

The Perceived Predictors of Achievement in Management Students: An Innovative Use of Lens Model

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The empirical investigation attempts to delineate the significant predictors of achievement as perceived by the management students of India. Initially, seven dimensions were chosen on the basis of the current practice adopted in business schools. These include a quiz (objective questions), thematic long questions, thematic short questions, individual project, group project, group presentation and case analysis. With the help of the lens model design, students were individually presented with 35 profiles, each profile depicting different magnitudes of attainments on these seven dimensions. Critical examination of idiographic data showed that case analysis emerged as a significant predictor for both academic and placement success for male and female management students. In addition, female students viewed individual project as a significant predictor of academic success. With respect to placement success, female students regarded both thematic questions and individual project as significant predictors while male students viewed thematic long questions and group presentation as significant predictors. Interestingly, it was shown that the students were not aware of the basis of their judgment.

Keywords: Lens model, Idiographic data, Academic evaluation, Academic attainments, Job placement.

Business schools in India are engaging in recruiting efforts to attract bright students. There are currently over 950 B-schools approved by the All India Council for Technical Education (AICTE) in various categories, including the Indian Institute of Management (IIMs), University departments and autonomous private institutes. The proliferation of MBA programmes in India resulted in about 10,000 MBA graduates every year (Joshi, 2006).

The study focuses on the evaluation process. Most of the B-schools are experimenting with respect to weightage given to various components for selecting their students as well as the weightage provided to various components for evaluation (examination) process. What are the criteria of evaluation? What constitutes the stable predictors of assurance of learning goals? This is a fundamental question. However, the present study is concerned about the significant predictors perceived by management students. This objective is fulfilled by the application of the lens model.

Brunswik's Lens Model

In the context of the methodological problem in behavioural science, some of the effective techniques in research have remained underutilized. Brunswik's lens model represents such a scientific attempt. Although, Brunswik explicated the model with a view to enhance the scientific status of the field in cross-cultural research and increase the predictability of human behaviour; this technique is largely confined to academic discussion. Egon Brunswik's (1952) research belongs to the functionalist school concerned with the organism's adaptations to its environment. He postulated that the relationship between the organism and its environment rather than the nature of the organism itself should be the object of behavioural research (Wolf, 2000, 2005).

His methodology opts for representativeness rather than the systematic design of experiments and the idiographic statistical approach. He uses the idiographic statistical approach to indicate that each person's behaviour should meet a

statistical test of regularity or dependability before the behavioural data can be defined as a function of situational variables. This idiographic approach is directly tied to the representative design of experiments when there are sufficient numbers of trials or situations to use significance tests. Brunswick's insistence on the study of individuals in sufficiently representative contexts provides the groundwork for development of specific theories of behaviour and appropriate tests of their validity, unlike traditional nomothetic approaches.

The lens model was initially developed by Egon Brunswik (1952, 1956) and later refined by Hammond (1966). Its unique contribution to behavioural science lies in suggesting a direction for appropriate focus of research and providing an experimental paradigm for such research. Though initially conceived as an approach to studying perception, the lens model has come to be recognized as a complete model of human behaviour. Its refinements and bulk of its applications have been realized within Hammond's social judgment theory. Before initiating the discussion, a word about social judgment theory is in order (Cooksey & Freebody, 1986).

Social Judgment Theory

Many important decisions require information about past events, present events, expected future events or events that for reason other than time are not directly accessible to the decision maker. Decisions of this kind cannot be based on certain knowledge. They need to be based on inferences or judgments. Instances of these kinds of decision problems include weather forecasts, predictions in the changes of economic cycle and several cases of medical diagnosis. A common feature of these judgmental tasks confronts the meteorologist, the economist and the physician for information (cues), on which the judgments are based and not on univocal indicators of the distant future. This means the judgments or the inferences are based on uncertain information. By combining information from various cues, it may be possible to make reasonable and accurate inferences even though each cue in itself is only a poor predictor of the distant event.

According to Brunswik (1952), probabilistic functionalism, the capacity to utilize cues this

way, is a fundamental aspect of the ability to adapt to an uncertain environment. This ability is brought about by repeated experiences with the functional relationship between the cues and the distal variables in the environment.

Judgments made by people are at the heart of the problem of discrimination in a society. To the extent that technologies exist for understanding human judgment, these technologies ought to be used to determine where judgment-related discrimination exists and help redress resulting injustices. To the extent that unaided human judgment has played a central role in the development of the larger problem of discrimination, it may be said that aided human judgment can play an equally central role in the resolution of that problem (Brehmer, 1979).

Keneth R. Hammond (1966) suggests that most human learning, particularly with regards to social adaptation, takes place in probabilistic circumstances. Individuals must learn to function and to adapt in situations, in which the information available is not a completely reliable indication of social reality. It, thus, becomes imperative that the individual gets to identify the most useful sources of information and learn how to combine them in order to maximize his or her adaptation to the social environment. For example, totally reliable rules or procedures are not available to determine who will be an effective leader, whom to employ, and whom to trust, etc. Moreover, since multitude of potential cues exists, which might be useful in making a decision, the individual needs to carefully screen them, identify the most useful cues and in all likelihood come to use several of them in combination for making the most effective judgments.

Lens Model and its Application

The question of why lens model is the best can only be understood by referring to Figure 1. It represents an unknown event (Y_e), which the judge would like to predict. The judge knows the cues, designated X_1, X_2, X_3, \dots in order to predict this event. For example, the unknown event (Y_e) might be the future weather condition. The forecaster does not know exactly what the weather will be, but he or she makes a judgment based on certain cues like wind speed, temperature, barometric pressure etc.

The right side of the lens model, Y_s represents the forecaster's judgment about the weather. The wide arc connecting Y_s and Y_e , labelled r_a , indicates his or her success of achievement as a forecaster over a series of judgments, which is the correlation between his or her judgments and the actual weather conditions, which occur (Beal, Gillis, & Stewart, 1978).

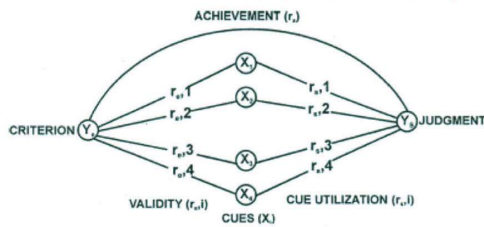


Figure1 : Lens Model

The lens model may be viewed as a representation of any situation, in which individuals are making judgments about a criterion. They have several sources of information available, none of which predicts the criterion perfectly, although some sources of information may be more useful than others in predicting the event. The task of the individual is to identify the most useful sources of information and learn to employ them skilfully in making accurate judgments.

This method requires subjects to make inferences regarding the values of a criterion variable on the basis of cues having uncertain relationships with the criterion. The degree of a subject's success of achievement can be effectively measured by correlating his responses with the actual values of the criterion. Brunswik represented this in terms of a convex lens describing the relationship between human judgment, environmental cues and the object to be judged.

Variations of the model have also been applied to the study of situation where only one system, the cognitive system of the individual, is available for study. The model has also been adapted to the study of situations where three or more systems are interacting. The lens model has been stressed in the context of research methodology (Sahoo & Pattnaik, 2001) and management issues such as leadership (Sahoo & Mohanty, 2010). It has also been used in a

number of other contexts (Sahoo, 2011; Sahoo & Bidyadhar, 1992; Sahoo, Mohanty & Sahoo, 2015).

It is, thus, essential to realize that Brunswik's lens model is a complete model of behaviour, whereas the lens model that has been used by social judgment theorists is a restricted version that applies to the judgment process. The model allows the investigator to confront individuals with tasks, which are formally representative of those they typically encounter. The capacity to adequately represent these conditions renders the model available with regards to a number provided to psychology (Bernieri & Gillis, 1993; Gillis, Bernieri, Wooten, 1995).

Rationale and Objective

As indicated in the introductory section, B-schools in India are experimenting with the adequacy of selection criteria as well as examination criteria. What components are to be included and what would be the weightage of each of the criteria is a fundamental question. Prior to examining the predictive role of each of criteria, an empirical investigation is needed with respect to the subjective perception of management students. Since, a quiz (objective questions), thematic short questions, thematic long questions, individual project, group project, group presentation and case analysis constitute the major components in an evaluation process adopted in India; the present study is geared to identify students' perception of significant predictors for both academic success (examination) and job placement success. More specifically the following objectives are set aside:

1. To identify perceived predictors of academic success (examination)
2. To identify perceived predictors of job placement success
3. To examine the role of gender in each perception

Study

In view of the foregoing rationale, two major objectives are delineated. First, it is intended that the lens model would be applied to generate dimensions that are perceived as significant predictors of success. The use of the lens model can be undertaken in various forms such as the presentation of profiles and

the presentation of verbal statements regarding the predictors. However, the profiles offer the vividness of visual perceptions. Accordingly, several profiles are prepared and each profile depicts varying degrees of several dimensions. It may be indicated that the presentation of profiles is undertaken in a quick succession. The participant does not have the scope of reflecting much on each of the dimensions. Consequently, the individual judgment is likely to be spontaneous and natural.

The second objective of the study is to examine whether participants are aware of the basis of their judgment. Research in the past has shown that people consciously report certain criteria as the basis of their judgment, but they actually adopt a different basis for their judgment. For example, students report that they judge teachers on the basis of their scholarship. However, actually they judge teachers on the basis of the interest teachers' show in students' affairs. Thus, the present investigation is geared to identify the gap between actual basis of judgment and consciously reported basis of judgment.

It is important to recognize that it is not possible to sample and include all possible parameters that may be examined in the context of identifying significant predictors. However, a manageable number of parameters have been included for the study on the basis of the current practices adopted by the business schools of India. These include quizzes (objective type questions), thematic short questions, thematic long questions, individual project, group project, group presentation, and case analysis. Furthermore, two separate studies are planned. Study 1 involves the judgment regarding academic success (in the final examination) while Study 2 is geared towards judging placement success.

Method

The male and female management students who participated in this study indicated their subjective judgment separately for their academic and placement success, respectively. The subjective judgment involves the successive presentation of pictorial profiles where all seven dimensions are depicted in the form of bars. The dimensions include a quiz, thematic short questions, thematic long questions, individual

project, group project, group presentation, and case analysis. The magnitude of the dimensions is depicted by the height of the bar. There are 35 profiles. Magnitude of each profile is varied across the 35 profiles. The presentation of a profile is followed by an outcome judgment where the participant estimates the intensity of academic success (final examination) on a 20-point scale. It is important to indicate that the strength of association between a dimension (say quiz) and perceived success can be computed in the form of product-moment correlations across profiles.

Participants

There were 85 management students randomly sampled from a well-recognized Institute of Eastern India. There were 46 males and 39 females in the study. Their age ranged from 21 to 26 years (Mean=23.1, SD=2.3). All participants were registered for a single programme (MBA-RM) of this Institute.

Task

The task was based on Brunswik's lens model. The task consisted of 35 profiles. In each profile the dimensions were presented in the form of bar diagrams, where each bar represented a specific dimension. The height of the bar is indicative of the magnitude of the dimension. In each profile, seven dimensions depicted different level of magnitude. While preparing profiles, care was taken to vary the magnitude of each dimension across profiles. Each dimension on a profile was clearly labelled. As indicated earlier, the seven dimensions included a quiz, thematic short questions, thematic long questions, individual project, group project, group presentation and case analysis.

Procedure

The participants were randomly sampled from well-recognized management institutes in Eastern India. They were contacted during their second semester of a two-year trimester program. Rapport was established and a brief instruction about the task administration was given. Each participant was given two practice trials. Each participant was handed over a response sheet containing the following instructions:

Here, you are presented with a number of profiles. Each profile depicts the components

of MBA evaluation. The magnitude of each component is represented by the height of the bar. Please imagine that you are in a situation where your success across these components exhibit different magnitudes. The components include a quiz, thematic short questions, individual project, case analysis, group project, thematic long questions, and group presentation. Please reflect on the situation and decide the extent of the academic success (final exam). You are requested to specify your assessment on a 20-point scale, where '1' denotes the least success and '20' the maximum success. Please examine each situation as represented by a profile. You may indicate your rating for each profile on the response sheet provided.

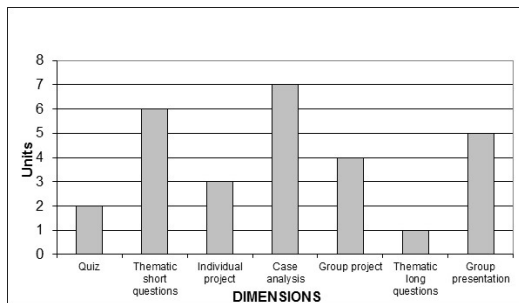


Figure 2: An Illustration of Profile

Each participant indicated his or her outcome judgment (academic success) on a 20-point scale. Subsequently, the participants were asked to apportion 100 marks across these seven dimensions. This was adopted to determine whether participants are aware of the basis of their judgment. It is possible that the basis they adopt (determined by lens model) is not the same as they consciously think as the basis of judgment (apportioning).

The study was repeated with a major change after one week. The participants were asked to indicate an outcome judgment with respect to placement success. Other conditions remained unchanged.

The major objective of the analysis was to identify significant predictors of academic success and placement success. Product moment correlations between magnitude of a dimension and outcome judgments across profiles were computed for each dimension for each participant. The idiographic data generated lead to the nomothetic analysis.

Results

As indicated earlier, the application of the lens model generates idiographic data. In the present investigation, each participant has been asked to indicate his or her judgment with respect to academic success and placement success separately. Table 1 presents mean relationships in terms of correlations between the intensity of each dimension and the extent of success. It is shown that both males and females perceive case analysis as a significant predictor of academic success and placement success. For example, correlations obtained for males and females in the context of academic success is found to be $r(33) = .57$ and $r(33) = .49$, $p < .05$ (see Table 1). Similarly, the correlations computed for males and females in the context of placement success are found to be $r(33) = .36$ and $r(33) = .45$, $p < .05$.

In addition, female management students report individual project as a significant predictor of academic success $r(33) = .58$, $p < .05$. No other dimension emerges as a significant predictor of academic success.

In the context of placement success, males perceive thematic long questions and group presentation as significant predictors of placement success, the correlations are found to be $r(33) = .36$, $p < .05$ and $r(33) = .46$, $p < .01$, respectively. Females, however, perceive thematic short questions and individual project as significant predictors of placement success, correlations are shown to be $r(33) = .44$, $p < .05$ for both cases. This is in addition to the finding that case analysis is a significant predictor for males and females in contexts of academic and placement success.

Group (male versus female) differences and context (academic success versus placement success) differences are also examined. Two way analyses of variances are carried out. This shows a significant effect for sex, $F(1, 81) = 4.16$, $p < .05$. The examination of mean scores indicates that males perceive greater association between quiz performance and academic success than do females ($M = .12$ and $.06$, respectively). There is no significant context effect, $F(1, 81) = .395$, n. s. With respect to thematic short questions, neither of the sex nor the context effect is significant, $r(1, 81) = 1.00$ and 2.59, respectively.

Table-1 Mean Dimension-Success Associations as Perceived by Management Students

Dimension	Target of Success							
	Academic success				Placement success			
	Males (n=15)		Females (n=17)		Males (n=31)		Females (n=22)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Quiz	.02	.01	.12	.05	.01	.01	.06	.03
Thematic short questions	.06	.02	.03	.02	.08	.03	.44*	.11
Individual project	.01	.01	.58*	.14	.01	.01	.44*	.13
Case analysis	.57*	.13	.49*	.12	.36*	.11	.45*	.14
Group project	-.05	.02	.01	.01	-.01	.01	.03	.02
Thematic long questions	.07	.03	.12	.08	.36*	.14	-.01	.01
Group presentation	.02	.01	.01	.01	.46**	.11	.04	.02

*p <.05 ** p <.01

The result shows significant sex effect with respect to individual project performance, $F(1, 81) = 7.90, p < .05$. Females report greater association than do males ($m = .13$ and $.00$, respectively). There is no significant context effect, $F(1, 81) = .14, n.s$. It has been reported earlier that both males and females perceive case analysis skill as a significant predictor of academic success and placement success. The group comparison reveals that there is neither significance of sex difference nor the context difference, $F(1, 61) = .03$ and $F(1, 81) = 1.6, n.s$ respectively.

In the context of group project, there is also a non-significant effect for sex and context, $r(1, 81) = 0.21$ and 1.34 , respectively. A similar pattern is shown with the respect to thematic long questions as well as group presentation.

In sum, all management students perceive case analysis ability as a significant predictor of their academic success and placement success. In addition, female students view individual project as a significant predictor of their academic success. In the context of placement success, female students regard thematic questions and individual project as significant predictors whereas male students view thematic long questions and group presentation as significant predictors.

Interestingly, a different priority order emerges when students are asked to apportion 100 marks across seven dimensions. It is shown that they consciously report group project (top-most choices) and quiz (the next choice)

as predictors of both academic success and placement success. This implies that students are not aware of the basis of their judgment. There is a gap between what they think as the basis and what they actually adopt as the bases of decision making.

Discussion

The application of lens model in generating significant dimensions of success (academic as well as placement) as perceived by management students provides a number of interesting findings. First, both males and females 'perceive' case analysis ability as a significant predictor of both academic success as well as placement success. Perhaps, the ability to analyse management cases involves both higher levels of analytic skill and familiarity with contemporary management scenarios. This is an area where theory and practice are appropriately blended. This might have persuaded management students to view case analysis as a significant predictor.

Furthermore, females view individual project as a significant predictor of academic success. While pertinent literature on gender roles evinces communal and group orientation of females, the finding that individual project is a significant predictor appears to be a contrast. It is plausible that females view individual project as a challenging task and hence consider it significant for predicting their academic success.

In the context of placement success, gender difference is visible. Males view thematic long questions and group presentation as significant predictors while females regard thematic short

questions and individual project as stable predictors. The reason for such perception could be probed in the future. While the delineation of specific reasons for explaining gender differences requires a fine-grained study, we asked a few questions (unstructured) during the debriefing phase (at the end of the study) particularly the ways students prepare themselves for various types of academic assignments. There was a perceptible difference. Males reported that they generally constitute small informal groups prior to a test (say mid-term examination) and discuss jointly. Although, females also go for group study, the extent is remarkably lower. This kind of differences in preparatory work habits may explain a part of the picture. However, further probing into the matter at an empirical level may provide clearer picture.

An interesting aspect of the study involves the gap between what people think to be the basis of their judgment and the actual basis of judgment. This aspect needs to be carefully considered when we analyse the nature of decision making process, especially in the context of uncertain situations.

At the deeper level, the present research effort and its findings carry a message for further evaluation and application. It is important to recognize that the findings are indicators. It is possible in the next phase of the study to examine correlations between the parameters and actual examination/placement success. It is very likely that in an adoptive management institute, there would be a good degree of match between what students perceive to be significant predictors and the actual predictors. If there is a mismatch, counselling may be appropriately geared to enhance the match between subjective perception and objective realities. Such as exploration across different management institutes would also distinguish adaptive institutes from maladaptive ones.

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