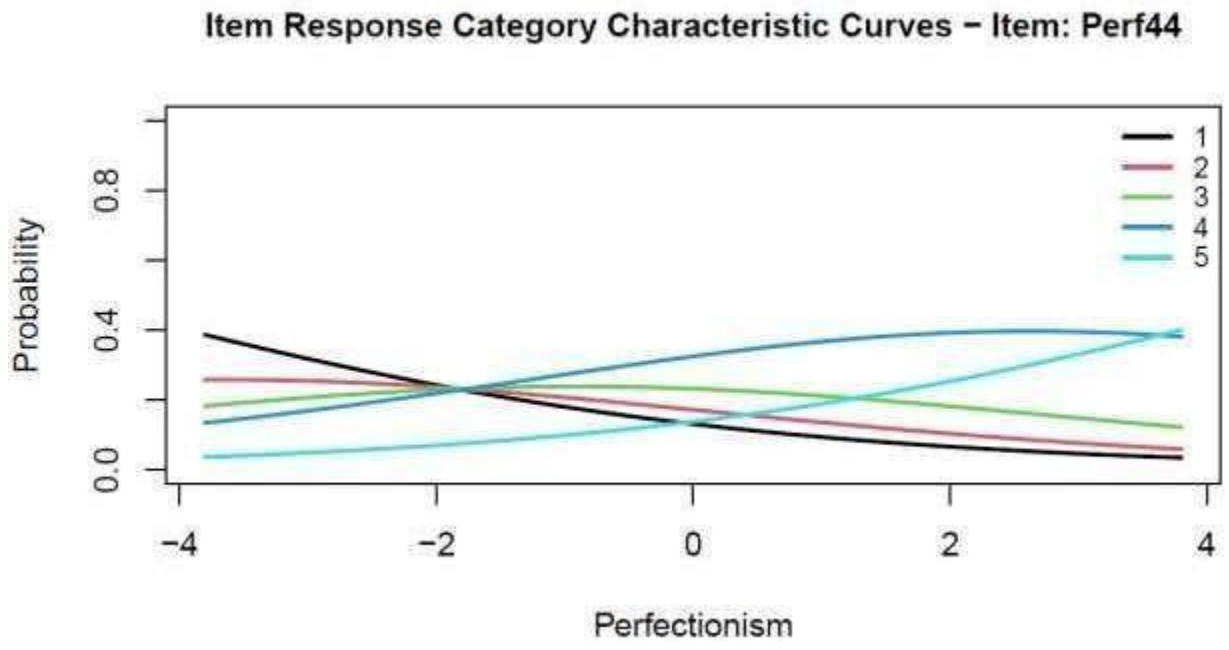

Fig. 3.46 Item Response Category Characteristic Curves of Item 44 of Perfectionism Scale

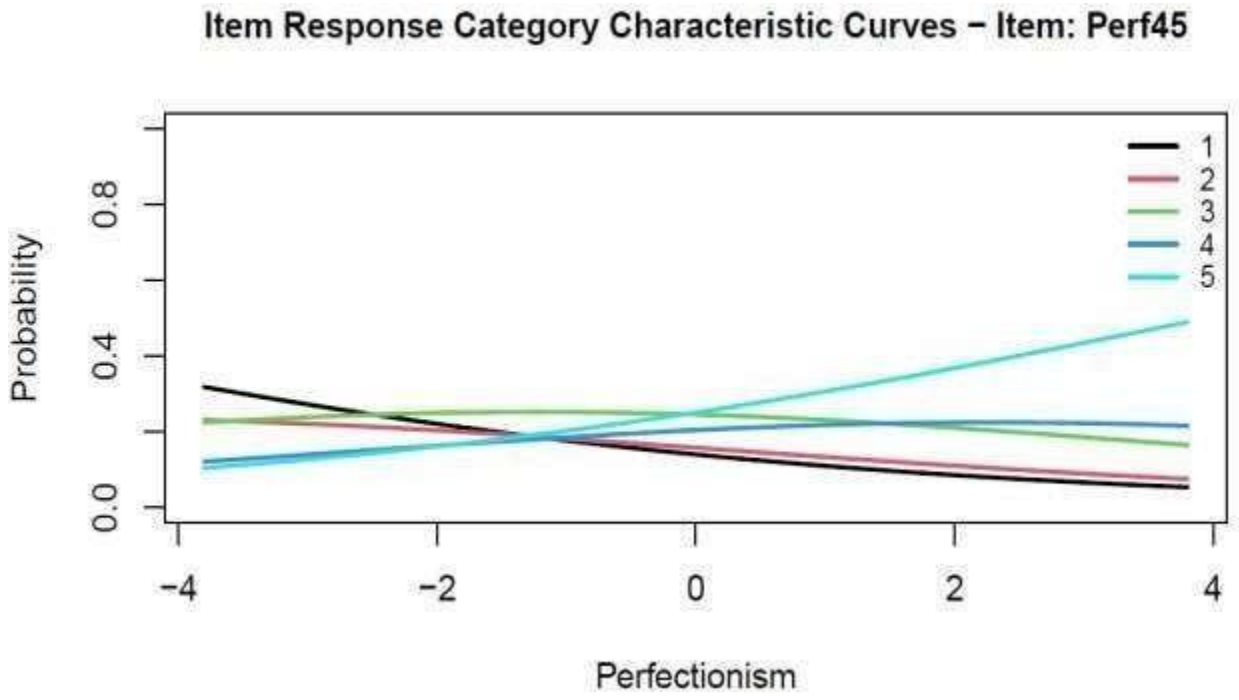

Fig. 3.47 Item Response Category Characteristic Curves of Item 45 of Perfectionism Scale

Out of the 45 items, 10 items (Item 5, 13, 21, 28, 29, 30, 36, 37, 44 and 45) showed by performing since their IRC curves slopes were steeper and lacked peaks.

> plot(Fit2, type = “IIC”, lwd = 2,cex = 0.8, legend = TRUE,cx = “topleft”, xlab = “Perfectionism”,cex.main = 1, cex.lab = 1, cex.axis = 1)

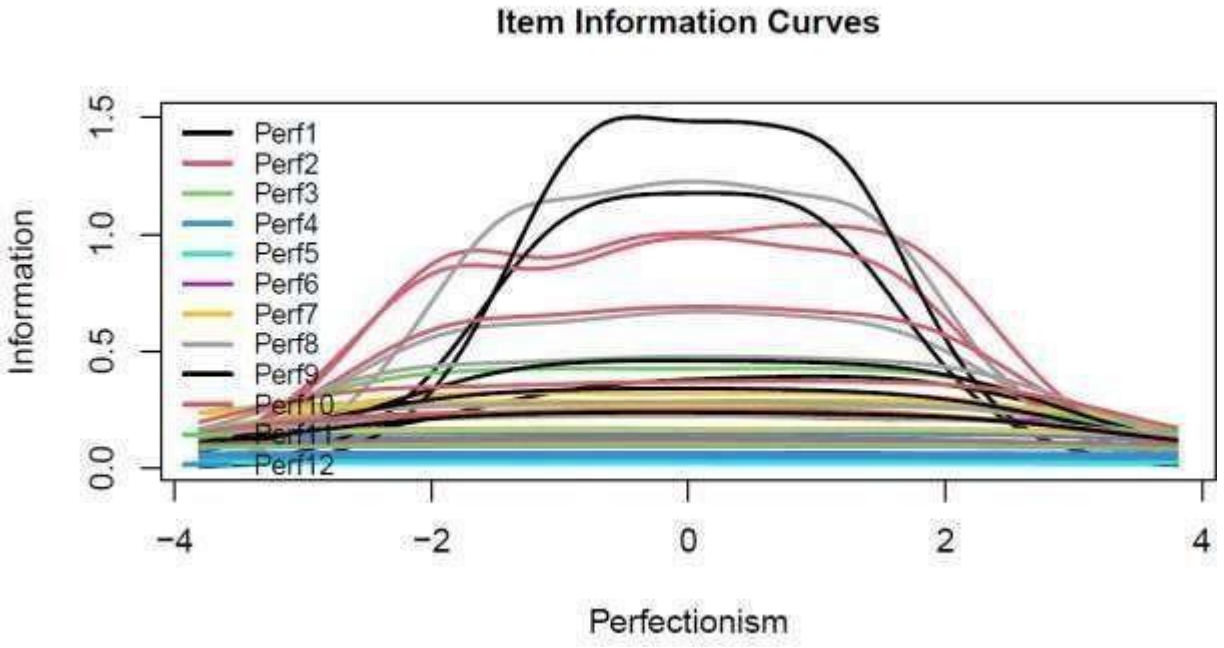

Fig. 3.48 Item Information Curves of Perfectionism Scale

> plot(Fit2, type = “TIC”, items = 0, lwd = 2, xlab = “Perfectionism”,cex.main = 1, cex.lab = 1, cex.axis = 1)

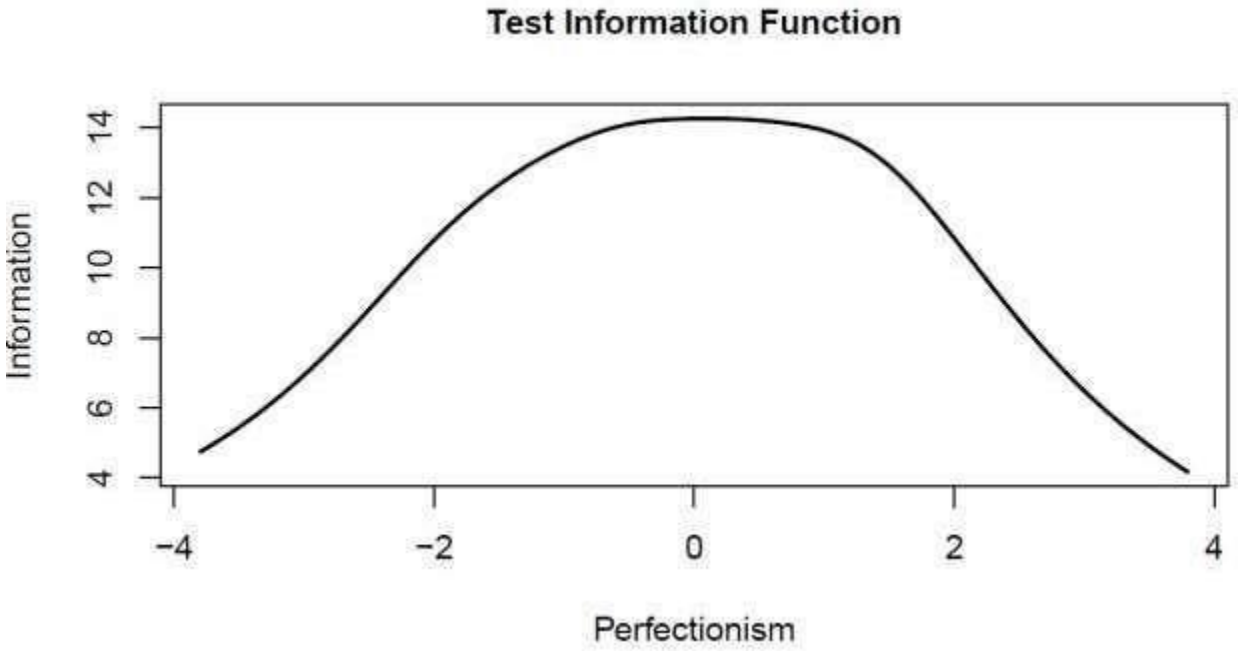

Fig. 3.49 Test Information Curve of Perfectionism Scale

> install.packages(“mirt”)

> library(mirt)

> model.pcm <- „Perfectionism = 1-45“

> results.pcm <-mirt(data = Perfectionism_300, model = model.pcm, itemtype = “Rasch”, SE=TRUE, verbose = FALSE)

> plot (results.pcm, type =“ trace“ , main = “Perfectionism”, par.settings = simpleTheme(lty = 1:4,lwd = 2), auto.key=list(points=FALSE, lines=TRUE, columns=4))

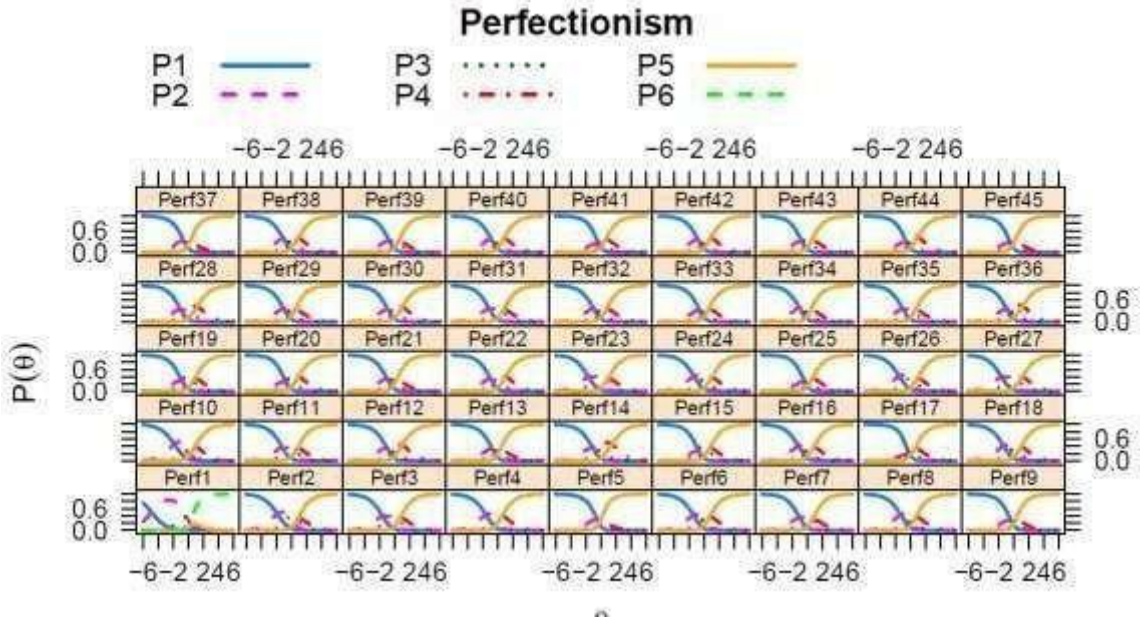

Fig. 3.50 Option Characteristic Curve of Perfectionism Scale

The IIC, TIC and OCC curves reveal that 35 of the total 45 items possess sufficient discrimination index estimate to validly remain in the scale.

3.7.1.1 Estimation of Reliability of the Big Three Perfectionism Scale:

The reliability of this psychological scale consisting of 45 items, under three dimensions of Rigid perfectionism, Self-critical perfectionism and Narcisstic perfectionism, was estimated using the ufs and MBESS packages of R software 4.2.3 version.

Along with the commonly reported Cronbach‟ s Alpha internal consistency reliability coefficient, the ordinal Cronbach‟ s alpha coefficient was also estimated for the dimensions of the perfectionism scale. This exercise was done in the light of findings in the literature that Cronbach‟ s alpha underestimates the true reliability value due to its limitations (Cronbach, 1951; Green and Yang, 2009; Raykov, 1997; Graham, 2006). Moreover, the responses obtained from the questionnaire are assumed to be interval and Pearson‟ s product moment correlation is used in the estimation of the reliability of such scales. In reality, the data obtained from the questionnaire are ordinal in nature and hence tetrachoric polychoric correlation must be used in the estimation of true reliability of these scales, which is done under the estimation of Ordinal Cronbach‟ s alpha reliability coefficients (Gadermann, Guhn and Zumbo, 2019).

Table 3.10 Reliability Estimation of the Big Three Perfectionism Scale

S.No.	Dimension	Associated Items of the Original Scale	Cronbach's Alpha	Ordinal Cronbach's Alpha
1	Rigid Perfectionism	1,10, 27, 29, 42, 16, 20, 23, 38 and 40	0.526	0.57 ~ 0.6
2	Self-Critical Perfectionism	8, 17, 24, 35, 44, 2, 11, 22, 25, 32, 6, 18, 19, 26, 5, 9, 34, 45	0.716	0.75
3	Narcisstic Perfectionism	12, 36, 37, 39. 43. 3, 7, 30, 41, 13, 14, 28, 33, 4, 15, 21, 31	0.697	0.73

The lesser estimation of true reliability of the dimensions of Perfectionism by Cronbach‟ s alpha is seen in the above table for all the three dimensions. Especially, the attenuation or drop in the estimation of reliability coefficient of Rigid perfectionism dimension is large, where the ordinal Cronbach‟ s alpha is close to the accepted benchmark of 0.6 at 0.57, while the Cronbach‟ s alpha estimate of the same dimension makes the scale appear unreliable at 0.526. The Ordinal Cronbach‟ s alpha internal consistency reliability estimates of the factors, Self-critical perfectionism and Narcisstic perfectionism were quite acceptable at 0.75 and 0.73 respectively. Hence the tool Big Three Perfectionism displayed acceptable psychometric properties.

The Rstudio codes for estimating the ordinal Cronbach‟ s alpha are displayed for tutorial purpose below:

1. Launch Rstudio
2. Install the package „ufs‟
   > install.packages("ufs")
3. Activate the package „ufs‟ to resume functioning
   > library(ufs)
4. Install the package MBESS
   > install.packages("MBESS")
5. Activate the package „MBESS‟ to resume functioning

> library(MBESS)

6. Load the data file

> library(haven)
> Perfectionism_556 <- read_sav ("D:/ Tools Validation/Perfectionism Scale – Validation/Perfectionism_556.sav") # Navigation path to the data file

> View(Perfectionism_556) # Data file name

7. Define a data frame „Rigid" to assign the items under the first dimension of the scale to it.

> Rigid <- data.frame (Perfectionism_556$Perf1, Perfectionism_556$Perf10, Perfectionism_556$Perf27, Perfectionism_556$Perf29, Perfectionism_556$Perf42, Perfectionism_556$Perf16, Perfectionism_556$Perf20, Perfectionism_556$Perf23, Perfectionism_556$Perf38, Perfectionism_556$Perf40)

8. Estimate the interval and ordinal data level reliability coefficients using the Rcode scalestructure

➢ scaleStructure(Rigid) # Results are displayed as shown below

Information about this analysis:

Dataframe: Rigid

Items: all

Observations: 556
Positive correlations: 35 out of 45 (78%)

Estimates assuming interval level:

Omega (total): 0.48
Omega (hierarchical): 0.5

Revelle" s omega (total): 0.57

Greatest Lower Bound (GLB): NA

Coefficient H: 0.64

Coefficient alpha: **0.53**
Confidence intervals:
Omega (total): [0.42, 0.55]
Coefficient alpha: [0.47, 0.58]

Estimates assuming ordinal level:

Ordinal Omega (total): 0.53

Ordinal Omega (hierarch.): 0.46

Ordinal Cronbach‟ s alpha: **0.57**

Confidence intervals:

Ordinal Omega (total): [0.47, 0.58]
Ordinal Coefficient alpha: [0.52, 0.63]

9. Estimate the reliability coefficients for the dimension Self-critical perfectionism

> Self_Critical <- data.frame(Perfectionism_556$Perf8, Perfectionism_556$Perf17, Perfectionism_556$Perf24, Perfectionism_556$Perf35, Perfectionism_556$Perf44, Perfectionism_556$Perf2, Perfectionism_556$Perf11, Perfectionism_556$Perf22, Perfectionism_556$Perf25, Perfectionism_556$Perf32, Perfectionism_556$Perf6, Perfectionism_556$Perf18, Perfectionism_556$Perf19, Perfectionism_556$Perf26, Perfectionism_556$Perf5, Perfectionism_556$Perf9, Perfectionism_556$Perf34, Perfectionism_556$Perf45)

> scaleStructure(Self_Critical)

Information about this analysis:

Dataframe: Self_Critical

Items: all

Observations: 556
Positive correlations: 113 out of 153 (74%)

Estimates assuming interval level:

Omega (total): 0.69
Omega (hierarchical): 0.17

Revelle‟ s omega (total):

0.81

Greatest Lower Bound (GLB): NA

Coefficient H: 0.85

Coefficient alpha: **0.72**
Confidence intervals:
Omega (total): [0.65, 0.73]
Coefficient alpha: [0.68, 0.75]

Estimates assuming ordinal level:

Ordinal Omega (total): 0.72

Ordinal Omega (hierarch.): 0.6

Ordinal Cronbach‟ s alpha: **0.75**
Confidence intervals:
Ordinal Omega (total): [0.69, 0.75]
Ordinal Coefficient alpha: [0.72, 0.78]

10. Estimate the reliability coefficients for the dimension Narcisstic perfectionism

> Narcisstic <- data.frame(Perfectionism_556$Perf12, Perfectionism_556$Perf36, Perfectionism_556$Perf37, Perfectionism_556$Perf39, Perfectionism_556$Perf43, Perfectionism_556$Perf3, Perfectionism_556$Perf7, Perfectionism_556$Perf30, Perfectionism_556$Perf41, Perfectionism_556$Perf13, Perfectionism_556$Perf14, Perfectionism_556$Perf28, Perfectionism_556$Perf33, Perfectionism_556$Perf4, Perfectionism_556$Perf15, Perfectionism_556$Perf21, Perfectionism_556$Perf31)

> scaleStructure(Narcisstic)

Information about this analysis:

Dataframe: Narcisstic

Items: all

Observations: 556
Positive correlations: 106 out of 136 (78%)

Estimates assuming interval level:

Omega (total): 0.66
Omega (hierarchical): 0.42
Revelle‟ s omega (total): 0.78
Greatest Lower Bound (GLB): NA
Coefficient H: 0.8
Coefficient alpha: **0.7**
Confidence intervals:
Omega (total): [0.62, 0.7]
Coefficient alpha: [0.66, 0.73]

Estimates assuming ordinal level:

Ordinal Omega (total): 0.69
Ordinal Omega (hierarch.): 0.57
Ordinal Cronbach‟ s alpha: **0.73**
Confidence intervals:

Ordinal Omega (total): [0.65, 0.72]

Ordinal Coefficient alpha: [0.69, 0.76]

The above displayed steps and codes can be replicated in Rstudio openware workspace to estimate the validity and optimal reliability estimates of the dimensions of psychological scale considering the true ordinal nature of the data collected using survey questionnaire.

3.7.2 Psychometric Properties of the College University Environment Scale:

The description of the 112 items College / University environment scale, originally developed by Dianne Lynn Williams (1997) is provided above. In order to estimate the psychometric properties of this scale in the Indian context, the "*non-parametric item response theory*" based "*Mokken Scale Analysis*" (MSA) (Mokken, 1971; Mokken and Lewis, 1982; Mokken, Lewis and Sijtsma, 1986; Molenaar, 1997) was conducted on the 16 separate dimensions sub-scales of the College University Environment Scale using the R package mokken Van der Ark (2007, 2012) in Rstudio Ver 4.2.3 on 300 subjects. The detailed output of the validation are mentioned below:

Since each of the sub-scales of the College University Environment Scale represented a unique dimension in itself, it went well with the first assumption of Mokken Scale Analysis (MSA) of the measured trait being unidimensional. The second assumption of this technique monotonicity implies that as a person possesses more of a trait Θ, his or her scores would also be towards the higher end of the scale. The third assumption is that of local independence under which it is necessary that items of a dimension must covary positively with individual differences of the measured trait in the subjects. Under these three assumptions, MSA allows validation of psychological tools based on the responses given by the persons or subjects to the ordinal scale responses of items (Sijtsma and van der Ark, 2016). The first step in conducting MSA is to estimate whether a given set of items under a unidimensional construct come together to form a single entity, through the concept of scalability. The minimum quantitative benchmark of scalability coefficient is 0.3. Items forming part of a unidimensional factor have scalability coefficient above this benchmark. Such scalable items in a scale are identified through software known as automated item

selection procedure or aisp in Mokken scale analysis. The extent of scalability of the retained scalable items is expressed through the coefficient H. Items then need to display the essential property of montonicity with its coefficients be higher than 0.3 as well for each item. Finally, the reliability coefficients of the items of a scale are estimated using alpha, Guttman lambda, MS coefficient and Latent Class Reliability coefficients. In this way, Mokken scale analysis provides a lesser restrictive assumptions based tool validation technique which is sample/population/ context of data collection based though.

In this present analysis of college university environment scale, 11 out of the 16 sub-scale of the instrument, displayed acceptable scalability, homogeneity and montonicity, apart from being reliable measures of their respective dimensions. The list of unscalable 10 items out of 112 items, belonging to the dimensions of Technical resources, Professor‟ s evaluation, curriculum, social and academic support and influence are shown below:

Table 3.11 Reliability Estimates of College University Environment Scale:

	College / University Environment Scale Dimensions		Validity Estimates			Reliability Estimates			
		Retained Items	Automated Item Selection Procedure (aisp)	Scale Coefficient Coef H	Essential Condition of Monotonicity of Items	MS	α	λ	LCRC
1	Financial	1	All seven items form a single factor	0.37	0.32	0.78	0.777	0.782	0.8
		2			0.44				
		3			0.45				
		4			0.33				
		5			0.33				
		6			0.38				
		7			0.35				
2	Physical	1	All seven items form a single factor	0.4	0.31	0.80	0.804	0.809	0.84
		2			0.47				
		3			0.49				
		4			0.4				
		5			0.33				
		6			0.44				
		7			0.39				
3	Procedures	1	All seven items form	0.369	0.31	0.78	0.778	0.783	0.712
		2			0.44				

		3	a single factor		0.44				
		4			0.34				
		5			0.34				
		6			0.4				
		7			0.32				
4	Organization	1	All seven items form a single factor	0.411	0.4	0.82	0.799	0.805	0.801
		2			0.44				
		3			0.42				
		4			0.4				
		5			0.48				
		6			0.45				
		7			0.3				
5	Teaching Facilitation	1	All seven items form a single factor	0.485	0.44	0.85	0.848	0.849	0.858
		2			0.57				
		3			0.51				
		4			0.45				
		5			0.47				
		6			0.54				
		7			0.44				
6	Technical*	1	Item 4 showed non-homogeneity and hence	0.409	0.4	0.79	0.781	0.784	0.706
		2			0.47				
		3			0.39				
		5			0.36				
		6			0.46				

		7	was deleted		0.38				
7	Professor‟s Evaluation*	1	Item 4 and Item 5 showed non-homogeneity and hence were deleted	0.381	0.42	0.73	0.72	0.725	0.726
		2			0.44				
		3			0.31				
		6			0.35				
		7			0.38				
8	Student‟s Evaluation	1	All seven items form a single factor	0.389	0.36	0.79	0.795	0.8	0.8
		2			0.47				
		3			0.45				
		4			0.34				
		5			0.35				
		6			0.4				
		7			0.36				
9	Curriculum*	1	Item 4 showed non-homogeneity and hence was deleted	0.426	0.4	0.78	0.788	0.791	0.8
		2			0.53				
		3			0.46				
		5			0.36				
		6			0.45				
		7			0.37				
10	Learning Styles	1	All seven items form a single	0.454	0.42	0.83	0.832	0.835	0.841
		2			0.49				
		3			0.53				

		4	factor		0.4				
		5			0.41				
		6			0.49				
		7			0.45				
11	Effectiveness	1	All seven items form a single factor	0.379	0.34	0.79	0.786	0.79	0.8
		2			0.46				
		3			0.45				
		4			0.34				
		5			0.33				
		6			0.4				
		7			0.34				
12	Social and Academic Support*	1	Item 4 and Item 5 showed non-homogeneity and hence were deleted	0.37	0.39	0.72	0.7	0.717	0.636
		2			0.5				
		3			0.31				
		6			0.35				
		7			0.32				
13	Influence*	1	Items 4,5,6 and 7 showed non-homogeneity and hence	0.494	0.51	0.72	0.691	0.705	0.507
		2			0.58				
		3			0.39				

			were deleted						
14	Social Activities and Recreation	1	All seven items form a single factor	0.394	0.34	0.79	0.796	0.799	0.816
		2			0.47				
		3			0.48				
		4			0.33				
		5			0.36				
		6			0.44				
		7			0.36				
15	Scholarly	1	All seven items form a single factor	0.395	0.31	0.8	0.798	0.802	0.801
		2			0.47				
		3			0.47				
		4			0.36				
		5			0.38				
		6			0.44				
		7			0.35				
16	Job/Career	1	All seven items form a single factor	0.394	0.34	0.8	0.793	0.799	0.809
		2			0.48				
		3			0.46				
		4			0.34				
		5			0.38				
		6			0.43				
		7			0.33				

Table 3.12: List of Unscalable Items of the College University Environment Scale:

S.No.	Dimension of College University Environment Scale	Unscalable Items
1	Technical resources	4
2	Professor‟ s Evaluation	4,5
3	Curriculum	4
4	Social and Academic Support	4,5
5	Influence	4,5,6 and 7

The R codes used to conduct Mokken scale analysis are shared for tutorial purpose below:

1. Launch Rstudio
2. Install the package *mokken*

   > install.packages(“mokken”)
3. Activate the package mokken for commencing its functioning

   > library(mokken)
4. Load data of the first dimension

   > library(haven)

   > Financial_300 <- read_sav(“D:/7. Ph.D. Supervision/5. Mandeep Kaur/Tools Validation/Learning Envieonment Scale – Validation/Financial_300.sav”)

   > View(Financial_300)
5. Define a data.frame to assign the items of the sub-scale *Financial* to a variable with same name

   > Financial <- data.frame (Financial_300$Financial1, Financial_300$Financial2, Financial_300$Financial3, Financial_300$Financial4, Financial_300$Financial5, Financial_300$Financial6, Financial_300$Financial7)

6. Conduct Automated Item Selection Procedure for the default benchmark scaling coefficient of 0.3

```
> aisp (Financial)
                                0.3
Financial_300.Financial1   1
Financial_300.Financial2   1
Financial_300.Financial3   1
Financial_300.Financial4   1
Financial_300.Financial5   1
Financial_300.Financial6   1
Financial_300.Financial7   1
```

7. Estimate scaling coefficient H

```
>              coefH(Financial)
$Hij
                                Financial_300.Financial1 se
Financial_300.Financial1
 Financial_300.Financial2  0.636              (0.050)
 Financial_300.Financial3  0.308              (0.067)
 Financial_300.Financial4  0.041              (0.074)
 Financial_300.Financial5  0.342              (0.068)
 Financial_300.Financial6  0.281              (0.066)
 Financial_300.Financial7  0.360              (0.060)
                                Financial_300.Financial2  se
 Financial_300.Financial1  0.636              (0.050)
 Financial_300.Financial2
 Financial_300.Financial3  0.462              (0.066)
 Financial_300.Financial4  0.293              (0.068)
 Financial_300.Financial5  0.354              (0.068)
 Financial_300.Financial6  0.447              (0.072)
 Financial_300.Financial7  0.484              (0.055)
                                Financial_300.Financial3 se
Financial_300.Financial1  0.308              (0.067)
Financial_300.Financial2  0.462              (0.066)
```

Financial_300.Financial3		
Financial_300.Financial4	0.539	(0.058)
Financial_300.Financial5	0.395	(0.066)
Financial_300.Financial6	0.414	(0.067)
Financial_300.Financial7	0.554	(0.052)
	Financial_300.Financial4	se
Financial_300.Financial1	0.041	(0.074)
Financial_300.Financial2	0.293	(0.068)
Financial_300.Financial3	0.539	(0.058)
Financial_300.Financial4		
Financial_300.Financial5	0.363	(0.059)
Financial_300.Financial6	0.455	(0.060)
Financial_300.Financial7	0.311	(0.069)
	Financial_300.Financial5	se
Financial_300.Financial1	0.342	(0.068)
Financial_300.Financial2	0.354	(0.068)
Financial_300.Financial3	0.395	(0.066)
Financial_300.Financial4	0.363	(0.059)
Financial_300.Financial5		
Financial_300.Financial6	0.397	(0.060)
Financial_300.Financial7	0.174	(0.065)
	Financial_300.Financial6	se
Financial_300.Financial1	0.281	(0.066)
Financial_300.Financial2	0.447	(0.072)
Financial_300.Financial3	0.414	(0.067)
Financial_300.Financial4	0.455	(0.060)
Financial_300.Financial5	0.397	(0.060)
Financial_300.Financial6		
Financial_300.Financial7	0.308	(0.064)
	Financial_300.Financial7	se
Financial_300.Financial1	0.360	(0.060)
Financial_300.Financial2	0.484	(0.055)
Financial_300.Financial3	0.554	(0.052)
Financial_300.Financial4	0.311	(0.069)

Financial_300.Financial5	0.174	(0.065)
Financial_300.Financial6	0.308	(0.064)
Financial_300.Financial7		

$Hi

Item	H	se
Financial_300.Financial1	0.319	(0.044)
Financial_300.Financial2	0.442	(0.046)
Financial_300.Financial3	0.449	(0.046)
Financial_300.Financial4	0.334	(0.048)
Financial_300.Financial5	0.333	(0.047)
Financial_300.Financial6	0.382	(0.048)
Financial_300.Financial7	0.355	(0.043)

$H

Scale H	**se**
0.370	**(0.042)**

8. Check for the display of montonicity by the items of the scale

```
> monotonicity.list <- check.monotonicity(Financial)
> summary(monotonicity.list)
```

ItemH	#ac	#vi	#vi/#ac	maxvi	sum	sum/#ac
Financial_300.Financial1	0.32	12	0	0.00	0.00	0.00	0.0000
Financial_300.Financial2	0.44	18	1	0.06	0.08	0.08	0.0042
Financial_300.Financial3	0.45	18	2	0.11	0.08	0.15	0.0082
Financial_300.Financial4	0.33	24	8	0.33	0.32	1.11	0.0460
Financial_300.Financial5	0.33	22	5	0.23	0.20	0.50	0.0228
Financial_300.Financial6	0.38	11	1	0.09	0.06	0.06	0.0059
Financial_300.Financial7	0.35	24	4	0.17	0.19	0.67	0.0277

	zmax	#zsig	crit
Financial_300.Financial1	0.00	0	0
Financial_300.Financial2	0.87	0	18
Financial_300.Financial3	1.22	0	30
Financial_300.Financial4	3.96	4	179

Financial_300.Financial5 2.94 1 102

Financial_300.Financial6 1.37 0 27

Financial_300.Financial7 2.85 4 122

9. Estimate Reliability of the scale

> check.reliability(Financial, LCRC = TRUE)

$MS

[1] 0.7869418

$alpha

[1] 0.7773092

$lambda.2

[1] 0.7827571

$LCRC

[1] 0.8003867

The results obtained from the above codes and analysis establishes the college university environment scale as a valid and reliable measure to comprehensively estimate the learning environment variable at tertiary level.

NOTE: While the summation of all the items in the scales of the variables Learning environment, Perfectionism and self-handicapping, provide their total estimates, the scale for Causal attributional beliefs treats the three dimensions as separate entities and hence, the summation of the respective items of these dimensions provide their total estimate, and the coverage of these dimensions, complete any analysis pertaining to the variable Causal attributional beliefs. The application of the statistical techniques as mentioned below, to meet the objectives of this study, is done accordingly.

3.7 STATISTICAL TECHNIQUES

The following descriptive and inferential statistics are used for conducting tool validation and data analysis:

- Descriptive Statistics using Mean, Standard Deviation, Skewness and Kurtosis, Pearson's Product Moment Correlation.
- Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)
- Non-parametric Item Response Theory (NIRT) based Mokken Scale Analysis (MSA) for tool validation
- Inferential Statistics using t-test, F-test (ANOVA)
- Path Analysis using Simple Linear Regression
- Multiple Linear Regression Analysis
- Commonality or Element Analysis

CONCLUSION

As per the details mentioned in the above chapter the final data for this research study was collected from the educational institutions of Majha, Malwa and Doaba regions of Punjab state India was gathered by the investigator. In the upcoming chapter, Data Analysis, the mentioned statistical techniques of this chapter will be applied on the gathered data and the meaning of the findings will be shared in details.

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATIONS

4.1- INTRODUCTION

This chapter describes in details the results found after administering the statistical data analysis techniques mentioned in the previous chapter on the collected data towards the attainment of the research objectives. It would begin with description of the different characteristics of the sample data using descriptive statistics research objectives-wise.

ANALYSIS OF THE DATA

4.2.1 – Descriptive Analysis – Demographic Variable-wise:

Table 4.1 DESCRIPTIVE ANALYSIS OF DEMOGRAPHICAL VARIABLES

Gender		
	Count	**Percent**
Male	282	50.72
Female	274	49.28
Total	556	100
Region		
	Count	**Percent**
Doaba	183	32.91
Malwa	190	34.17
Majha	183	32.91
Total	556	100
Stream		
	Count	**Percent**
Science	222	39.92
Arts	182	32.73
Commerce	152	27.33
Total	556	100

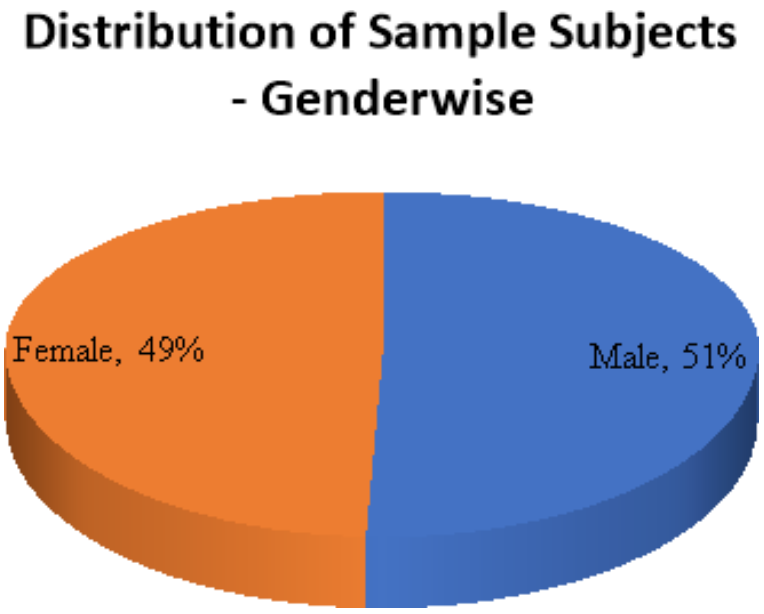

Fig. 4.1 Distribution of the Sample Subjects with respect to Gender

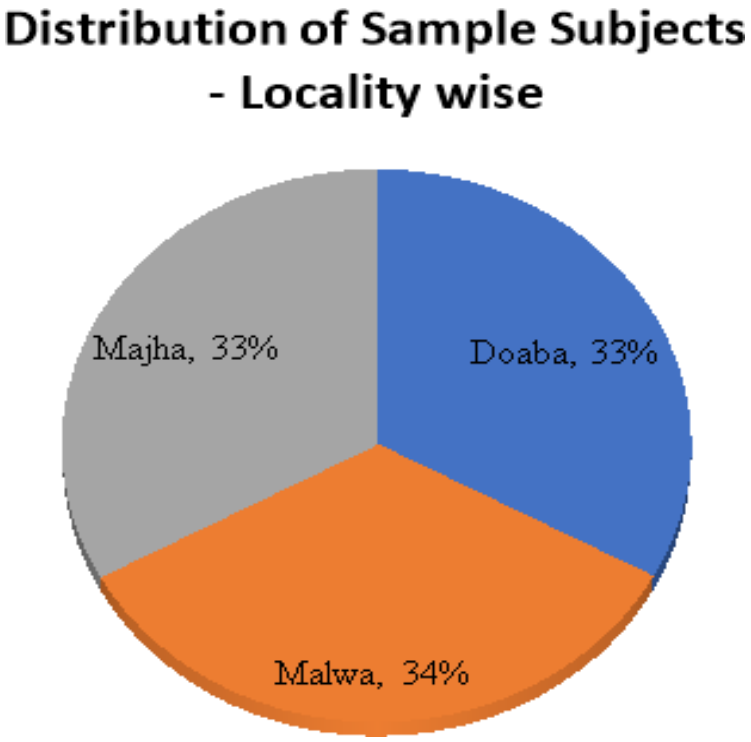

Fig4.2 Distribution of the Sample Subjects with respect to Locality

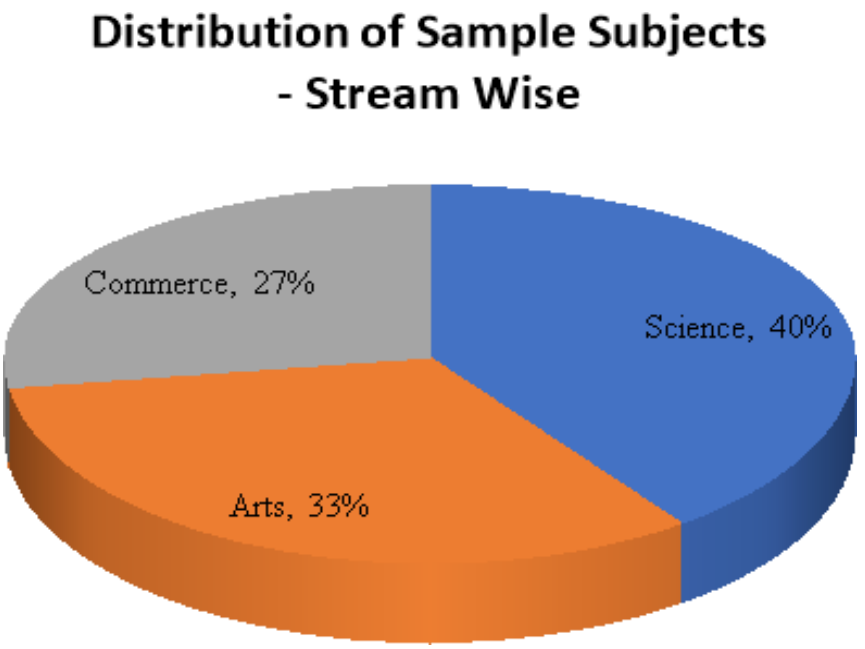

Fig. 4.3 Distribution of the Sample Subjects with respect to

Stream Interpretation

Nearly equal number of students exists gender-wise in the sample. Male students are slightly higher than the female students. Region-wise, most of the students are from the Malwa region, followed by equal number of students from Doaba and Majha regions. Science students are more in the sample, followed by arts and commerce students.

4.2.2 Data Analysis of Objective 1

Objective 1: To explore the self-handicapping tendency of the higher education students.

Under the measures of descriptive statistics, techniques estimating the measures of Central Tendency, Dispersion and Asymmetry are presented below in the form of "*Mean, Standard Deviation, Skewness, Kurtosis and Standard Error*".

Table 4.2.2: Summary of Descriptive Statistics Estimation of Self-Handicapping Tendency in Higher Education Students:

"Descriptive Statistics"							
"Variable"	**"N"**	**"Mean"**	**"Std. Deviation "**	**"Skewness"**		**"Kurtosis"**	
				"Statistic "	**"Std. Error"**	**"Statistic "**	**"Std. Error"**
Self-Handicapping Tendency	556	2.1950	.36548	-.019	.104	2.829	.207

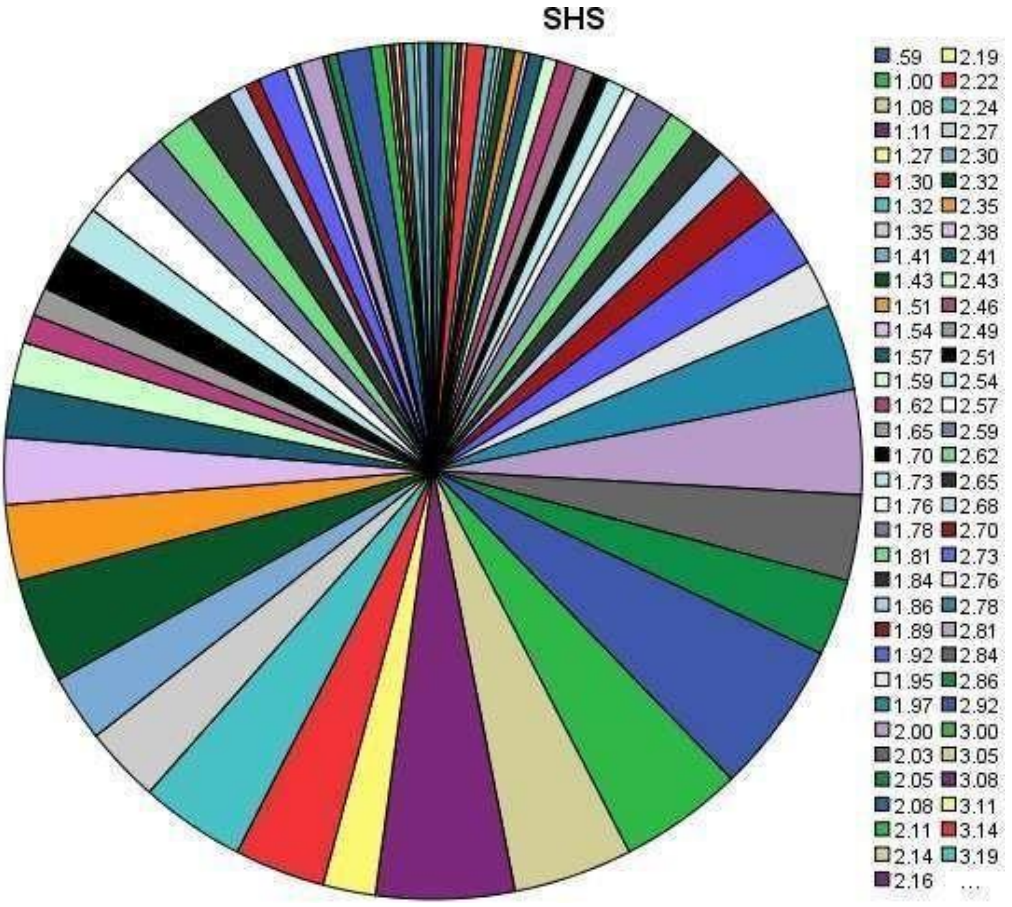

Fig. 4.4: Pie-chart of the Frequency of Self-Handicapping Tendency Level Scores Interpretation: The frequencies of the scores 2.86, 2.92 and 3.00 of the variable self- handicapping tendency are the highest, indicating the presence of this variable in the subjects at the higher end of the scale. The mean Self-handicapping tendency of higher secondary students is found to be 2.195, which is less than the average score of 3 in the scale and hence implies that the undesirable variable is satisfactorily present in lesser measures in the sample subject. The extent of dispersion in the data, estimated using standard deviation is at 0.365. Skewness and Kurtosis in the data of this variable are found to be under limits at – 0.019 and 0.289 respectively. For the data to be considered symmetric and normal, the skewness and kurtosis must be within the limits of - 2 to +2 and from -7 to +7 (Hair et al., 2010; Bryne, 2010).

4.2.3. Data Analysis of Objective 2:

Objective 2: To study Causal Attributional Beliefs, Learning Environment and perfectionism of the higher education students.

Table 4.2.3: Summary of Descriptive Statistics Estimation of Causal Attributional Beliefs, Learning Environment and Perfectionism in Higher Education Students:

"Descriptive Statistics"							
Variable	**"N"**	**"Mean"**	**"Std. Deviation"**	**"Skewness"**		**"Kurtosis"**	
				"Statistic"	**"Std. Error"**	**"Statistic"**	**"Std. Error"**
Causal Attributional Beliefs – Locus of Causality	556	8.092	0.662	-0.926	0.104	2.001	0.207
Causal Attributional Beliefs – External Control	556	8.176	0.736	-1.5	0.104	4.282	0.207
Causal Attributional Beliefs - Stability	556	8.27	0.729	-1.99	0.104	7.69	0.207
Causal Attributional Beliefs – Personal Control	556	8.252	0.634	-0.907	0.104	1.055	0.207
Learning Environment	556	2.344	0.267	0.052	0.104	2.383	0.207
Perfectionism	556	3.142	0.436	0.804	0.104	7.960	0.207

4.2.4. Data Analysis of Objective 2:

Objective 2: To study Causal Attributional Beliefs, Learning Environment and perfectionism of the higher education students.

Table 4.2.3: Summary of Descriptive Statistics Estimation of Causal Attributional Beliefs, Learning Environment and Perfectionism in Higher Education Students:

"Descriptive Statistics"							
Variable	**"N"**	**"Mean"**	**"Std. Deviation"**	**"Skewness"**		**"Kurtosis"**	
				"Statistic"	**"Std. Error"**	**"Statistic"**	**"Std. Error"**
Causal Attributional Beliefs – Locus of Causality	556	8.092	0.662	-0.926	0.104	2.001	0.207
Causal Attributional Beliefs – External Control	556	8.176	0.736	-1.5	0.104	4.282	0.207
Causal Attributional Beliefs - Stability	556	8.27	0.729	-1.99	0.104	7.69	0.207
Causal Attributional Beliefs – Personal Control	556	8.252	0.634	-0.907	0.104	1.055	0.207
Learning Environment	556	2.344	0.267	0.052	0.104	2.383	0.207
Perfectionism	556	3.142	0.436	0.804	0.104	7.960	0.207

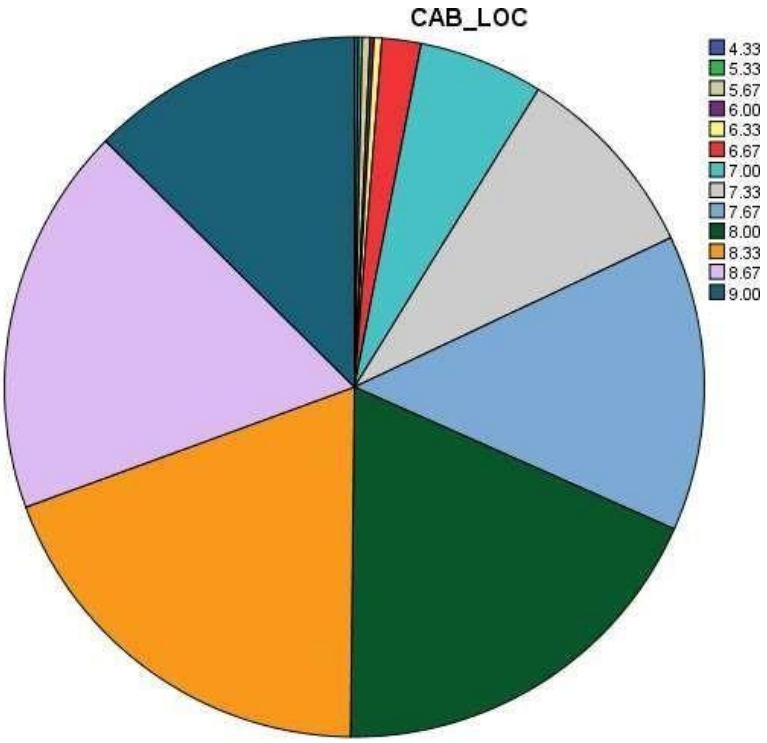

Fig. 4.5: Pie-chart of the Frequency of Causal Attributional Beliefs – Locus of Causality Level Scores Interpretation: The frequencies of the scores 8.33, 9.00 and 8.67 of the variable casual attributional beliefs – L o c u s o f c a u s a l i t y are the highest, indicating the presence of this variable in the subjects at the higher end of the scale. The mean c a s u a l attributional beliefs – Locus of c a u s a l i t y estimate of higher secondary students is found to be satisfactorily higher than the average score of 5 in the scale, at 8.092. The extent of dispersion of the data is estimated using standard deviation at 0.6623. Skewness and Kurtosis in the data of this variable are found to be under limit at – 0.926 and 2.001 respectively. For the data to be considered normal, the skewness and kurtosis must be within the limits of - 2 to +2 and from -7 to +7 (Hair et al., 2010; Bryne, 2010).

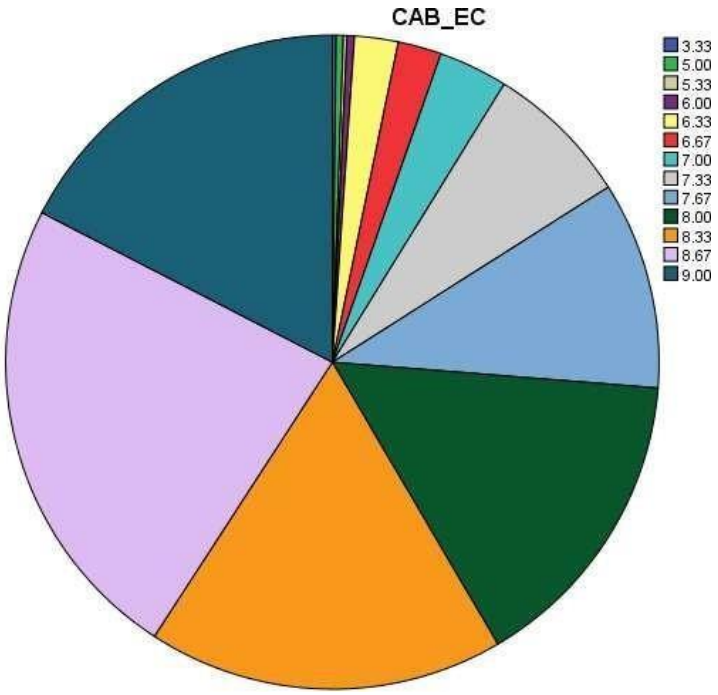

Fig. 4.6: Pie-chart of the Frequency of Causal Attributional Beliefs – External Control Level Scores Interpretation: The frequencies of the scores 9.00, 8.67 and 8.33 of the variable casual attributional beliefs – E x t e r n a l control are the highest, indicating the presence of this variable in the subjects at the higher end of the scale. The mean c a s u a l attributional beliefs – External Control estimate of higher secondary students is found to be higher than the average at 8.176. The extent of dispersion of the data is estimated using standard deviation at 0.7363. The acceptable minimum and maximum thresholds for the data to be symmetric are from - 2 to +2 for Skewness and from -7 to +7 for kurtosis (Hair et al., 2010; Bryne, 2010). Skewness in the data of this variable was found to be under limits at -1.5. However, the estimate of kurtosis, at 4.282, was found to be leptokurtic. High kurtosis leads to fluctuations in the estimates away from the mean value, and hence caution should be shown while reporting the measure of central tendency of this variable using the mean estimate.

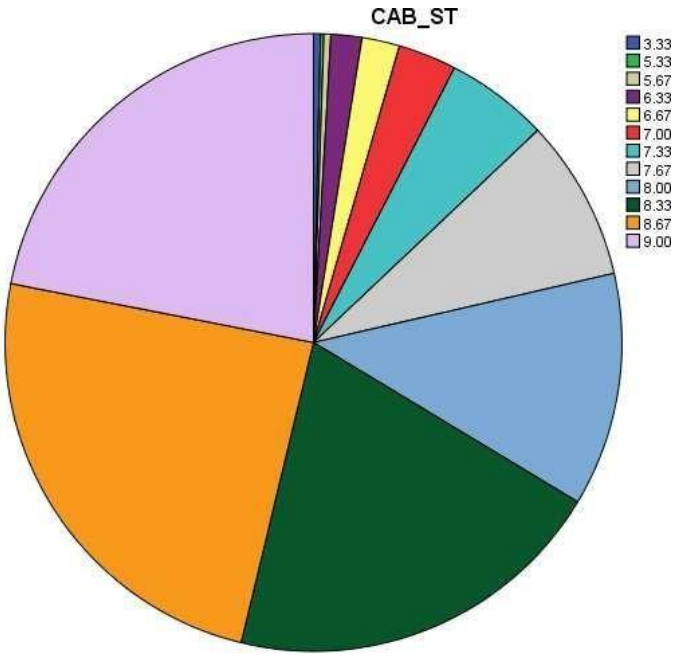

Fig. 4.7: Pie-chart of the Frequency of Causal Attributional Beliefs–Stability Level Scores Interpretation: The frequencies of the scores 9.00, 8.67 and 8.33 of the variable casual attributional beliefs – S t a b i l i t y are the highest, indicating the presence of this variable in the subjects at the higher end of the scale. The mean c a s u a l attributional beliefs – Stability estimate of higher secondary students is found to be higher than the average score of 5 in the scale at 8.270, indicating existence of this trait in higher levels in the sample subjects. The extent of dispersion of the data is estimated using standard deviation at 0.7296. For the data to be considered normal, the skewness and kurtosis must be within the limits of - 2 to +2 and from -7 to +7 (Hair et al., 2010; Bryne, 2010). Skewness and Kurtosis in the data of this variable are found to be at –1.99 and7.69 respectively. While skewness is under control, the kurtosis estimate obtained in this study is higher than the upper threshold of the benchmark of normality and was found to be leptokurtic. High kurtosis leads to fluctuations in the estimates away from the mean value, and hence caution should be shown while reporting the measure of central tendency of this variable using the mean estimate.

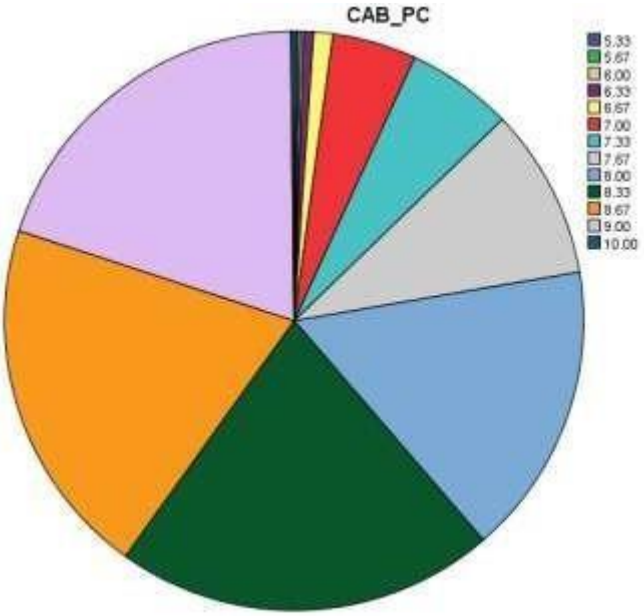

Fig. 4.8: Pie-chart of the Frequency of Causal Attributional Beliefs – Personal Control Level Scores Interpretation: The frequencies of the scores 9.00, 8.67 and 8.33 of the variable casual attributional beliefs – P e r s o n a l C o n t r o l are the highest, indicating the presence of this variable in the subjects at the higher end of the scale. The mean c a s u a l attributional beliefs – Personal Control estimate of higher secondary students is found to be higher than the average score of 5 in the scale at 8.2520, implying the presence of this trait in the sample subject at higher end. The extent of dispersion of the data is estimated using standard deviation at 0.6347. Skewness and Kurtosis in the obtained data of this variable are found to be under limits at – 0.907 and 1.055 respectively, because the data can be considered normal, when the skewness and kurtosis are within the limits of - 2 to +2 and from -7 to +7 (Hair et al., 2010; Bryne, 2010).

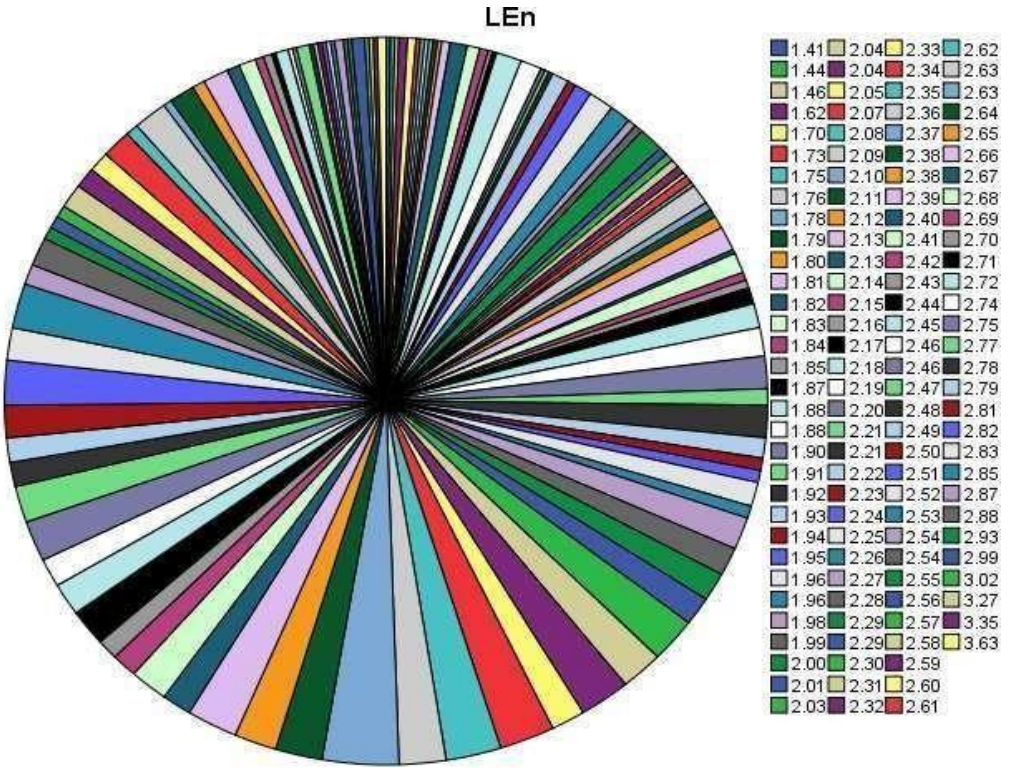

Fig. 4.9: Pie-chart of the Frequency of Learning Environment Level Scores

The frequency of the score 2.62 of the variable learning environment is the highest, indicating the presence of this variable in the subjects around the average level of the scale. The mean learning environment estimate of higher secondary students is found to be 2.344. The extent of dispersion of the data is estimate using standard deviation at 0.267. Skewness and Kurtosis in the data of this variable are found to be under of limits at 0.052 and 2.383 respectively, indicating symmetry since the skewness and kurtosis are within the limits of - 2 to +2 and from -7 to +7 (Hair et al., 2010; Bryne, 2010).

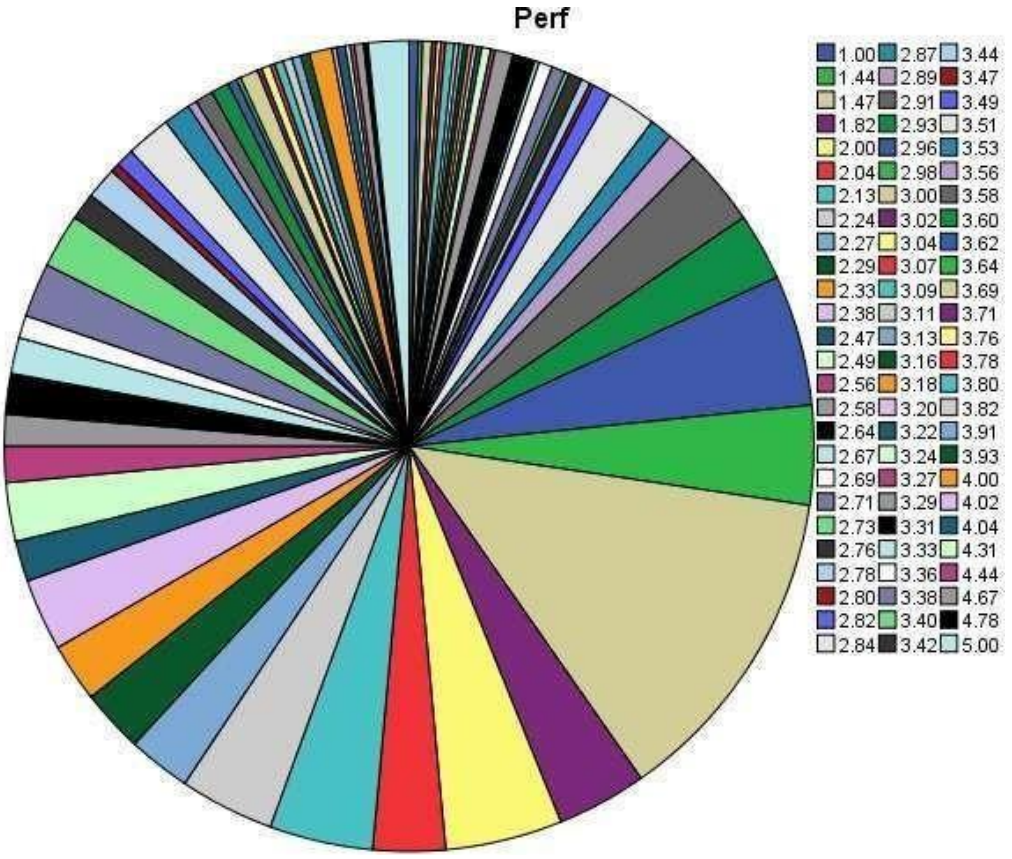

Fig. 4.10: Pie-chart of the Frequency of Perfectionism Level Scores

The frequency of the score 3.69 of the variable perfectionism is the highest, indicating the presence of this variable in the subjects around the average level of the scale. The mean perfectionism estimate of higher secondary students is found to be 3.142. The extent of dispersion of the data is estimated using standard deviation at 0.436. Skewness and Kurtosis in the data of this variable are found to be under of limits at 0.804 and 7.960 respectively. For the data to be considered normal, the skewness and kurtosis must be within the limits of -2 to +2 and from -7 to +7 (Hair et al., 2010; Bryne, 2010). Under the existence of such a benchmark, the kurtosis estimate of the variable perfectionism is higher than acceptable limits, and hence caution should be observed while reporting its central tendency estimate using mean alone.

Overall, the data of all research variables have their measures of asymmetry within the acceptable limits and slightly on the higher side of the acceptable benchmark, allowing for further data analysis.

4.2.5. Data Analysis of Objective 3:

To find out significant difference in the mean self-handicapping tendency, mean causal attributional beliefs, mean learning environment and mean perfectionism among higher education students on the bases of their gender, locality and discipline.

4.2.5.1 Significance testing of the Difference among Higher Education Students in their Self-handicapping Tendency with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig. (2-tailed)	Result Null Hypothesis H_0
Female	274	2.2062	0.02205	0.711	554	0.478	***Accepted***
Male	282	2.1841					

Interpretation: The mean self-handicapping tendency of 274 female college students is 2.2062, which is higher than the mean of the same variable in 282 male college students at 2.1841. The difference in the mean is 0.02205. It is not significant for the obtained t-value of 0.711, since the p-value of 0.478 for degree of freedom df = 554, is more than significance level $\alpha = 0.05$. Hence, the ***null hypothesis H_0***, that there is no significant difference among higher education students in their Self-handicapping Tendency with respect to Gender is ***accepted***.

4.2.5.2 Significance testing of the Difference among Higher Education Students in their Self-handicapping Tendency with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H_0
Doaba	222	2.2120	0.416	0.660	***Accepted***
Malwa	182	2.1871			
Majha	152	2.1796			

Interpretation: The mean self-handicapping tendency of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 2.2120, 2.1871 and 2.1796 respectively. The differences in the mean self-handicapping tendency are not significant for the obtained F-value of 0.416, since the p-value of 0.660 for degree of freedom df = (2,553), is more than significance level α = 0.05. Hence, the ***null hypothesis H_0***, that there is no significant difference among higher education students in their Self-handicapping Tendency with respect to localities is ***accepted***.

4.2.5.3 Significance testing of the Difference among Higher Education Students in their Self-handicapping Tendency with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H_0
Science	183	2.2344	1.661	0.191	***Accepted***
Arts	190	2.1826			
Commerce	183	2.1684			

Interpretation: The mean self-handicapping tendency of 183. 190 and 183 college students from Science, Arts and Commerce disciplines are 2.2344, 2.1826 and 2.1684 respectively. The differences in the mean self-handicapping tendency are not significant for the obtained F-value of 1.661, since the p-value of 0.191 for degree of freedom df = (2,553), is more than the significance level α = 0.05. Hence the ***null hypothesis H_0***, that there is no significant difference among higher education students in their Self-handicapping Tendency with respect to discipline is ***accepted***.

4.2.5.4 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs with respect to Gender:

4.2.4.4.1 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Locus of Causality with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig. (2-tailed)	Result Null Hypothesis H_0
Female	274	8.1204	0.0554	0.986	554	0.324	***Accepted***
Male	282	8.0650					

Interpretation: The mean causal attributional beliefs – Locus of c a u s a l i t y estimates of 274 female college students and 282 male college students are 8.1204 and 8.0650 respectively. The difference in the mean is 0.05543. It is non-significant for the obtained t-value of 0.986, since the p-value of 0.324 for degree of freedom df = 554, is greater than level of significance α = 0.05. Hence, the ***null hypothesis H0***, that there is no significant difference among higher education students in their c a u s a l attributional beliefs – Locus of c a u s a l i t y , with respect to Gender is ***Accepted***.

4.2.4.4.2 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – External Control with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig. (2-tailed)	Result Null Hypothesis H_0
Female	274	8.1107	-0.1304	-2.094	554	0.037	***Rejected***
Male	282	8.2411					

Interpretation: The mean causal attributional beliefs – External Control estimates of 274 female college students and 282 male college students are 8.1107 and 8.2411 respectively. The difference in the mean is -0.1304. It is significant for the obtained t- value of -2.094, since the p-value of 0.037 for degree of freedom df = 554, is lesser than level of significance $\alpha = 0.05$. Hence, the null hypothesis H0, that there is no significant difference among higher education students in their causal attributional beliefs – External control, with respect to Gender is ***Rejected***. Male undergraduates have more mean causal attributional beliefs – External control trait than female counterparts.

4.2.4.4.3 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Stability with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig. (2-tailed)	Result Null Hypothesis H_0
Female	274	8.1898	-0.1589	-2.581	554	0.010	Rejected
Male	282	8.3487					

Interpretation: The mean causal attributional beliefs – Stability estimates of 274 female college students and 282 male college students are 8.1898 and 8.3487 respectively. The difference in the mean is -0.1589. It is significant for the obtained t- value of -2.581, since the p-value of 0.010 for degree of freedom df = 554, is lesser than level of significance á = 0.05. Hence, **the null hypothesis H_0**, that there is no significant difference among higher education students in their c a u s a l attributional beliefs – stability, with respect to Gender is ***Rejected***. Male undergraduates have more mean c a u s a l attributional beliefs – Stability trait than more mean c a u s a l attributional beliefs – Stability trait than female counterparts.

4.2.4.4.4 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Personal Control with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig. (2-tailed)	Result Null Hypothesis H_0
Female	274	8.1277	-0.2457	-4.649	554	0.000	Rejected
Male	282	8.3735					

Interpretation: The mean causal attributional beliefs – Personal Control estimates of 274 female college students and 282 male college students are 8.1277 and 8.3735 respectively. The difference in the mean is -0.2457. It is significant for the obtained t- value of -4.649, since the p-value of 0.000 for degree of freedom df = 554, is lesser than level of significance $\alpha = 0.05$. Hence, the ***null hypothesis H0***, that there is no significant difference among higher education students in their c a u s a l attributional beliefs – Personal Control, with respect to Gender is ***Rejected***. Male undergraduates have more mean c a u s a l attributional beliefs – Personal Control with respect to Gender is ***Rejected***. Male undergraduates have more mean c a u s a l attributional beliefs – Personal Control trait than female counterparts.

4.2.5.5 Significance Testing of the Difference among Higher Education Students in their Casual Attributional Beliefs with respect to Locality:

4.2.4.5.1 Significance Testing of the Difference among Higher Education Students in their Casual Attributional Beliefs – Locus of Causality with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Doaba	222	8.1622	3.661	0.026	Rejected
Malwa	182	7.9872			
Majha	152	8.1162			

4.2.4.5.1.2 Multiple Comparisons – Post Hoc Test Analysis - Bonferroni

Dependent Variable: Causal Attributional Beliefs – Locus of Causality

"(I) Locality"	"(J) Locality"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Doaba	Malwa	0.17498*	0.06592	0.025	0.0167	0.3333
	Majha	0.04593	0.06940	1.000	-0.1207	0.2126
Malwa	Majha	-0.12905	0.07243	0.226	-0.3030	0.0449

"significant at α = 0.05 level".

Interpretation: The mean casual attributional beliefs – Locus of Causality estimate of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 8.1622, 7.9872 and 8.1162 respectively. The differences in the causal mean values are significant for the obtained F-value of 3.661, since the p-value of 0.026 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence, the null hypothesis H0, that there is no significant difference among higher education students in their causal attributional beliefs – Locus of Causality with respect to localities is Rejected.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – Locus of Causality between students of Doaba and Malwa localities, with the difference in the means of is variable at 0.17498 have a p-value = 0.025 which is

lesser than the level of significance α = 0.05. Students from Doaba locality of Punjab state display more of this trait when compared to students of Malwa region.

4.2.4.5.2 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – External Control with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Doaba	222	8.1592	3.481	0.031	Rejected
Malwa	182	8.0934			
Majha	152	8.3026			

4.2.4.5.2.1 Multiple Comparisons – Post Hoc Test Analysis - Bonferroni

Dependent Variable: Causal Attributional Beliefs – External Control

"(I) Locality"	"(J) Locality"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Doaba	Malwa	0.06575	0.07331	1.000	-0.1103	0.2418
	Majha	-0.14347	0.07718	0.191	-0.3288	0.0419
Malwa	Majha	-0.20922*	0.08055	0.029	-0.4027	-0.0158

- "significant at α = 0.05 level".

Interpretation: The mean casual attributional beliefs – External Control estimate of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 8.1592, 8.0934 and 8.3026 respectively. The differences in the mean values are significant for the obtained F-value of 3.481, since the p-value of 0.031 for degree of freedom df = (2,553), is

lesser than level of significance α = 0.05. Hence, the ***null hypothesis H_0,*** that there is no significant difference among higher education students in their causal attributional beliefs – External control with respect to localities is Rejected.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – External Control between students of Majha and Malwa localities, with the difference in the means of this variable at - 0.20922 have a p-value = 0.029 which is lesser than the level of significance α = 0.05. Students from Majha locality of Punjab state display more of this trait when compared to students of Malwa region.

4.2.4.5.3 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Stability with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Doaba	222	8.2973	0.609	0.544	Accepted
Malwa	182	8.2216			
Majha	152	8.2895			

Interpretation: The mean casual attributional beliefs – Stability estimate of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 8.2973, 8.2216 and 8.2895 respectively. The differences in the mean values are non-significant for the obtained F-value of 0.609, since the p-value of 0.544 for degree of freedom df = (2,553), is greater than level of significance α = 0.05. Hence, the null hypothesis H0, that there is no significant difference among higher education students in their causal attributional beliefs – External control with respect to localities is Accepted. Students from the three regions of Punjab do not differ much with respect to this trait.

4.2.4.5.4 Significance Testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Personal Control with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Doaba	222	8.2042	8.85	0.000	Rejected
Malwa	182	8.1612			
Majha	152	8.4320			

4.2.4.5.4.1 Multiple Comparisons – Post Hoc Test Analysis – Bonferroni

Dependent Variable: Causal Attributional Beliefs – Personal Control

"(I) Locality"	"(J) Locality"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Doaba	Malwa	0.04303	0.06259	1.000	-0.1073	0.1933
	Majha	-0.22781*	0.06589	0.002	-0.3860	-0.0696
Malwa	Majha	-0.27085*	0.06877	0.000	-0.4360	-0.1057

- **"significant at α = 0.05 level".**

Interpretation: The mean casual attributional beliefs – Personal Control estimate of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 8.2042, 8.1612 and 8.4320 respectively. The differences in the mean values are significant for the obtained F-value of 8.85, since the p-value of 0.000 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence, the ***null hypothesis H_0,*** that there is no significant difference among higher education students in their causal attributional beliefs – Personal control with respect to localities is Rejected.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – Personal Control between students of Majha and

Malwa, and Doaba and Majha localities respectively. In the former case, the difference in the means of this variable at - 0.22781 have a p-value = 0.002 which is lesser than the level of significance α = 0.05. It implies that the students from Majha locality of Punjab state display more of this trait when compared to students of Malwa region. In the later case, the difference in the means of this variable at - 0.27085 have a p-value = 0.000 which is lesser than the level of significance α = 0.05. It implies that the students from Majha locality of Punjab state display more of causal mean attributional beliefs – Personal Control trait when compared to students of Doaba region.

4.2.5.6 Significance testing of the Difference among Higher Education Students in their Causal Attributional Beliefs with respect to Discipline:

4.2.4.6.1 Significance testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Locus of Causality with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Science	183	8.1858	5.014	0.007	Rejected
Arts	190	7.9754			
Commerce	183	8.1202			

4.2.4.6.1.1 Multiple Comparisons – Post Hoc Test Analysis - Bonferroni

Dependent Variable: C ausal Attributional Beliefs – L o c u s o f C a u s a l i t y

"(I) Stream"	"(J) Stream"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Science	Arts	0.21035*	0.06811	0.006	0.0468	0.3739
	Commerce	0.06557	0.06875	1.000	-0.0995	0.2307
Arts	Commerce	-0.14478	0.06811	0.102	-0.3083	0.0188

*. – "significant at α = 0.05 level".

Interpretation: The mean causal attributional beliefs – Locus of Causality estimate of 183, 190 and 183 college students from Science, Arts and Commerce disciplines are 8.1858, 7.9754 and 8.1202 respectively. The differences in the mean values are significant for the obtained F-value of 5.014, since the p-value of 0.007 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence, the ***null hypothesis H_0,*** that there is no significant difference among higher education students in their causal attributional beliefs – Locus of Causality with respect to discipline is ***Rejected***.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – Locus of Causality between students of Scince and arts disciplines respectively. The difference in the means of this variable at 0.21035 have a p-value = 0.006 which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of this trait when compared to students of Arts discipline.

4.2.4.6.2 Significance testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – External Control with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Science	183	8.3698	9.911	0.000	Rejected
Arts	190	8.0561			
Commerce	183	8.1093			

4.2.4.6.2.1 Multiple Comparisons – Post Hoc Test Analysis - Bonferroni

Dependent Variable: C ausal Attributional Beliefs – E x t e r n a l C o n t r o l

"(I) Stream"	"(J) Stream"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Science	Arts	0.31362*	0.07507	0.000	0.1334	0.4939
	Commerce	0.26047*	0.07577	0.002	0.0785	0.4424
Arts	Commerce	-0.05315	0.07507	1.000	-0.2334	0.1271

*. – "significant at α = 0.05 level".

Interpretation: The mean causal attributional beliefs – External Control estimate of 183, 190 and 183 college students from Science, Arts and Commerce disciplines are 8.3698, 8.0561 and 8.1093 respectively. The differences in the mean values are significant for the obtained F-value of 9.911, since the p-value of 0.000 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence, the ***null hypothesis H_0***, that there is no significant difference among higher education students in their causal attributional beliefs – External control with respect to discipline is Rejected.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – External Control between students of Science and arts, and Science and commerce disciplines respectively. In the former case, the difference in the means of this variable at 0.31362 have a p-value = 0.000 which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of this trait when compared to students of Arts discipline. In the later case, the difference in the means of this variable at 0.26047 have a p-value = 0.002 which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of causal mean attributional beliefs – External Control trait when compared to students of Commerce discipline.

4.2.4.6.4 Significance testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Stability with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Science	183	8.4882	12.803	0.000	Rejected
Arts	190	8.1825			
Commerce	183	8.1439			

4.2.4.6.3.1 Multiple Comparisons – Post Hoc Test Analysis – Bonferroni

Dependent Variable: C ausal Attributional Beliefs – S t a b i l i t y

"(I) Stream"	"(J) Stream"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Science	Arts	0.30570*	0.07401	0.000	0.1280	0.4834
	Commerce	0.34426*	0.07471	0.000	0.1649	0.5237
Arts	Commerce	0.03856	0.07401	1.000	-0.1392	0.2163

*. – "significant at α = 0.05 level".

Interpretation: The mean causal attributional beliefs – Stability estimate of 183, 190 and 183 college students from Science, Arts and Commerce disciplines are 8.4882, 8.1825 and 8.1439 respectively. The differences in the mean values are significant for the obtained F-value of 12.803, since the p-value of 0.000 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence, the null hypothesis H0, that there is no significant difference among higher education students in their causal attributional beliefs – Stability with respect to discipline is Rejected.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – stability between students of Science and arts, and Science and commerce disciplines respectively. In the former case, the difference in the means of this variable at 0.30570 have a p-value = 0.000

which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of this trait when compared to students of Arts discipline. In the later case, the difference in the means of this variable at 0.34426 have a p-value = 0.002 which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of causal mean attributional beliefs – Stability trait when compared to students of Commerce discipline.

4.2.4.6.4 Significance testing of the Difference among Higher Education Students in their Causal Attributional Beliefs – Personal Control with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H0
Science	183	8.5027	23.326	0.000	Rejected
Arts	190	8.1018			
Commerce	183	8.1585			

4.2.4.6.3.1 Multiple Comparisons – Post Hoc Test Analysis - Bonferroni

Dependent Variable: C ausal Attributional Beliefs – P e r s o n a l C o n t r o l

"(I) Stream"	"(J) Stream"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Science	Arts	0.40098*	0.06324	0.000	0.2491	0.5528
	Commerce	0.34426*	0.06383	0.000	0.1910	0.4975
Arts	Commerce	-0.05672	0.06324	1.000	-0.2086	0.0952

*. – "significant at α = 0.05 level".

Interpretation: The mean causal attributional beliefs – Personal control estimate of 183, 190 and 183 college students from Science, Arts and Commerce disciplines are 8.5027, 8.1018 and 8.1585 respectively. The differences in the mean values are significant for the obtained F-value of 23.326, since the p-value of 0.000 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence, the ***null*** hypothesis H0, that there is no significant difference among higher education students in their causal attributional beliefs – Personal control with respect to discipline is Rejected.

Post-hoc Bonferroni test found significant difference of causal mean attributional beliefs – Personal control between students of Science and arts, and Science and commerce disciplines respectively. In the former case, the difference in the means of this variable at 0.40098 have a p-value = 0.000 which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of this trait when compared to students of Arts discipline. In the later case, the difference in the means of this variable at 0.34426 have a p-value = 0.002 which is lesser than the level of significance α = 0.05. It implies that the students of Science discipline of Punjab state display more of causal mean attributional beliefs – Personal Control trait when compared to students of Commerce discipline.

4.2.6.7 Significance testing of the Difference among Higher Education Students in their Learning Environment with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig. (2-tailed)	Result Null Hypothesis H_0
Female	274	2.2859	-0.11531	-5.192	554	0.000	***Rejected***
Male	282	2.4012					

Interpretation: The mean learning environment estimate of 274 female college students is 2.2859, which is lesser than the mean of the same variable in 282 male college students at 2.4012. The difference in the mean is -0.11531. It is significant for the obtained t-value of -5.192, since the p-value of 0.000 for degree of freedom df = 554, is lesser than level of significance α = 0.05. Hence the ***null hypothesis H_0***, that

there is no significant difference among higher education students in their learning environment with respect to Gender is *Rejected*.

4.2.5.8 Significance testing of the Difference among Higher Education Students in their Learning Environment with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H_0
Doaba	222	2.2885	10.969	0.000	***Rejected***
Malwa	182	2.3513			
Majha	152	2.4178			

4.2.4.8.1 Multiple Comparisons – Post Hoc Test Analysis – Bonferroni Dependent Variable: Learning Environment Bonferroni

"(I) Locality"	"(J) Locality"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Doaba	Malwa	-.06273	.02632	.052	-.1259	.0005
	Majha	-.12923*	.02771	.000	-.1958	-.0627
Malwa	Majha	-.06651	.02892	.066	-.1360	.0029

*. – "significant at α = 0.05 level)".

Interpretation: The mean learning environment estimate of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 2.2885, 2.3513 and 2.4178 respectively. The differences in the mean learning environment are significant for the obtained F-value of 10.969, since the p-value of 0.000 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence the ***null hypothesis H_0***, that there is no significant difference among higher education students in their learning environment with respect to localities is *Rejected*.

Post-hoc Bonferroni test found significant difference in mean learning environment of Doaba locality with Majha locality with the p-value associated with these difference of the mean learning environment at 0.000, lesser than the level of significance α = 0.05. No significant difference in mean learning environment was found between localities of Doaba and Malwa, and Majha and Malwa localities respectively.

4.2.5.9 Significance testing of the Difference among Higher Education Students in their Learning Environment with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H_0
Science	183	2.3936	14.593	0.000	***Rejected***
Arts	190	2.2615			
Commerce	183	2.3812			

4.2.4.9.1 Multiple Comparisons – Post Hoc Test Analysis - Bonferroni

Dependent Variable: Learning Environment Bonferroni

"(I) Stream"	"(J) Stream"	"Mean Difference (I-J)"	"Std. Error"	"Sig."	"95% Confidence Interval"	
					"Lower Bound"	"Upper Bound"
Science	Commerce	.01234	.02734	1.000	-.0533	.0780
Arts	Science	-.13208*	.02709	.000	-.1971	-.0670
	Commerce	-.11973*	.02709	.000	-.1848	-.0547

*. – "significant at α = 0.05 level"

Interpretation: The mean learning environment of 183, 190 and 183 college students from Science, Arts and Commerce disciplines are 2.3936, 2.2615 and 2.3812 respectively. The differences in the mean learning environment are significant for the obtained F-value of 14.593, since the p-value of 0.000 for degree of freedom df = (2,553), is lesser than level of significance α = 0.05. Hence the ***null hypothesis H_0,*** that there is no significant difference among higher education students in their learning environment with respect to discipline is ***Rejected.***

Post-hoc Bonferroni test found significant difference in mean learning environment of arts students with commerce and science stream students with the p-value associated with these difference of the mean learning environment at 0.000, lesser than the level of significance α = 0.05. No significant difference in mean learning environment was found between students of science and commerce disciplines.

4.2.5.10 Significance Testing of the Difference among Higher Education Students in their Perfectionism with respect to Gender:

Gender	N	Mean	Mean Difference	Obtained t-value	df	Sig.(2tail d)	Result Null Hypothesis H_0
Female	274	3.0988	-0.08664	-2.351	554	0.019	***Rejected***
Male	282	3.1854					

Interpretation: The mean perfectionism estimate of 274 female college students is 3.0988, which is lesser than the mean of the same variable in 282 male college students at 3.1854, a result that is similar to the university students in Spanish context (Fernandez-Garcia et al., 2023). The difference in the mean is -0.08644. It is significant for the obtained t-value of -2.351, since the p-value of 0.019 for degree of freedom df = 554, is lesser than level of significance $\alpha = 0.05$. Hence the ***null hypothesis H_0***, that there is no significant difference among higher education students in their perfectionism with respect to Gender is Rejected.

4.2.5.11 Significance Testing of the Difference among Higher Education Students in their Perfectionism with respect to Locality:

Locality	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H_0
Doaba	222	3.1750	1.011	0.364	***Accepted***
Malwa	182	3.1221			
Majha	152	3.1203			

Interpretation: The mean perfectionism estimate of 222, 182 and 152 college students from Doaba, Malwa and Majha localities are 3.1750, 3.1221 and 3.1203 respectively. The differences in the mean perfectionism are non-significant for the obtained F-value of 1.011, since the p-value of 0.364 for degree of freedom df = (2,553), is more than the significance level $\alpha = 0.05$. Hence, the ***null hypothesis H_0***, that there is no significant difference among higher education students in their perfectionism with respect to localities is ***Accepted***.

4.2.5.12 Significance Testing of the Difference among Higher Education Students in their Perfectionism with respect to Discipline:

Discipline	N	Mean	Obtained F-value	Sig. (2-tailed)	Result Null Hypothesis H_0
Science	183	3.1348	2.060	0.128	***Accepted***
Arts	190	3.1022			
Commerce	183	3.1927			

Interpretation: The mean perfectionism of 183, 190 and 183 college students from Science, Arts and Commerce disciplines are 3.1348, 3.1022 and 3.1927 respectively. The differences in the mean perfectionism are non-significant for the obtained F-value of 2.060, since the p-value of 0.128 for degree of freedom df = (2,553), is more than the significance level $\alpha = 0.05$. Hence, the ***null hypothesis H_0***, that there is no significant difference among higher education students in their perfectionism with respect to discipline is ***Accepted.***

4.2.6 Data Analysis of Objective 4:

To find out the impact of causal attributional beliefs, learning environment, and perfectionism on the self-handicapping tendencies of higher education students.

4.2.6.1 – Measures of Relationships:

4.2.6.1.1 – Relationship between the Constructs C a u s a l attributional beliefs and self- handicapping tendency:

4.2.5.1.1.1 - Relationship between the Causal attributional beliefs - Locus of Causality and Self-Handicapping tendency:

Table 4.2.5.1

Correlations			
		SHS	CAB_LOC
SHS	Pearson Correlation	1	.127**
	Sig. (2-tailed)		.000
	N	556	556
CAB_LOC	Pearson Correlation	.127**	1
	Sig. (2-tailed)	.000	
	N	556	556

**. – "significant at α = 0.01 level (2-tailed)".

Interpretation – The link between the self-handicapping tendency and Causal attributional beliefs – Locus of Causality was found to be weak in strength and positive in nature for pearson moment coefficient correlation r = 0.127. The result is highly significant at 0.01 level of significance, for the p value = 0.000. Hence, the null hypothesis that there is no significant relationship between self-handicapping tendency and Causal attributional beliefs – Locus of Causality is ***Rejected***. Practically, this result implies that there is covariance or simulataneous change in the positive direction, in these two variables in college undergraduates. This finding is in line with the results of Feick and Rhodewalt (1997) who empirically showed that those successful students who more internalized the causes of their success, also displayed higher sense of claimed self-handicapping tendency. Theoretically, the relationship between the variables draws its underpinning from the work of Turban et al., (2007) who referred perceived locus of causality as "*the extent to which individuals perceive their own actions as a result of either external or internal reasons*". Furthermore, Jones and Berglas (1978) introduced self-handicapping as a plan to either safeguard one's sense of self-competence in case of a impending failure by externalizing the attributing factor of cause or creating a self-obstacle to underperform, or conveniently internalize any cause of success to enhance one's self-esteem.

4.2.5.1.1.2 - Relationship between the Causal attributional beliefs - External Control and Self-Handicapping tendency:

Table 4.2.5.2

Correlations			
		SHS	CAB_EC
SHS	Pearson Correlation	1	.109*
	Sig. (2-tailed)		.000
	N	556	556
CAB_EC	Pearson Correlation	.109*	1
	Sig. (2-tailed)	.000	
	N	556	556

**. – "significant at α = 0.05 level (2-tailed)".

Interpretation – The link between the self-handicapping tendency and Causal attributional beliefs – External control was found to be weak in strength and positive in nature for pearson moment coefficient correlation r = 0.109. The result is significant at 0.05 level of significance, for the p value = 0.010. Hence, the null hypothesis that there is no significant relationship between self-handicapping tendency and Causal attributional beliefs – External control is Rejected.

Theoretical linkage of this finding in literature is that according to Weiner (1979), as discussed by Russell (1982), external control dimension of causal attributional belief involves any cause that can be controlled by the individual or others, by altering it or affecting it through an external factor. Self-handicapping strategy stems from such attributional theories (Brown, 1991; Arkin and Baumgardner, 1985) as a prevalent trait in humans where they display selfish bias during causal attributions by internalizing successful outcomes and externalizing failure ridden outcomes (Smederevac et al., 2003). Hence, the presence of a positive covariance between the two variables. Empirically, Thompson and Richardson (2001) could show that high self-handicappers internalize their success lesser than low self-handicappers and stress on external factors of control like luck and difficulty of task as causes for their dismal performance.

4.2.5.1.1.3 - Relationship between the Causal attributional beliefs - Stability and Self-Handicapping tendency:

Table 4.2.5.3

Correlations			
		SHS	CAB_ST
SHS	Pearson Correlation	1	.078
	Sig. (2-tailed)		.066
	N	556	556
CAB_ST	Pearson Correlation	.078	1
	Sig. (2-tailed)	.066	
	N	556	556

****. – "significant at α = 0.05 level (2-tailed)".**

Interpretation – There was no significant link between the self-handicapping tendency and Causal attributional beliefs – Stability, since the obtained p-value of 0.066 is found to be greater than the 0.05 level of significance. Hence, the null hypothesis that there is no significant relationship between self-handicapping tendency and Causal attributional beliefs – Stability is Accepted. This result is in line with the fidnings of Thompson and Richardson (2001) who reported no influence or interaction of self-handicapping tendency and temporal stability of the cause on or with each other.

4.2.5.1.1.4 - Relationship between the Causal attributional beliefs - Personal Control and Self-Handicapping tendency:

Table 4.2.5.4

Correlations			
		SHS	CAB_PC
SHS	Pearson Correlation	1	.080
	Sig. (2-tailed)		.058
	N	556	556
CAB_PC	Pearson Correlation	.080	1
	Sig. (2-tailed)	.058	
	N	556	556

**. – "significant at α = 0.05 level (2-tailed)".

Interpretation – There was no significant link between the self-handicapping tendency and Causal attributional beliefs – Personal Control, since the obtained p- value of 0.058 is found to be greater than the 0.05 level of significance. Hence, the null hypothesis that there is no significant relationship between self-handicapping tendency and Causal attributional beliefs – Personal control is Accepted. According to Russell (1982), personal control dimension of causal attributional belief involves any cause that can be controlled by the individual or others, by altering it or affecting it all by self. Such an exercise demands either the display of an effort or presence of an ability, either of which do not require an undesirable trait like self-handicapping as their buffer. Hence, the rationale for the lack of relationship between the two variables.

4.2.6.1.2 – Relationship of the Constructs Learning Environment on self- handicapping tendency.

Table 4.2.5.2

Correlations			
		SHS	LEn
SHS	Pearson Correlation	1	-.171**
	Sig. (2-tailed)		.000
	N	556	556
LEn	Pearson Correlation	-.171**	1
	Sig. (2-tailed)	.000	
	N	556	556

**. – "*significant at α = 0.01 level (2-tailed)*".

Interpretation – The association between the constructs learning environment and self-disruptive tendency was weak in strength and negative in nature for pearson moment coefficient correlation r = - 0.171. The result is highly significant at 0.01 level of significance, for the p value = 0.000. Hence, the null hypothesis that there is no significant relationship between self-disruptive tendency and learning environment is Rejected. Such a negative relationship was reported by Sahin and Coban (2020) in the context of school students, where a positive and conducive school learning environment reduced the probability of its students to display self-handicapping tendency.

4.2.6.1.3 – Relationship of the Constructs Perfectionism on self-handicapping tendency.

Table 4.2.5.3 Correlations

		SHS	Perf
SHS	Pearson Correlation	1	-.128**
	Sig. (2-tailed)		.002
	N	556	556
Perf	Pearson Correlation	-.128**	1
	Sig. (2-tailed)	.002	
	N	556	556

**. – "*significant at α = 0.01 level (2-tailed)*".

Interpretation – The link between the constructs perfectionism and self-handicapping tendency was found to be weak in strength and negative in nature for pearson moment coefficient correlation r = - 0.281. The result is highly significant at

0.01 level of significance, for the p value = 0.002. Hence, the null hypothesis that there is no significant relationship between self-disruptive tendency and perfectionsim is ***Rejected***. This result indicates that perfectionism in a balanced proportion in an individual always is an enabling trait, motivating the subject to attain the set standards with persistent efforts and shun any debilitating tendency. However, this result is contradiction to the one reported by Arazzini Stewart and George-Walker (2014), where they found a positive and significant correlation between the two variables. However, the mentioned study considered the maladaptive counterpart of perfectionism for its investigation with self-handicapping tendency, where the student sets unattainable standards for the self and on realization of the reality adopts face saving mechanisms like self-impediment tendencies. This rationale is proven by the work of Niknam, Hosseinian and Yazdi (2010) study in which the investigators reported that based on the type of perfectionism (positive or negative) considered in the university student subject, self-handicapping tendency also falls and rises respectively. Moreover, Kearns et al. (2008) also reported covariance between perfectionism and self-sabotagging trait.

4.2.6.2 Measure of Predictive Relationships:

4.2.6.2.1 Predictive relationship of the construct Causal Attributional Beliefs onSelf- Handicapping Tendency – Simple Linear Regression Analysis.

4.2.5.2.1.1 Predictive relationship of the Causal Attributional Beliefs – Locus of Causality on Self- Handicapping Tendency – Simple Linear Regression Analysis.

H0: "There is no predictive relationship of the Causal Attributional Beliefs – Locus of Causality on the Self-Handicapping Tendency."

Table 4.3

Regression analysis between Causal Attributionl Beliefs – Locus of Causality and Self- Handicapping Tendency:

"Model Summary"							
"Model"	"R"	"R Squar e"	"Adjusted R Square"	"Estimated F-Value"	"df"	"Sig."	"Result Null Hypothesis (H0)"
1	0.127a	0.016	0.014	9.112	(1,554)	0.003b	Rejected

a. Dependent Variable: Self-handicapping Tendency
b. Predictors: (Constant), Causal Attributional Beliefs-Locus of Causality

Interpretation: The independent variable, Causal attributional beliefs – Locus of Causality of the college students, predicts self-handicapping tendency weakly, with a simple linear regression coefficient R, 0.127, and the coefficient of determination R square 0.016. This indicates that 1.6% variation in self-handicapping tendency is explained by the predictor variable attributional beliefs for a unit change in it. The simple linear regression coefficient R is significant since the p-value = 0.003 is lesser than the level of significance $\alpha = 0.01$, under an estimated F value of 9.112 for degree of freedom df = (1,554). The null hypothesis H0, that existence of no predictive relationship of the Causal Attributional Beliefs – Locus of Causality on the Self-Handicapping Tendency, is rejected. The regression equation is:

(Self-Handicapping Tendency) = 1.627 + 0.070 (Causal attributional beliefs –

Locus of Causality).

Here, the regression coefficient (β1) was found to be 0.070, indicating the slope. The p-value for this coefficient was 0.003 indicating high level of significance. Hence, the independent variable Causal attributional belief – Locus of causality predicts the dependent variable self-handicapping tendency in college undergraduates weakly but statistically significantly. The result is in comjunction with Thompson and Hepburn (2003) study, where they found that college students with high causal uncertainity of their academic achievements displayed both behavioral and claimed types of self-handicapping, establishing the empiricial link between the two variables although using factorial design analysis. The present result paves way towards the estimation of the simultaneous predictive influence of this variable along with learning environment and perfectionism on the dependent variable, self-handicapping tendency, of the study. Practically, the result holds that the essence that the presence of a sense of Locus of causality element of causal attributional belief in a college going student would cause growth of the undesirable trait of self-handicapping in him or her.

4.2.5.2.1.2 Predictive relationship of the Causal Attributional Beliefs – External Control on Self- Handicapping Tendency – Simple Linear Regression Analysis.

H0: "There is no predictive relationship of the Causal Attributional Beliefs – External Control on the Self-Handicapping Tendency."

Table 4.4

Regression analysis between Causal Attributionl Beliefs – External Control andSelf-Handicapping Tendency:

"Model Summary"							
"Model"	"R"	"R Squar e"	"Adjusted R Square"	"Estimated F-Value"	"df"	"Sig."	"Result Null Hypothesis (H0)"
1	0.109a	0.012	0.010	6.659	(1,554)	0.010b	Rejected

a. Dependent Variable: Self-handicapping Tendency

b. Predictors: (Constant), Causal Attributional Beliefs-External Control

Interpretation : The independent variable, Causal attributional beliefs – External Control of the college students, predicts self-handicapping tendency weakly, with a simple linear regression coefficient R, 0.109, and the coefficient of determination R square 0.012. This indicates that 1.2% variation in self-handicapping tendency is explained by the predictor variable Causal attributional beliefs – External control for a unit change in it. The simple linear regression coefficient R is significant since the p- value = 0.010 is lesser than the level of significance $\alpha = 0.01$, under an estimated F value of 6.659 for degree of freedom df = (1,554). The **null hypothesis H_0**, that existence of no predictive relationship of the Causal Attributional Beliefs – External Control on the Self-Handicapping Tendency, is rejected. The regression equation is: (Self-Handicapping Tendency) = 1.753 + 0.054 (Causal attributional beliefs – External Control)

Here, the regression coefficient (β_1) was found to be 0.054, indicating the slope. The p-value for this coefficient was 0.010 indicating high level of significance. Hence, the independent variable Causal attributional belief – External control predicts the dependent variable self-handicapping tendency in college undergraduates weakly but statistically significantly. This is study result is in line with Rhodewalt et al., (1991) study where college students with high self-obstructing tendency, irrespective of their level of self-esteem, blamed an external cause, playing of music as a distracting factor and hence responsible for their failure in an intellectual ability test, indicating that self-handicapping subjects would always use external causal attribution as an alibi to safeguard their self-esteem in any situation involving ability performance and failure as the outcome. Torok, Szabo and Toth (2018) also mentioned causal attribution as an antecedent of self-handicapping as a finding in their summarization work of the literature available on this variable from 1978 to 2016. The present result paves way towards the estimation of the simultaneous predictive influence of Causal attributional belief variable along with learning environment and perfectionism on the dependentvariable, self-handicapping tendency, of the study. Practically, the result holds that the essence that the presence of a sense of external control element of causal attributional belief in a college going student would cause growth of the undesirable trait of self- handicapping in him or her.

Since there was no significant correlational relationship of Causal attributional belief – Stability and Personal control with self-handicapping tendency, the path analysis exercise of these variables is further ruled out.

4.2.6.2.2 Predictive relationship of the construct Learning Environment onSelf- Handicapping Tendency Simple Linear Regression Analysis.

H_0: "There is no predictive relationship of the construct learning environment on the Self-Handicapping Tendency."

Table 4.5

Regression analysis between Learning Envirnemnt and Self- Handicapping Tendency:

"Model Summary"							
"Model"	**"R"**	**"R Square"**	**"Adjusted R Square"**	**"Estimated F-Value"**	**"df"**	**"Sig."**	**"Result Null Hypothesis (H_0)"**
1	0.171[a]	0.029	0.027	16.617	(1,554)	0.000[b]	***Rejected***

a. Dependent Variable: Self-handicapping Tendency

b. Predictors: (Constant), Learning Environment

Interpretation: The independent variable, Learning environment of the college students, predicts self-handicapping tendency weakly, with a simple linear regression coefficient R, 0.171, and the coefficient of determination R square 0.029. This indicates that 2.9% variation in self-handicapping tendency is explained by the predictor variable Learning environment for a unit change in it. The simple linear regression coefficient R is significant since the p-value = 0.000 is lesser than the level of significance $\alpha = 0.01$, under an estimated F value of 16.617 for degree of freedom df = (1,554). The **null hypothesis H_0**, that existence of no predictive relationship of the Learning environment on the Self-Handicapping Tendency, is ***rejected***. The regression equation is:

(Self-Handicapping Tendency) = 2.741 - 0.233 (Learning Environment)

Here, the regression coefficient ($\beta 1$) was found to be -0.233, indicating the negative slope. The p-value for this coefficient was 0.000 indicating high level of significance.

Hence, the independent variable Learning environment predicts the dependent variable self-handicapping tendency in college undergraduates weakly but statistically significantly. Behrami and Amiri (2013) reported obtaining a negative regressional coefficient between educational environment and academic self-handicapping among Iranian University students, serving as the literary precedence for the present result. The present result paves way towards the estimation of the simultaneous predictive influence of learning environment variable along with Causal attributional belief and perfectionism on the dependent variable, self-handicapping tendency, of the study. Practically, the result holds that the essence that a positive learning environment of the educational institution like college would lead to decline in the undesirable trait of self-handicapping in the undergraduates.

4.2.6.2.3 Predictive relationship of the construct Perfectionism on Self- Handicapping Tendency – Simple Linear Regression Analysis.

H_0: "There is no predictive relationship of the construct Perfectionism on self-handicapping tendency."

Table 4.6

Regression analysis between Perfectionsim and Self- Handicapping Tendency:

"Model Summary"							
"Model"	**"R"**	**"R Square"**	**"Adjusted R Square"**	**"Estimated F-Value"**	**"df"**	**"Sig."**	**"Result Null Hypothesis (H_0)"**
1	0.128[a]	0.016	0.015	9.232	(1,554)	0.002[b]	***Rejected***

a. Dependent Variable: Self-handicapping Tendency

b. Predictors: (Constant), Perfectionism

Interpretation: The independent variable, Perfectionism in college students, predicts self-handicapping tendency weakly, with a simple linear regression coefficient R, 0.128, and the coefficient of determination R square 0.016. This indicates that 1.6% variation in self-handicapping tendency is explained by the predictor variable Perfectionism for a unit change in it.

The simple linear regression coefficient R is significant since the p-value = 0.002 is lesser than the level of significance $\alpha = 0.01$, under an estimated F value of 9.232 for degree of freedom df = (1,554). The **null hypothesis H_0**, that existence of no predictive relationship of the Perfectionism on the Self-Handicapping Tendency, is ***rejected***. The regression equation is:

(Self-Handicapping Tendency) = 2.532 - 0.107 (Perfectionism)

Here, the regression coefficient (β_1) was found to be -0.107, indicating the negative slope. The p-value for this coefficient was 0.002 indicating high level of significance.

Hence, the independent variable Perfectionism predicts the dependent variable self-handicapping tendency in college undergraduates weakly but statistically significantly. The results obtained here are in line with the study conducted by Niknam, Hosseinian and Yazdi (2010) in the Iranian context and in Lebanese and the United Kingdom contexts by Pulford et al., (2005). Akar, Dogan and Ustuner (2018) on Turkish University students found that negative perfectionism predicted self-sabotaging positively and significantly, and positive perfection negatively and significantly predicted this trait. Essentially, perfectionism is the trait where the individual sets very high benchmarks of performance, along with "selective attention to and over-generalisation of failure, stringent self-evaluations, and all or none thinking, where only total success or total failure exist as outcomes" (Hewitt and Flett, 1991, p. 456). It can be divided into adaptive perfectionism involving a realistic striving for high benchmark without psychological stress or maladjustment, and negative perfectionism comprising of regular apprehensions about actions, unhealthy evaluative concerns, and an obsession to avoid committing mistakes (Suddarth and Slaney, 2001). Eventually, Torok et al., (2022) reported that highly self-oriented perfectionists possessing adaptive perfectionism in them are less affected by self-handicapping in comparison to low self-oriented perfectionists who have maladaptive perfectionism in them. The present result paves way towards the estimation of the attributional belief and learning environment on the dependent variable, self-handicapping tendency, of the study. Practically, the result holds that the essence that simultaneous predictive influence of Perfectionsm variable along with Causal the presence of a positive sense of perfectionism trait in college students would lead to reduction in the undesirable trait of self-handicapping in them.

4.2.6.2.4 Test of Multicollinearity among the Independent Variables –Variance Inflation Factor (VIF) Estimation:

Table 4.7

Estimation of Variance Inflation Factor (VIF) of the Predictor Variables:

Collinearity Statistics		
Predictor Variable	**Tolerance**	**Variance Inflation Factor (VIF)**
Causal Attributional Beliefs – Locus of Causality	0.807	1.239
Causal Attributional Beliefs – External Control	0.812	1.231
Learning Environment	0.924	1.082
Perfectionism	0.932	1.073

Interpretation: The variance inflation factor estimates (Wooldridge, 2015; O'Brein, 2007) of all the four predictor variables, Causal attributional beliefs – Locus of causality, Causal attributional beliefs – External Control, learning environment and perfectionism, are desirably very close to 1, at 1.239, 1.231, 1.082 and 1.073 respectively. The tolerance estimates of all the four predictors are also high enough (Menard, 1995). This outcome indicates that none of the predictors is correlated to each other to the extent that it would affect the strength or nature of the multiple linear regression coefficient R to be estimated to quantify the simultaneous influence of these predictor variables on the dependent variable self-handicapping tendency in college students.

4.2.6.2.5 Predictive relationship of the constructs Causal Attributional Beliefs – Locus of Causality, Causal Attributional Beliefs – External Control, Learning Environment and Perfectionism on Self-Handicapping Tendency on Higher Secondary Students – Multiple Linear Regression Analysis.

H0: "There is no significant simultaneous predictive relationship of causal attributional beliefs, learning environment, and perfectionism on self-handicapping tendencies of higher education students."

Table 4.8

Multiple Regression Analysis of the constructs Causal Attributional Beliefs – Lcous of Causality, Causal Attributional Beliefs – External Control, Learning Environment and Perfectionism on Self-Handicapping Tendency on Higher Secondary Students:

"Model Summary"							
"Model"	"R"	"R Squar e"	"Adjuste d R Square"	"Estimated F-Value"	"df"	"Sig."	"Result Null Hypothesis (H0)"
1	0.241a	0.058	0.051	8.482	(4,551)	0.000b	Rejected

a. Dependent Variable: Self-handicapping Tendency

b. Predictors: (Constant), Causal Attributional Beliefs – Locusof Causality,Causal Attributional Beliefs – External Control, Learning Environment, Perfectionism

Interpretation: The independent variables, Causal attributional beliefs – Locus of Causality, Causal attributional beliefs - External Control, Perfectionism and Learning environment of the college students, predict self-handicapping tendency weakly, with a multiple linear regression coefficient R, 0.241, and the coefficient of determination R square 0.058. This indicates that 5.8% variation in self-handicapping tendency is explained by the four predictor variables for a unit change in them simultaneously. The multiple linear regression coefficient R is significant since the p-value = 0.000 is lesser than the level of significance $\alpha = 0.01$, under an estimated F value of 8.482 for degree of freedom df = (4,551). The **null hypothesis H_0**, that there is no significant simultaneous predictive relationship of attributional beliefs, learning environment, and perfectionism on self-handicapping tendencies of higher education students, is rejected. The regression equation is:

(Self-Handicapping Tendency) = 2.195 + 0.023 (Causal attributional beliefs – External Control) + 0.066 (Causal attributional beliefs – Locus of Causality) – 0.067 (Perfectionism) – 0.220 (Learning Environment).

Here, the regression coefficient (β_1) indicating the slope, was found to be 0.023 for the external control component of Causal attributional belief predictor, 0.066 for its Locus of causality component, -0.067 for perfectionism predictor and -0.220 for learning environment predictor. The p-value for these coefficients were 0.305, 0.010, 0.063 and 0.000 respectively. These values indicate high level of significance for the variables locus of causality and learning environments, and non-significance for the variables external control and perfectionism with respect to the predictive relationship they share with the dependent variable. Hence, all the four independent variables predict the dependent variable self-handicapping tendency in college undergraduates weakly but statistically significantly. However, the standardized coefficients or beta estimate is highest for the variable learning environment at 0.161 indicating its top most importance among the list of four predictors. It is followed by the predictor variable Locus of causality of Causal attributional beliefs, at 0.119. The variable perfectionism is the third important variable in the conceptual framework with beta at 0.080. The external control component of Causal attributional beliefs variable is the least importance predictor with beta at 0.047. Practically, the result holds that the essence that the presence of a sense of external control and locus of causality elements of causal attributional belief, perfectionism and learning environment simultaneously do impact a college going student's tendency of self-handicapping. Moreover, a positive sense of perfectionism and a nurturing learning environment tends to reduce this disenabling tendency, and both the elements of causal attributional beliefs promote this tendency instead.

4.2.6.2.6 Predictive relationship of the constructs Causal Attributional Beliefs – Lcous of Causality, Causal Attributional Beliefs – External Control, **Learning Environment and Perfectionism on Self-Handicapping Tendency on** Higher Secondary Students – Element Analysis.

The multiple regression analysis technique provides an estimate of the variance in a criterion variable when it is impacted by two or more predictor variables simulataneously. However, the variance caused by each of the predictors alone and in multiple combinations with the other predictor variables on the criterion variable are provided by Commonality analysis or Element Analysis (Onwuegbuzie and Daniel, 2003; Rowell, 1996), without causing any type I errors. Such an exercise is critical to fully understand the impact of certain predictor variables simulateneously predicting a

dependent variable (Seibold and McPhee, 1979, p.355). Also, it provides an essential method to estimate the most important and useful individual predictor in the model and its contribution in the regression model controlling the influence of other predictor variables, for drawing further practical implications.

Element analysis conducted in R using the package yhat which computes the communality coefficients (Nimon, Lewis, Kane and Haynes, 2008), with the output comprising of two parts, namely, the unique and the common contributions of the predictor variables to the studied regression model. The R code and the result of the element analysis of the present study data are shared below:

Step 1: Import data file into RStudio

Step 2: Install the package yhat

Step 3: Library (yhat) # activate the package for use

Step 4: attach (datafile)

Step 5: regr <- lm(SHS ~ LEn + Perf + CAB_LOC + CAB_EC) # Submit the model to the software

Step 6: regrout<-regr(regr) # Conduct the regression analysis

Step 7: regrout$Beta_Weights # Estimate the beta coefficients

Table 4.9 Estimation of Beta Coefficients of the Multiple Regression Model

LEn	Perf	CAB_LOC	CAB_EC
-0.1609	-0.0797	0.1194	0.0470

Step 8: regrout$Structure_Coefficients # Estimate Structure Coefficients

Table 4.10 Estimation of Structure Coefficients of the Multiple Regression Model

LEn	Perf	CAB_LOC	CAB_EC
-0.7085	-0.5315	0.5281	0.4525

Step 9: regrout$Commonality_Data # Estimate the Communality Coefficients

Table 4.11 Estimation of Communality or Element Coefficients of the Multiple Regression Model

S.No.	Component	Coefficient	% Total
1.	Unique to LEn	0.0240	41.29
2.	Unique to Perf	0.0059	10.22
3.	Unique to CAB_LOC	0.0115	19.86
4.	Unique to CAB_EC	0.0018	3.10
5.	Common to LEn, and Perf	0.0083	14.23
6.	Common to LEn, and CAB_LOC	-0.0036	-6.24
7.	Common to Perf, and CAB_LOC	0.0006	1.03
8.	Common to LEn, and CAB_EC	0.0009	1.54
9.	Common to Perf, and CAB_EC	0.0004	0.67
10.	Common to CAB_LOC, and CAB_EC	0.0077	13.30
11.	Common to LEn, Perf, and CAB_LOC	-0.0005	-0.87
12.	Common to LEn, Perf, and CAB_EC	0.0006	1.05
13.	Common to LEn, CAB_LOC, and CAB_EC	-0.0006	-1.11
14.	Common to Perf, CAB_LOC, and CAB_EC	0.0009	1.62
15.	Common to LEn, Perf, CAB_LOC, and CAB_EC	0.0002	0.32
16.	Total	0.0580	100.00

Interpretation: From the table above, the most important variable of the regression model is Learning Environment which explains uniquely 41.29% variance in self-handicapping tendency of undergraduate students. The second most important variable with its unique contribution is the Locus of Causality dimension of Causal atrributional beliefs predictor with 19.86% variance of the dependent variable uniquely explained by it. The variable perfectionism also uniquely explains 10.22% of variance in the dependent variable. The external control dimension of Causality dimension of Causal atrributional beliefs predictor uniquely explains the

least amount variance, that is, 3.10%, in self-sabotaging variable.

Apart from the unique contributions, the predictor variables in various combinations also make vital contributions and impact the variance in the dependent variable, which are explained by the commonality component coefficients. The variables Learning environment and perfectionism together explain 14.23% variance in the dependent variable. Similarly, the predictors dimension variables of Causal attributional beliefs, Locus of Causality and External Control, come together to explain 13.3 % variance in the criterion variable. Learning environment and locus of causality together explain 6.24% variance in the dependent variable, followed by the combination of three predictors. Perfectionism, Locus of causality and External control explaining 1.62% variance in self-handicapping tendency variable of the college going students. Finally, the combination of all the four predictors explain attributional beliefs, Locus of Causality and External Control, come together to 0.32% variance in the criterion variable. Together, along with the minor variances explained by the left over combinations of the predictor variables, the accountability explain of the complete variance of 100% in the dependent variable gets estimated.

Conclusion: The present chapter completed the data analysis and mentioned the interpretation of the statistical results obtained as per the objectives of this study. In the next chapter five – Conclusion, Educational Implications, Recommendations, Limitations and Suggestions for Future Research, the educational after effects of thesefindings, recommendations, limitations and suggestions for research in future will be discussed.

CHAPTER-V
CONCLUSIONS, EDUCATIONAL IMPLICATIONS, RECOMMENDATIONS, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

5.1 INTRODUCTION

The previous chapter the collected data was analysed to reveal the quantitative achievement of the objectives of this study. In this chapter, the researcher discusses overview of the study, primary finding and secondary findings, their educational implications, limitations, recommendations, suggestions for future studies and the conclusion.

5.2 OVERVIEW OF THE STUDY

The researcher has years of experience in the field of education and served the social institutions associated with this sector in different parts of her home state. This vivid exposure of the ground realities associated with tertiary level education germinated in her multiple queries related to the dynamics of learning in a conductive environment and various factors which dictate such a process. To find scientific explanations for these queries, the researcher embarked on the journey of this present study. In the beginning, thorough literature review in the field of interest was conducted to unearth certain research variables of importance, followed by the acquisition of the knowledge of their state of the art. This led to the formulation of the research objectives and hypotheses of the study. The need and significance of the study were realized in the consecutive deliberations followed by identification of tools which comprehensively covered the essence of the identified variables in content. The need to construct a fresh tool for the variable self-handicapping was felt, whereas the latest tool to measure attributional beliefs in the Indian context was chosen. The tools to measure the remaining variables of Learning environment and perfectionism were also chosen taking into consideration their comprehensiveness and theoretical rigor. It was followed by designing of the methodology to collect data of this descriptive study using survey method under its cross-sectional nature. The state of Punjab selected for the study was accordingly divided into three locations of Majha, Malwa and Doaba and the selection of undergraduates sample subjects was done using stratified random sampling. The tools requiring validation were statistically made sound using

appropriate techniques and the findings of the study were obtained as per the formulated objectives. The study related after effects of these findings will be discussed in details in the sections below.

5.3. CONCLUSIONS RELATED TO STUDY FINDINGS:

The conclusive analysis of the findings as per the research objectives of the study are discussed below:

5.2.1 MINOR FINDINGS OF THE STUDY:

5.3.1.1. Objective 1: To explore the self-handicapping tendencies among higher education students.

- The frequencies of the scores of the variable self- handicapping tendency were found to be at the higher end of the scale, hence inferring the presence of this variable in the sample subjects of Punjab.
- The mean Self-handicapping tendency of higher secondary students is found to lesser than the average score of the scale. It leads to the inference that this undesirable trait is present in considerable proportion in the undergraduates of Punjab pursuing general specialization courses.
- The extent of dispersion in the data, was also estimated using standard deviation and it could lead to the conclusion that there exists a relative homogeneity of the sample subjects with respect to the obtained estimates of the measured trait in them.
- Skewness and Kurtosis in the data of this variable are found to be under limits deducing the near normal tendency of the obtained data.

5.3.1.1 Objective 2: To study the causal attributional beliefs, learning environment, and perfectionism exhibited by higher education students.

- The frequencies of the scores of the dimensions of the variable Causal attributional belief, Locus of Causality and External Control were found to be at the higher end of the scale, hence inferring the presence of these dimensional variables in the sample subjects of Punjab.
- The mean of the dimensions of the variable Causal attributional belief, Locus of Causality and External Control, in higher secondary students, is found to higher than the average score of the scale. However, mean Locus of control was slightly lesser than mean external control, inferring the presence of externalization of the causes of actions among the undergraduates of Punjab pursuing general specialization

courses.

- The extent of dispersion in the data, estimated using standard deviation for the two dimensions lead to the conclusion that there is relative homogeneity of the sample subjects with respect to the obtained estimates of these two factors of causal attributional beliefs.
- The estimates of Skewness and Kurtosis in the data of the dimension Locus of Causality was found to be under limits deducing near normal tendency of its obtained data.
- Though the Skewness estimate of the dimension External control was within limits, its kurtosis curve was leptokurtic, inferring fluctuations in its estimates away from the mean value.
- The frequencies of the scores of the dimensions of the variable Causal attributional belief, Stability and Personal Control were found to be at the higher end of the scale, hence inferring the presence of these dimensional variables in the sample subjects of Punjab.
- The mean of the dimensions of the variable Causal attributional belief Stability and Personal Control, in higher secondary students, is found to higher than the average score of the scale. However, mean stability was slightly higher than mean personal control, inferring the more temporal presence of this trait in the subjects, and lesser tendency of internalization of the causes of actions among the undergraduates of Punjab pursuing general specialization courses.
- The extent of dispersion in the data, estimated using standard deviation for the two dimensions lead to the conclusion that there is relative homogeneity of the sample subjects with respect to the obtained estimates of these two factors of causal attributional beliefs.
- The estimates of Skewness and Kurtosis in the data of the dimension Perosnal control was found to be under limits deducing near normal tendency of its obtained data.
- Though the Skewness estimate of the dimension Stability was within limits, its kurtosis curve was leptokurtic inferring fluctuations in its estimates away from the mean value.
- The frequencies of the scores of the variable learning environment were found to be at the higher end of the scale, hence inferring the presence of this variable in the sample subjects of Punjab.

- The mean learning environment of higher secondary students is found to higher than the average score of the scale. It leads to the inference that this desirable feature of undergraduate educational institutions is present in considerable proportion in the state of Punjab offering general specialization courses.
- The extent of dispersion in the data, was also estimated using standard deviation and it could lead to the conclusion that there exists a relative homogeneity of the sample subjects with respect to the obtained estimates of the measured trait in them.
- Skewness and Kurtosis in the data of this variable are found to be under limits deducing the near normal tendency of the obtained data.
- The frequencies of the scores of the variable Perfectionism were found to be at the higher end of the scale, hence inferring the presence of this variable in the sample subjects of Punjab.
- The mean estimate of Perfectionsim of higher secondary students is found to higher than the average score of the scale. It leads to the inference that this desirable feature of undergraduate students pursuing general specialization courses is present in considerable proportion in the state of Punjab.
- The extent of dispersion in the data, was also estimated using standard deviation and it could lead to the conclusion that there exists a relative homogeneity of the sample subjects with respect to the obtained estimates of the measured trait in them.
- Though the Skewness estimate of the variable Perfectionism was within limits, its kurtosis curve was leptokurtic inferring fluctuations in its estimates away from the mean value.

5.3.2 MAJOR FINDINGS OF THE STUDY:

5.3.2.1 Objective 3: To find out significant difference in the mean self-handicapping tendency, mean causal attributional beliefs, mean learning environment and mean perfectionism among higher education students on the bases of their gender, locality and discipline.

- Male and female college going students did not differ significantly with respect to the difference in their mean self-handicapping tendency.
- The students of Majha, Malwa and Doaba localities did not differ significantly as far as the difference in their mean self-handicapping tendency was concerned.

- The students from Science, arts and commerce disciplines did not differ significantly from each other with respect to the difference in their mean self-handicapping tendency.
- Male and female college going students did not differ with each other significantly with respect to the difference in their mean causal attributional beliefs – Locus of causality dimension
- Male undergraduates have more mean c a u s a l attributional beliefs – External control trait than female counterparts.
- Male undergraduates have more mean c a u s a l attributional beliefs – Stability trait than female counterparts.
- Male undergraduates have more mean c a u s a l attributional beliefs – Personal control trait than female counterparts.
- Students from three localities differed significantly with respect to their mean causal mean attributional beliefs – Locus of Causality estimate. In particular, students from Doaba locality of Punjab state displayed more of this trait when compared to students of Malwa region.
- Students from three localities differed significantly with respect to their mean causal mean attributional beliefs – External Control estimate. In particular, students from Majha locality of Punjab state display more of this trait when compared to students of Malwa region.
- Students from the three regions of Punjab did not differ much with respect to the mean causal mean attributional beliefs – Stability estimate.
- Students from three localities differed significantly with respect to their mean causal mean attributional beliefs – Personal Control estimate. In particular, students from Majha locality of Punjab state display more of causal mean attributional beliefs – Personal Control trait when compared to students of Doaba region.
- Significant difference in mean causal attributional beliefs – Locus of Causality between students of Science and arts disciplines respectively was found. In particular, students of Science discipline of Punjab state displayed more of this trait when compared to students of Arts discipline.
- Significant differences in mean causal attributional beliefs – External Control

dimension among the students of three disciplines were found. In particular, students of sciences discipline displayed more of this trait during their comparison with students of arts and commerce disciplines respectively.

- Significant differences in mean causal attributional beliefs – Stability dimension among the students of three disciplines were found. In particular, students of sciences discipline displayed more of this trait during their comparison with students of arts and commerce disciplines respectively.
- Significant differences in mean causal attributional beliefs – Personal control dimension among the students of three disciplines were found. In particular, students of sciences discipline displayed more of this trait during their comparison with students of arts and commerce disciplines respectively.
- The mean learning environment estimate of female college students was found to be significantly different and lesser in estimate when compared to the mean of the same variable in male college students.
- The mean learning environment of Doaba locality students was found to be significantly different from the mean estimate of the same variable of Majha locality students, with estimate higher in the students belonging to the latter locality.
- No significant difference in mean learning environment was found between the students belonging to localities of Doaba and Malwa, and Majha and Malwa localities respectively.
- Significant difference in mean learning environment of arts students with commerce and science stream students was found. In both the cases, arts students had the lesser estimate of the discussed variable.
- No significant difference in mean learning environment was found between students of science and commerce disciplines.
- The mean perfectionism estimate of female college students was found to be significantly lesser than the mean of the same variable in male college students.
- No significant difference among higher education students from the three localities of Punjab with respect to their perfectionism trait was found.
- No significant difference among higher education students from the three disciplines with respect to their perfectionism trait was found.

5.3.2.2 Objective 4: To find out the impact of causal attributional beliefs, learning environment, and perfectionism on the self-handicapping tendencies of higher education students.

- The link between the self-handicapping tendency and Causal attributional beliefs – Causality was found to be weak in strength and positive in nature, but statistically significant.
- The link between the self-handicapping tendency and Causal attributional beliefs – External Control was found to be weak in strength and positive in nature, but statistically significant.
- No significant covariance between the self-handicapping tendency and Causal attributional beliefs – Stability dimension was found.
- No significant covariance between the self-handicapping tendency and Causal attributional beliefs – Personal control dimension was found.
- The link between the self-handicapping tendency and Learning environment was found to be weak in strength and negative in nature, but highly statistically significant.
- The covariance between the self-handicapping tendency and Perfectionism was found to be weak in strength and negative in nature, but highly statistically significant.
- The independent variable, Causal attributional beliefs – Locus of Causality of the college students, predicts self-handicapping tendency weakly but highly significantly, explaining1.6% of variance in the dependent variable for a unit change in it.
- The independent variable, Causal attributional beliefs – External Control of the college students, predicts self-handicapping tendency weakly but highly significantly, explaining 1.2% of variance in the dependent variable for a unit change in it.
- The independent variable, Learning environment of the college students, predicts self-handicapping tendency weakly but highly significantly, explaining 2.9% of variance in thedependent variable for a unit change in it.
- The independent variable, Perfectionism of the college students, predicts self-handicapping tendency weakly but highly significantly, explaining 1.6 % of variance in the dependent variable for a unit change in it.

- The variance inflation factor estimates of all the four predictor variables, Causal attributional beliefs – Locus of causality, Causal attributional beliefs – External Control, learning environment and perfectionism displayed absence of multicollinearity among them.
- The independent variables, Causal attributional beliefs – Locus of Causality, Causal attributional beliefs - External Control, Perfectionism and Learning environment of the college students, simultaneously predicted self-handicapping tendency weakly but highlysignificantly, explaining 5.8% variance in the criterion variable.
- The most important variable of the regression model is Learning Environment which explains uniquely 41.29% variance in self-handicapping tendency of undergraduate students.
- The second most important variable with its unique contribution is the Locus of Causality dimension of Causal atrributional beliefs predictor with 19.86% variance of the dependent variable uniquely explained by it.
- The variable perfectionism also uniquely explains 10.22% of variance in the dependent variable. The external control dimension of Causality dimension of Causal atrributional beliefs predictor uniquely explained the least amount of variance, that is, 3.10%, in self-sabotaging variable.
- The variables Learning environment and perfectionism together explained 14.23% variance in the dependent variable.
- The predictors dimension variables of Causal attributional beliefs, Locus of Causality and External Control, came together to explained 13.3% variance in the criterion variable.
- Learning environment and Locus of causality together explained 6.24% variance in the dependent variable, followed by the combination of three predictors, Perfectionism, Locus of Causality and External control explaining 1.62% variance in self-handicapping tendency variable of the college going students.
- The combination of all the four predictors explain 0.32% variance in the criterion variable.
- Together, along with the minor variances explained by the left over combinations of the predictor variables, the accountability of the complete variance of 100% in the dependent variable was estimated.

5.4 EDUCATIONAL IMPLICATIONS OF THE RESEARCH FINDINGS

Educational implications of the findings of a research study involve a discussion onthe importance of the research findings to the field per se, on their practical relevance, and scope of implemention either through policy formulations or through best practices. The educational implications of the findings of the present study are discussed below:

- There considerable presence of all the four research variables of this study as traits in the college going students of Punjab and hence the relevance and need of undertaking similar studies to further investigate the interplay among these variables in the educational institutions of the state at all levels at a larger scale by the concerned stakeholders.
- The relative homogeanity of the sample subjects with respect to the research variables as indicated by the measure of dispersion, implies towards the possibility of blanket implementation of any policy or best practice pertaining to these variables across the state.
- The nearly fair symmetry in the data of the research variables allows for the application of parametric tests, and hence lead to the extension of the relevant findings of this study from on to the entire undergraduate student population of the Punjab state.
- The parents of the college students, their teachers and the administrators need to acknowledge the menacing long effects of self-sabotaging tendency in the subjects on their academic performance and mental health, since this trait is found to be prevalent among students cut across, gender, discipline and locality of the state.
- The science faculty members of Majha region in particular, need to be trained by psychologists on strategies to promote appropriate causal attribution tendencies in their classroom during science instruction, in particular to their male students.
- With respect to arts discipline, its curriculum needs a change, along with effective pedagogy and engaging classroom environment.
- Female students, irrespective of the discipline and the locality of the state, have lesser tendency of displaying perfectionism in studies, when compared to male counterparts,

which can impact their academic performance in general.

Self-sabotaging tendency can get induced as a trait in college students, either independently or in conjunction, by an externally placed and controlling cause of behavior, in a relatively competitive and academically stressful environment, demanding high standards and exactness from them.

5.5 RECOMMENDATIONS

- The stakeholders of the college students, namely the faculty members of colleges and universities, the parents and the administrators need to be cognizant of the important finding that the college level students of the state of Punjab are prone to self- handicapping behavior and be aware of its triggering antecedants.
- The present study's findings strengthen the ground-breaking work of Rhodewalt (1990, 2008) in exploring the role of attribution theory on self-handicapping where it was found that the very reason individuals involve in self-handicapping behaviour is to control one's attributions about the self or protect one's perception of self- competence or self-esteem from a threat in the event of a failure (Rees et al., 2005). Attributional beliefs exist to help individuals organize, simplify and explain their daily-life experiences using the perception they hold on the factors like locus of causality, stability and controllability. Hence, college students need to be educated on the manner they ascribe causes to success or failure happening in their academic life so that they can successfully stray away from the damaging effects of self- handicapping tendency trait.
- Since learning environment impacts the self-handicapping tendency of students at tertiary levels the most, it is critical that government authorities leave no stone unturned in the recruitment of quality teachers in the universities and continue to evaluate their performance on regular basis.
- Parents at home and the faculty members at college, should place special emphasis on ensuring that the male students in particular spend consideravle amount of quality study time at home and at college by creating conducive learning environment.
- Another dimension of quality learning environment is its accessibility through affordable fees which can be regulated centrally by the government. Allocation of funds should be provided all the universities of Excellence, so that they can be well spent in updating the teaching related infrastructure of these institutions.

- The curriculum of the courses in the universities and colleges must be updated regularly in conjunction with the inputs received from industry, so that the students while pursuing these courses are highly optimistic of being placed after completion of their course. This aspect of the learning environment would go a long way in reducing self-handicapping tendencies among college students.
- More the administrators would strive to make the environment of their institutions conducive to education, better will be the impact of such efforts in curbing the debilitating tendency of self-sabotagging on the undergraduate students. In the present study, this finding emerged from the sample subjects of science, arts and commerce students, while the exploration of the relationship between these two variables on engineering and technology students can be a vital contribution to the literature considering the contribution STEM education has on the Gross domestic product (GDP) of a nation (Ahmadov, 2020).
- Zaiba and Akshaya (2024) presented the impact of high parental expectations on the development of the trait of perfectionism in the learners. Such a trend is very prevalent in the Indian context, compounded by the expectations of the relatives of the learners. Since it is well documented that this trait can heighten the chances of acquiring the maladaptive strategy of self-sabotagging, the parents should be made aware of the negative consequences of their extreme expectations on the mental health f their wards, especially in the case of female students.
- Teachers, parents and the administrators need to create a promoting environment of positive sense of perfectionism variable at home and in the college/ university campus, which can help in successfully combating the harmful psychological influences of performance debilitating self-handicapping tendency in these students.
- Guest lecture sessions must be regularly conducted by inviting psychologists in educational institutions to bring awareness in the college students about the benefits of adaptive perfectionism and demerits of maladaptive perfectionism, so that excessive stress from expectations do not make the students stray away from putting their optimal efforts into academics.
- Extending Egan et al., (2024) work, research on the effectiveness of artificial intelligence (AI) based interventions to mitigate the negative effects of perfectionism using "*Cognitive Behaviour Therapy for Perfectionism (CBT-P)*" should be taken up in India as well. Since the youth of this uses AI on a regular basis, the perception of these subjects to use this technology as an invention tool can be expected to be welcoming to

mitigate the negative consequences of perfectionism trait. However, such an exercise must be backed by research based empirical findings.

- Attributional beliefs depend on the locus of centrality, stability and controllability of the factors as per the perceptions of individuals. Hence students must be provided workshop training on altering their failure related beliefs on the lack of a strategy in place to deal with the academic challenge, rather than blaming self or feeling helpless about the demanding study related situations.
- The lack of statistical rigor in the application of the IRT and Mokken Scale Analysis was fully utilized in validating the tools of perfectionism and learning environment scales which had large number of items of 45 and 112 respectively. Such approaches can be incorporated by investigators in future studies especially in the context of validation of lengthy items of critical variables paving the way for availability of robust psychological tools in the Indian context, and hence augmenting research in educational psychology.
- Ordinal Cronbach alpha as an estimate of internal consistency type of reliability for items belonging to questionnaire like tools and data obtained from survey research, was discussed and estimated in this study along with the mostly reported Cronbach's alpha which erroneous assumes the data type of the data obtained from survey questionnaires to be continuous interval, in place of categorical ordinal. This good practice can be adopted in the future studies in general make robustly consistent psychological tools be available for education research practioners.
- Guttman lambda, MS coefficient and Latent Class Reliability coefficients are some of the lesser known and reported types of reliability coefficients which are way more efficient in this estimation of the psychometric property of reliability of any instrument, when compared to the Cronbach's alpha. The present study discussed and shared the means of the estimation of these reliability coefficients which are recommended to be used and reported in future studies.
- The estimation of commonality coefficients to find the most important predictor variable, along with the unique and combined variance of the involved predictor variables on the criterion variable, is a lesser known and novel statistical practice which can be recommended to be a regular exercise in all future studies involving multiple regression analysis. Such an initiative can help in gaining deeper insights into the relationships existing among multiple academically relevant variables, leading to effective policy formulations in school and college levels across the country.

- Over all, the significant finding of the collective influence of a personal trait like perfectionism in a college student, an environment trait like learning environment where he or she studies and another personal variable of student's attributional beliefs on his or her self-handicapping tendencies, calls for the due attention of the stakeholders of tertiary level education in the country to acknowledge it and conceive appropriate policy framework to curb the undesirable academic effects of self-handicapping tendency in the future human capital, in the form of these college students through the promotion of favourable learning environment in educational institutions and perfectionism in the individuals, while regulating the trait of attributional beliefs in them.

5.6 LIMITATIONS

The present study contains and encountered certain aspects which make up its limitations as discussed below:

- The study was restricted to undergraduate sample subjects of Science, Commerce and Arts streams only belonging to the North Indian state of Punjab.
- The tool to measure learning environment in this study is old, though comprehensive, and hence requires a relook literature wise and statistically too for ensuring of its validity in present time.
- The newly developed tool of self-handicapping would require further validations in multiple contexts and on various populations / sample subjects from tertiary level in India.
- None of the tools used in this study were tested for measurement invariance with respect to gender, locale, stream or culture in the Indian context.
- Since the primary means of data collection was survey method through questionnaires, the responses of the sample subjects could have suffered from social desirability bias.
- Owing to very nature of the descriptive research design, the investigator gathered a cross-sectional study data which provided a glimpse or snapshot of the studied phenomenon with respect to time, without no deeper understanding of the evolution of the research variables over time in the sample subjects.

5.7 SUGGESTIONS FOR FUTURE STUDIES

- The inter-relationship of the present study variables can be studied through the mutualism perspective based, state of the art Network Psychometrics approach (Epskamp, 2016; Epskamp and Fried, 2016; Epskamp, Borsboom and Fried, 2018), instead of the simplistic frequentist statistics based regressional study on STEM undergraduates and on students of other professional disciplines.
- The mentioned limitations pertaining to the used instruments of this research can be addressed using the network approach along with conducting of network structure consistency test (van Borkulo et al., 2023) to develop measurement invariant networks of psychological variables and their scales, which are structurally consistent (Christensen et al., 2020) too.
- All the four variables of perfectionism, learning environment, attributional beliefs and self-handicapping are related to the nebulous construct of self- regulated learning in tertiary level (Ashraf et al., 2023; Bhalla and Chechi, 2019; Kurtovic et al., 2019; Dong et al., 2023; Song, 2018; Amani and Kiani, 2017), and hence a comprehensive study can be undertaken to gain deeper insight on the interrelationships between the variables.
- Mofield and Peters (2018) studied the differences between b ehaviour, advanced, and average American leaners with respect to their level of perfectionism. Such studies can be taken up in the context of India as well.
- Perfectionism has been studied as a culturally sensitive construct by Pulford et al., (2005) and hence the influence of this demographic construct can be studied in a culturally diverse country like India, since the present study findings are specific to the Northern Indian state of Punjab.

5.7 CONCLUSION

The studies on the economic impact of universities through Gross Domestic Product (GDP) have shown that presence of these quality knowledge centres can not only produce qualified human capital but also promote healthy democratic culture in the nation (Valero and Van Reenen, 2018). However, until the learning environment of these universities continue to maintain their high standards and promote certain critical psychological traits in the students at the tertiary level like Perfectionism and Attributional beliefs, as outlined in the study, the students pursuing various courses in

these institutions can develop undesirable qualities like self-handicapping tendencies. Such eventualities can severely impact the investments made on higher education and the prospects of getting tangible return of investment in future. It is hence imperative on the part of the higher authorities associated with the tertiary level of education in this country to secure thriving learning environments, where students beaming with intrinsic causal attributional beliefs and adaptive version of perfectionism can perform to their optimal best in academics and successfully stay away from any of the damaging effects of self-handicapping tendencies on them.

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APPENDIX A

The Big Three Perfectionism Scale (BTPS)

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with the following statements. There are seven possible responses to each statement ranging from „Disagree Strongly" (number 1) to „Agree Strongly"(number 5).

Disagree strongly	Disagree	Neither agree nor disagree	Agree	Agree strongly
1	2	3	4	5

1. I strive to be as perfect as possible.	1 2 3 4 5
2. I have doubts about most of my actions.	1 2 3 4 5
3. I am highly critical of other people"s imperfections.	1 2 3 4 5
4. Other people acknowledge my superior ability.	1 2 3 4 5
5. People are disappointed in me whenever I don"t do something perfectly.	1 2 3 4 5
6. I have difficulty forgiving myself when my performance is not flawless.	1 2 3 4 5
7. I am quick to point out other people"s flaws.	1 2 3 4 5
8. When I make a mistake, I feel like a failure.	1 2 3 4 5
9. Everyone expects me to be perfect.	1 2 3 4 5
10. I have a strong need to be perfect.	1 2 3 4 5
11. I am never sure if I am doing things the correct way.	1 2 3 4 5
12. It is important to me that other people do things perfectly.	1 2 3 4 5
13. It bothers me when people don"t notice how perfect I am.	1 2 3 4 5
14. I deserve to always have things go my way.	1 2 3 4 5
15. I am the absolute best at what I do.	1 2 3 4 5
16. My value as a person depends on being perfect.	1 2 3 4 5
17. I am very concerned about the possibility of making a mistake.	1 2 3 4 5
18. When my performance falls short of perfection, I get very mad at myself.	1 2 3 4 5
19. I judge myself harshly when I don"t do something perfectly	1 2 3 4 5
20. I always need to be aiming for perfection to feel "right" about myself.	1 2 3 4 5
21. I know that I am perfect.	1 2 3 4 5
22. I have doubts about everything I do.	1 2 3 4 5
23. I could never respect myself if I stopped trying to achieve perfection.	1 2 3 4 5
24. The idea of making a mistake frightens me.	1 2 3 4 5
25. I feel uncertain about most things I do.	1 2 3 4 5

26. I feel disappointed with myself, when I don‟t do something perfectly 1 2 3 4 5

27. I never settle for less than perfection from myself. 1 2 3 4 5

28. I am entitled to special treatment. 1 2 3 4 5

29. It is important to me to be perfect in everything I attempt. 1 2 3 4 5

30. I feel dissatisfied with other people, even when I know they are trying their best. 1 2 3 4 5

31. Other people secretly admire my perfection. 1 2 3 4 5

32. I tend to doubt whether I am doing something “right”. 1 2 3 4 5

33. I expect other people to bend the rules for me. 1 2 3 4 5

34. People make excessive demands of me. 1 2 3 4 5

35. When I notice that I have made a mistake, I feel ashamed. 1 2 3 4 5

36. People complain that I expect too much of them. 1 2 3 4 5

37. I demand perfection from my family and friends. 1 2 3 4 5

38. Striving to be as perfect as possible makes me feel worthwhile. 1 2 3 4 5

39. I expect those close to me to be perfect. 1 2 3 4 5

40. My opinion of myself is tied to being perfect. 1 2 3 4 5

41. I get frustrated when other people make mistakes. 1 2 3 4 5

42. I do things perfectly, or I don‟t do them at all. 1 2 3 4 5

43. Everything that other people do must be flawless. 1 2 3 4 5

44. Making even a small mistake would upset me. 1 2 3 4 5

45. People expect too much from me. 12345

APPENDIX B

Self-handicapping Scale

Details of the Respondents

Name……Age……...Gender…… ……. Region of Punjab……City……College…… …… Stream…..e-mail address……

INSTRUCTION: Please indicate (by ticking for each item) the degree to which you agree or disagree with each of the following statements as a description of the kind of person you think you are most of the time.

SA - Strongly Agree NS - Not Sure DA – Disagree

A – Agree SDA - Strongly Disagree

NO		SA(4)	A(3)	NS(2)	DA(1)	SDA(0)	
1	When I do something wrong, my first intention is to blame the circumstances.						
2	Sometimes I get depressed that even easy tasks become difficult.						
3	I would have done lot better if I tried harder.						
4	I generally hate to be in any condition other than "at my best".						
5	I feared being out of control in a situation						
6	My anxiety interferes with my performance						
7	My worthiness depends on how well I do, so I must do well.						
8	Someday, due to use of medicines I think I might "get it all together".						

9	Sometimes, I participate in final task without increase effort or with reduce effort.						
10	Sometimes purposely, I get involved in a lot of co-curricular activities, so don‟t do as well on my work as hoped.						
11	Sometimes I suffer with severe headache in a performance situation.						
12	Fearing of making mistakes and trauma in early childhood, are the internal						
	factors which influence my performance.						

Thank you for your patience time to complete this questionnaire

Signature……Date……

……. Place……

Appendix C

THE REVISED CAUSAL DIMENSION SCALE (CDS II)

Demographic Data

Please answer the following questions :

Age :

Sex : Male

Female

Please state your degree program :

Please state your Major:

Please state what year of your program you are in :

Is this your first degree : Yes

No

How many years have you attended this college/University :

1 2 3 4 5 6 &

Do you attend as : Part-time Full-time

Where do you like :ResidenceOff-campus

Are you participating in Acadia Advantage program in any of your courses :

Yes No

SURVEY FORM (DEMOGRAPHIC PROFILE)

NAME……. **NAME OF COLLEGE…….**

PROGRAM……. **SEMESTER……**

THE COURSE YOU STUDIED IN PREVIOUS SEMESTER……

Fill the following information:

What was the numerical score or letter grade you made on the exam of selected course in the previous semester …/100,if numeral score…….

Do you consider the score reported above to be successful or unsuccessful? NOTE 1) If Successful fill Question no A, If Unsuccessful the fill Question No.B

A(You feel the cause that you received this high score is due to (you can tick more than one options also)	**B (You feel the cause that you received this low score is due to (you can tick more than one options also)**
Your high ability in subject	Your low ability in subject
You studied unusually hard for the exam	You did not study in exam
You always study hard for the exam	You never study for exams
You were in good mood when you took the exam	You were in bad mood when you took the exam
You were very lucky	You were very unlucky
The exams was very easy	The exams was very hard
The teacher tried unusually hard to help you do well on the exam	The teacher did not try to help you do well on the exam
The teacher always tries very hard to help students do well on the exam	The teacher never tries very hard to help students do well on the exam

In your opinion ,what was the one main cause among the above selected reasons for your achieved score.. ……

Instructions: Think about the cause you have written on questions above .The items below concern your impressions or opinions of this cause for your performance .Circle one number for each of the following questions:

Is the cause something:

	LOCUS OF CAUSALITY		
1	**that reflects an aspect of yourself**	9 8 7 6 5 4 3 2 1	**reflects an aspect of the situation**
6	**inside of you**	9 8 7 6 5 4 3 2 1	**outside of you**
9	**something about you**	9 8 7 6 5 4 3 2 1	**something about others**
	EXTERNAL CONTROLLABILITY		
5	**over which others have control**	9 8 7 6 5 4 3 2 1	**over which others have no control**
8	**under the power of other people**	9 8 7 6 5 4 3 2 1	**not under the power of other people**
12	**other people can regulate**	9 8 7 6 5 4 3 2 1	**other people cannot regulate**
	STABILITY		
3	**permanent**	9 8 7 6 5 4 3 2 1	**temporary**
7	**stable over time**	9 8 7 6 5 4 3 2 1	**variable over time**
11	**unchangeable**	9 8 7 6 5 4 3 2 1	**changeable**
	PERSONAL CONTROLLABILITY		
2	**manageable by you**	9 8 7 6 5 4 3 2 1	**not manageable by you**
4	**you can regulate**	9 8 7 6 5 4 3 2 1	**you cannot regulate**
10	**over which you have power**	9 8 7 6 5 4 3 2 1	**over which you have no power**

Appendix D

The College/University Environment Scale

Details of the Respondents

Name……Age……...Gender…… ……. Region of Punjab……City……College…… …… Stream…….e-mail address……

The purpose of this questionnaire is to evaluate the college/university you are presently enrolled in. Please selected the most appropriate response for the following items :

0 – never

1 – rarely

2 – sometimes

3 – often

4 – always

Input

Resources :

Financial

Financial support for my education is available from :					
Self/family	0	1	2	3	4
Community organizations	0	1	2	3	4
business	0	1	2	3	4
university (scholarship, bursaries)	0	1	2	3	4
government loans	0	1	2	3	4
trust fund/benefits plan	0	1	2	3	4
bank/private loan	0	1	2	3	4

Physical

The college/university grounds, residence, classrooms and buildings are :

Conveniently located	0	1	2	3	4
Open convenient hours	0	1	2	3	4
clean	0	1	2	3	4
reasonable size	0	1	2	3	4
barrier-free (handicap access)	0	1	2	3	4
suitable for learning and teaching	0	1	2	3	4
up-to-date modern	0	1	2	3	4

Process

Administration :

Procedure

Administrative services, such as registration and student‟s accounts are :

Efficient	0	1	2	3	4
Clearly defined	0	1	2	3	4
flexible	0	1	2	3	4
reasonably priced (tuition, residence)	0	1	2	3	4
available (outside of office hours)	0	1	2	3	4
open to an appeal process	0	1	2	3	4
up-to-date (e.g., mail-in registration)	0	1	2	3	4

Organization

Assistance for academic questions, such as registration procedures or students status questions is available from :

administration	0	1	2	3	4
professors office hours	0	1	2	3	4
academic departments	0	1	2	3	4
supports services (library, computer centre)	0	1	2	3	4
organized help sessions (labs, tutorials)	0	1	2	3	4
campus societies	0	1	2	3	4
counseling centre	0	1	2	3	4

Facilitation :

Teaching Facilitation

Teaching is facilitated by :					
Traditional methods (lectures, overheads, chalkboards)	0	1	2	3	4
Computer technology	0	1	2	3	4
Audio and video technology	0	1	2	3	4
Resources outside the classroom (library, computer lab)	0	1	2	3	4
Extra curricular activities	0	1	2	3	4
Guest speakers/special lectures	0	1	2	3	4
Up-to-date reference material	0	1	2	3	4

Technical

The following technical support is up to data :					
Computer facilities (programs, software)	0	1	2	3	4
Audio resources	0	1	2	3	4
Video resources	0	1	2	3	4
Library holding and services	0	1	2	3	4
Internet, world wide web, e-mail etc.	0	1	2	3	4
Lab equipment	0	1	2	3	4
Telephone, TV cable etc.	0	1	2	3	4

Evaluation

Professors are evaluated by students departments or both :					
On a regular basis	0	1	2	3	4
In a fair manner	0	1	2	3	4
In a variety of ways	0	1	2	3	4
On a standardized format	0	1	2	3	4
With adequate feedback	0	1	2	3	4
For their teaching style	0	1	2	3	4

For their research projects	0	1	2	3	4
Students are evaluated or graded in courses by professors :					
On a regular basis	0	1	2	3	4
In a fair manner	0	1	2	3	4
In a variety of ways	0	1	2	3	4
On a standardized format	0	1	2	3	4
With adequate feedback	0	1	2	3	4
With an opportunity for appeal	0	1	2	3	4
Similar to other colleges/universities	0	1	2	3	4

Learning :

Curriculum

Courses are available at this institution on the following topics :					
Computer technology	0	1	2	3	4
On the job training/practical experience	0	1	2	3	4
Business management, commerce, etc.	0	1	2	3	4
Theoretical/scholarly issues	0	1	2	3	4
Lab work	0	1	2	3	4
Arts (languages, history etc.)	0	1	2	3	4
Sciences (biology, chemistry, etc)	0	1	2	3	4

Learning Styles

Students can select courses based on :					
Course content	0	1	2	3	4
Schedule format (1 & ½ hr, 3 hr)	0	1	2	3	4
Grading method	0	1	2	3	4
Teaching format (correspondence lecture)	0	1	2	3	4
Educational/training requirements	0	1	2	3	4

Time of day/week/term	0	1	2	3	4
Full-time or part-time status	0	1	2	3	4

Effectiveness

The instructors facilitate learning with :

Competent and effective lectures	0	1	2	3	4
Sensitivity to students needs	0	1	2	3	4
Up-to-date knowledge	0	1	2	3	4
Availability during and after class	0	1	2	3	4
Fair and consistent evaluations	0	1	2	3	4
Personal interest in the course material	0	1	2	3	4
Practical experience in the field	0	1	2	3	4

Interaction :

Social and Academic Support

Support services available include :

Career counseling	0	1	2	3	4
Peer counseling	0	1	2	3	4
Academic counseling	0	1	2	3	4
Personal counseling	0	1	2	3	4
Study skills training	0	1	2	3	4
Financial counseling	0	1	2	3	4
Individual needs (interpreters, 2nd language tutoring, physical assistance etc.)	0	1	2	3	4

Influence

Students have a say in :

Course selection	0	1	2	3	4
Program requirements	0	1	2	3	4
Course content	0	1	2	3	4
Evaluation method	0	1	2	3	4

Teaching style	0	1	2	3	4
Learning style (assignment selection)	0	1	2	3	4
University issues and policies	0	1	2	3	4

Social Activities and Recreation

Social and recreational opportunities are available in the following settings :

Classrooms	0	1	2	3	4
Residence	0	1	2	3	4
Sports activities	0	1	2	3	4
Recreational facilities	0	1	2	3	4
University clubs and organizations	0	1	2	3	4
Extra-curricular activities	0	1	2	3	4
Off-campus facilities	0	1	2	3	4

Output

Education :

Scholarly

At this college/university my intellectual/personal goals are met by :

Course content	0	1	2	3	4
Selection of educational programs	0	1	2	3	4
Challenge of educational requirements	0	1	2	3	4
Field and practical experiences	0	1	2	3	4
Extra curricular activities	0	1	2	3	4
Guest speakers/colloquia	0	1	2	3	4
Quality of faculty and staff	0	1	2	3	4

Job/Career

At this college/university my job/career aspirations are met by :

Job skills training	0	1	2	3	4
On the job experience	0	1	2	3	4
Job/networking contacts	0	1	2	3	4
Selection of education programs	0	1	2	3	4
Scientific, technical training	0	1	2	3	4
Experience as teaching assistant	0	1	2	3	4
Experience as research assistant	0	1	2	3	4