Predicting the Unpredictable Through Knowledge: Role of Knowledge in Predicting Individual Behavior

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Abstract
Predicting human behaviors and regulating those behaviors through positive or negative reinforcement are essential for maintaining successful inter-personal relationships. Keeping in view this notion, this paper aims to provide an understanding of the role of tacit and explicit knowledge of behavioral sciences in enhancing the predictive capability of students of the University of Central Punjab (UCP) with respect to classmates’ academic potential and instructors’ attitudes toward student evaluation. Factor analysis was applied to test the construct validity of the questionnaire. Five new factors have been extracted such as socializing, cognitive-behavioral trainings, teaching effectiveness, cognitive biases, and predictive capability. The results indicate that socializing in form of social events, class group assignments, cognitive-behavioral trainings, and efforts to minimize students’ cognitive biases enhance the students’ predictive capability of classmates’ academic potential and instructors’ attitudes toward student evaluation.

Keywords: Human behavior, Tacit knowledge, Explicit knowledge, Predictive capability

Introduction
In this era of dynamism characterized by globalization, technological breakthroughs, and workforce diversity, uncertainty is prevalent in organizational environment (Brooks, Weatherston, & Wilkinson, 2010). As a result, predictability of unforeseen circumstances and taking proactive actions are crucial for the survival of organizations nowadays. The uncertainty in environment has the tendency to further trickle down the uncertainty in individuals’ behavior, which makes the process of understanding individuals’ behavior difficult. In order to minimize uncertainty, individuals tend to predict other people’s behaviors so that they can take proactive actions effectively to cope with the behavioral consequences. Successful mutual relationships among
individuals are necessary for meeting their social and economic objectives. Behavior refers to the way in which an individual conduct himself (Stevenson, 2010). Predicting one’s own behavior in a particular situation and anticipating the probable consequences of the behavior are also important to avail opportunities in the environment. For example, an individual may anticipate the probable questions the interviewer might ask him in an interview. It would enable him to visualize the situation in advance and take proactive measures. Programmed behavior or routine behavior can be easily predicted (Plunkett & Attner, 2012). For instance, we may easily predict that one would say ‘hello’ when attending to a phone call. Whereas, non-programmed behavior such as one would behave in emergency such as earthquake or accident where an employee gets injured in the workplace is difficult to predict (Plunkett et al., 2012). Similarly, behaviors based on natural tendencies can be readily predicted. For instance, females tend to be more emotional than males and youngsters tend to be more risk taking than old-age people (Kring & Gordon, 1998; Parkins, 2012).

Besides, the behavior of an individual can be determined, to some extent, by his inherent psychological and physiological characteristics (Gastil, 1961). Moreover, certain demographic characteristics i.e. gender, age, marital status, social class, educational background, work experience, religion, and culture influence the behavior of an individual (Labaw, 1981). Personality traits of an individual composed by certain beliefs, values, emotions, cognition, perceptions, subjective norms or expectations, life experiences, exposures, self-interests, and self-image also shape up the behavior. Besides, contextual factors such as group norms, organization’s culture, social exchanges and reciprocity in relationships influence individuals’ decision making (McGue & Bouchard, 1998; Robbins, 2001).

An individual’s behavior directed toward someone or something can be predicted by either acquiring knowledge of his relevant past or from present behaviors through demographics, personality traits and the context in which he displayed that particular behavior. However, an individual’s past behavior should not be used as the only measure to predict his future behavior because his future behavior may be inconsistent with his previously displayed behavior due to mood swings or contextual factors. Besides, behavioral predictions should not be made solely on the basis of one’s own perceptions, beliefs, and pre-conceived ideas through which he visualizes others’ behavior and gives particular meanings to it. It is important because an individual tends to
make judgments about others that are consistent with his own beliefs, perceptions and experiences that results in biases when predicting the behavior of others (Robbins, 2001). Moreover, an individual’s cognitive biases may influence his predictions regarding others’ behaviors (Murata, Nakamura, & Karwowski, 2015). Similarly, an individual may predict someone’s behavior on the basis of his own attitudes and life experiences (selective perception bias). Further, an individual may make future predictions for someone’s behavior on the basis of the occurrences that are readily recalled in the memory i.e. availability bias (Robbins, 2001). Such biases hinder one’s ability to make judgments objectively and may result in distorted predictions.

An individual needs tacit and explicit knowledge for predicting and regulating human behavior effectively. Knowledge refers to theoretical understanding and practical application of a subject. Tacit knowledge relies on informal communication and experience-based know how i.e. ‘learning by interacting or socializing’ and ‘learning by experiencing’ (Jensen, Johnson, Lorenz, & Lundvall, 2007). An individual acquires tacit or implicit knowledge through informal interaction, practical experience, exposure, and observations. Explicit knowledge refers to the understanding and use of scientific and technical information obtained through explicit sources such as textbooks, websites, or other related sources (De Jong & Ferguson-Hessler, 1996; Jensen et al., 2007). Knowledge of behavioral science disciplines such as psychology, sociology, anthropology, organizational behavior, and human resource management provide insights for predicting and regulating the human behavior.

The domain of psychology studies the observable actions and mental processes of an individual (Comer & Gould, 2010). For example, personality tests, IQ and emotional intelligence tests can be used to get information about an individual’s personality, cognitive abilities, and emotional stability that may be used to predict his attitude or behavior in a particular situation. Sociology provides understanding of the social environment and the influence of the social environment on the attitudes and behaviors of people operating in that environment (Macionis & Gerber, 1997). Anthropology is the study of how the human behavior changes with the developments in biological characteristics, beliefs, and culture of humankind (Robbins, 2001). The field of organizational behavior provides knowledge of how the individuals, groups, and structures influence the behavior within organizations (Robbins, 2001). It suggests that various contextual factors such as work environment, peer pressure, formal coalitions i.e. trade unions or linkages
with professional associations, group norms, organization’s policies, and position in the hierarchy may influence the behavior of individuals. The discipline of human resource management develops broader understanding regarding predicting and regulating human behavior to achieve organization’s objectives (Dessler, Sutherland, & Cole, 2005). Therefore, understanding the role of knowledge in predicting individuals’ behaviors is essential as it has been argued by Brucks (1986) and Allen and Butler (1993) that the level of knowledge an individual possesses about an issue guides his behavior towards the issue in a certain manner.

Generally, individuals predict someone’s future behavior on the basis of his past behavior displayed in a particular context. The over emphasis on one’s past behavior while making judgments about his future behavior is likely to result in unrealistic behavioral predictions (Dietrich, 2010). Besides, when individuals make judgments about successful behavior of a person, they tend to overemphasize the influence of factors that are beyond his control and underemphasize the influence of factors that are in his control. But, when they make judgments about unsuccessful behavior of a person, they tend to overemphasize the influence of factors that are in his control and underemphasize the influence of factors that are beyond his control (Robbins, 2001). When individuals predict a person’s future behavior on the basis of such judgments, they may make biased assessments (Dietrich, 2010).

It is a common practice among the students of the University of Central Punjab that the students attribute good academic performance of high scorers to instructor favoritism and attribute bad academic performance of their fellow students to incompetence or laziness. As a result, they predict that those students who get higher grades will be unable to compete in the job market because they earned good grades not because of competence but due to teacher favoritism. Similarly, they predict that students who scored low in the past semester will not be performing well in the subsequent semesters because they are perceived as less hard working or less competent. In making such predictions they ignore contextual factors such as instructors’ biasness or unavoidable factors such as physical illness or family problems. Such over reliance on attribution errors (Robbins, 2001) and failure to look at the bigger picture hinder students’ predictive capability in terms of classmates’ academic potential, which subsequently lead to ineffective decisions by students regarding forming groups with class mates for class learning assignments. Moreover, during the process of course registration, students try to choose those
instructors whom they predict as lenient in assessments and evaluation. They make such predictions on the basis of the past behavior of the instructors they had already experienced, or by getting information from past students who had been taught by the instructor. While making such predictions, they ignore contextual factors i.e. the behavior of the class that may change instructor’s attitude and behavior toward evaluation, and changes in assessment criteria set by the university. It reflects students’ lack of capability in predicting instructors’ attitudes toward student evaluation. Such issue has social and financial implications, for example, after students enroll themselves for a course and perceives the inconsistent evaluation from the course instructor, they get demotivated and subsequently lose interest in the course. Consequently, they drop the course, hence lose the money as well as time invested on the course.

THEORETICAL FRAMEWORK

This study rests on Labaw’s theory of behavior determination (1981). Labaw’s (1981) approach to predicting human behavior suggests that an individual’s behavior can be predicted by considering three components: (i) relevant past behavior, (ii) environment, which is described by Labaw (1981) as physical aspects of an individual’s life i.e. gender, age, health, social status, or education level, that influence an individual to act in certain ways, and (iii) the level of knowledge an individual possesses regarding relevant issue. It is essential to consider knowledge while predicting behavior because the way an individual behaves toward an issue is contingent upon what he knows about the issue (Labaw, 1981).

LITERATURE REVIEW

Importance of Predicting Human Behavior

Scholarship on behavior predictability indicates that proactive individuals tend to be more sensitive to uncertainties for predicting and responding the individuals’ behaviors (Boucher, 2009). Hofstede (1980) in his analysis of cultural dimensions of 200 countries, ranked Pakistan as 70 on ‘uncertainty avoidance’ dimension on a scale ranging from 0 (very low) to 100 (very high). According to him, countries that scored high on uncertainty avoidance were more reluctant to face ambiguity and were more likely to use proactive measures to minimize uncertainty. Further to the above discussion regarding the importance of predicting individuals’ behaviors, socialization is inevitable for maintaining successful mutual relationships. In order to maintain successful
interpersonal relationships, it is essential to make behavioral predictions and take proactive actions accordingly to fulfill mutual expectations of individuals in a relationship (Rousseau, 1989). Human interaction is a social exchange in which individuals try to maximize the benefits of social relationships and minimize the costs associated with the relationships (Blau, 1964). When the benefits of a relationship exceed the associated costs, individuals tend to maintain that relationship. Whereas, when the costs associated with a relationship exceed the benefits, individuals tend to terminate that relationship. Therefore, it can be suggested that an individual needs to predict the behavior of others and act proactively in an effective manner to socialize with newly met individuals. Predicting others behavior can help an individual in achieving his goals, strengthening already established relationships to maximize benefits and improving those social relationships that incur costs.

**Understanding Human Behavior**

Understanding individual behavior is critical in terms of predicting it effectively. Morgan, King, Weisz, and Schopler (1986) and Weiten (2007) stated that behavior represents anything observable that an individual does. Further to this, Morgan at el. (1986) argued that an individual’s mental processes such as thoughts, feelings, and attitudes cannot be seen directly but they can be detected through his behavior. However, individuals may exercise surface acting (Grandey, 2003) or emotional labor (Brotheridge & Grandey, 2002) i.e. hiding one’s true inner feelings and expressing organizationally desired emotions. It suggests that individual behavior does not always reflect his true feelings because his behavior towards someone or something can be pretentious.

Besides, Maslow, Frager and Fadiman (1970) distinguished between unlearned and learned behaviors. They argued that unlearned behaviors are ‘built-in’ or inherent, whereas, learned behaviors are acquired through socialization. It can be proposed that one’s unlearned behaviors are based on inherent psychological and physiological characteristics and certain demographic characteristics, such as gender, age, education and social status. Individuals’ demographics and personality characteristics influence an individual’s attitude and cause him to behave in a certain way.

Moreover, distinctions can be made between programmed behaviors and non-programmed behaviors. Programmed behaviors are routine behaviors and are repetitive in nature. Such
behaviors are easily predicted by individuals in organizations because standard operating procedures guide such behaviors (Kusluvan, 2003). In contrast, non-programmed behaviors are unusual behaviors and are non-repetitive in nature. Predictability of such behaviors is relatively difficult and there exists no certain measures in organizations to cope with the consequences of such behaviors (Kusluvan, 2003).

**Theories helpful in Behavior Prediction**

Ajzen and Fishbein (1975) explained that an individual’s attitude (beliefs, emotions, feelings, perceptions, cognitive pattern, and learned tendencies), subjective norms, and perceived behavior control (emotional bonding with others and degree of dependence on others) influence intentions that ultimately influence behavior. However, it can be claimed that in addition to intentions behavioral intervention in the form of positive and negative reinforcements and the likely behavioral consequences associated with the reinforcement may also influence an individual’s behavior (Lieb & Goodlad, 2005). Previously, Freedman and Fraser (1966) presented ‘foot-in-the-door theory’ that can be used as a way to influence an individual’s behavior. They argued that the more a person agrees with small commitments, the more likely he moves in that attitudinal and behavioral direction to comply with bigger commitments. It can be argued that foot-in-the-door theory can be helpful in making predictions of an individual’s future behavior on the basis of his past behavior. Moreover, Cialdini, Vincent, Lewis, Catalan, Wheeler and Darby (1975) mentioned ‘door-in-the-face theory’ as another way to influence an individual’s behavior. They argued that if an individual refuses to accept an initial large request, it is more likely that he would accept a subsequent small request.

It can be observed from the above mentioned theories that foot-in-the-door theory and door-in-the-face theory are consistent with Labaw’s (1981) notion of predicting behavior as both theories suggest the prediction of one’s future behavior on the basis of his past and present behavior. However, according to foot-in-the-door theory, an individual’s behavior can be predicted by keeping in view his attitudinal consistency, whereas, according to door-in-the-face theory, one’s behavior can be predicted by taking into account the reciprocity in the relationship because the individual who denies the initial big request may tend to feel indebted to the person who made the request. The psychological rationale behind these notions of behavior prediction is that when humans have a certain level of friendly interaction with one another, a level of emotional bonding
is created among them and they feel indebted to one another (Gouldner, 1960; Blau, 1983). As a result, they have a level of conformance to subjective norms and requests made by the person they have interacted with.

**Understanding Knowledge of Behavioral Science Disciplines**

It is essential to have knowledge of the disciplines that help in understanding and predicting human behavior. Hayek (1945) referred that knowledge refers to theoretical apprehension and practical application of a subject. Ajzen, Joyce, Sheikh and Cote (2011) found that knowledge in terms of theoretical and practical application of information that individuals possess in a particular domain is significant for effective decision making. Tacit knowledge refers to implicit knowledge that an individual acquires through socialization and experience on job (Jensen et al., 2007). Whereas, explicit knowledge can be acquired through formal course offerings and trainings (Jensen et al., 2007). Knowledge of behavioral science disciplines such as psychology, sociology, anthropology, organizational behavior, and human resource management contribute to the understanding of human behavior and provide guidelines for predicting and regulating human behavior effectively (Lombardo, 2003).

Moreover, sociology is the study of the social factors such as social systems characterized by cultural and religious values, organizations’ policies, and group norms that influence the attitudes and behaviors of individuals operating in the social system (Macionis, Benoit, & Jansson, 2000). This discipline explains how culture, religion, societal expectations, social interaction, and group norms influence an individual’s behavior.

It can be argued that biases intervene in our judgments because human behavior is subjective and difficult to predict. Besides, unavailability of accurate and complete information causes individuals to rely on their preconceived ideas and information that is readily available when making predictions (Chang, et al., 2007). So, in order to make reliable predictions, an individual must have knowledge of the potential sources of bias that may influence his judgments when predicting someone’s behavior. For example, an individual may predict someone’s behavior on the basis of the first piece of information that he receives about the person i.e. first impression bias (Lim, Benbasat, & Ward, 2000). Similarly, an individual may overestimate his previous knowledge and underestimate the contextual factors that may influence someone’s behavior i.e. overconfidence bias (Bhandari & Deaves, 2006). Likewise, a person may predict someone’s
behavior solely on the basis of his own beliefs and life experiences i.e. selective perception bias (Massad, Hubbard, & Newtonson, 1979). Familiarity bias refers to tendency of individuals to predict the probability of occurrence of behaviors that are similar to their previous experiences (Shefrin, 2007). Besides, individuals may make behavior predictions on the basis of past experiences that can be easily recalled in the memory i.e. availability bias (Taylor, 1982).

**Prior Studies on Similar Issue**

Bashir, Rasheed, Raftar, Fatima, and Maqsood (2013) investigated the influence of cognitive biases such as overconfidence bias, control bias, loss aversion bias, confirmation bias, and familiarity bias on business students’ prediction regarding return on investment and their resulting investment decisions. The main findings of the research were that males were more subject to overconfidence bias, control bias, and confirmation biases than women. Therefore, males predicted higher return on investment, thus, they invested 45% more than women and as a result reduced their return on investment. Whereas, females were more influenced by loss aversion bias while predicting return on investment and making investment decisions (Bashir et al., 2013). Barber and Odean (2001) suggested that males are more overconfident than females while predicting behavioral outcomes and making both financial and non-financial decisions. Moreover, Bashir et al. (2013) suggested that male students were more inclined to demonstrate overconfidence bias when they were asked to predict their academic performance.

Chira, Adams and Thornton (2008) studied the influence of certain cognitive biases on thought processes of students. The findings revealed that students who held overconfidence bias predicted their academic performance considerably high. Besides, students tended to hold risk aversion bias especially when they were anxious that their behavior might affect their course grades adversely. Additionally, students tended to exhibit ‘bounded rationality’ while making predictions of their behavioral outcomes (Chira et al., 2008). Bounded rationality implies that individuals are limited in making realistic predictions due to their limited knowledge (Gigerenzer & Selten, 2002). Moreover, individuals’ age, socio-economic status, and cognitive abilities influence their predictive capability and decision making (Finucane, Mertz, Slovic, & Schmidt, 2005; De Bruin, Parker, & Fischhoff, 2007). Finucane et al. (2005) stated that individuals’ predictive ability varies across their age. As an individual gets older, his cognitive abilities such
as absorptive capacity and ability to recall previous information stored in memory decline that inhibit his predictive capability and decision making skills.

Dietrich (2010) suggested that students who are low in socio-economic status may have relatively lower predictive capability because they may have less access to education and other social resources that may cause them more likely to subject to bounded rationality and cognitive biases while making behavioral predictions. Moreover, Juliussson, Karlsson and Gärling (2005) indicated that past experiences influence one’s behavioral predictions and decision making. Schutte and Wu (n.d) stated that individuals usually judge a person on the basis of their previous experience of that person. Due to such tendency, a student predicts that his classmate would perform well in a quiz because he performed well in previous quizzes. Similarly, instructors usually predict that a student would perform good or bad in a course according to his past grades. Therefore, if a student performs well on his current math exam but did not perform well on his previous math exams, the instructor might attribute his current performance to luck or cheat (Schutte et al., n.d). It implies that, in turn, the student’s prediction of the instructor’s attitude toward evaluation may be influenced according to his previous experience of the instructor. In doing so, it is likely that he ignores contextual factors that are necessary for making realistic predictions i.e. the difficulty level of the course taught by the instructor, actual performance of students in the course, and changes in assessment criteria set by the university that may influence an instructor’s attitude toward student evaluation.

Moreover, Frieze (1976) suggested that individuals attribute one’s success and failure to his naive ability, degree of effort, difficulty level of task, and luck. Weiner (1979) suggested that individuals tend to make internal attributions for their success i.e. they tend to attribute their success to internal factors such as their ability, and effort; and make external attributions for their failure i.e. they tend to attribute their failure to external factors such as bad luck or task difficulty. However, contrary to the students’ bias that high achievers score well due to luck or instructors’ favoritism, Howard (1983) and Bloom and Sosniak (1985) suggested that high scorers in academics or sports tend to be hard working and exert tremendous efforts to accomplish tasks. Humans make attributions about behaviors of themselves and others in order to explain and predict behaviors (Bell, Greene, Fisher, & Baum, 1996). It suggests that the tendency to make internal attributions to one’s own success may result in overconfidence bias while making predictions of
one’s success in future. Similarly, the tendency of an individual to make external attributions to others’ success may cause the individual to make unrealistic predictions of future task performance of others.

FIGURE 1
Concept Map of Literature Review
RESEARCH METHODOLOGY

Quantitative research strategy was used in this research as the emphasis was on the evaluation of data by quantifying it (Neuman, 2002). Before administering the questionnaire to students of University of Central Punjab, pilot testing (Bailey & Burch, 2002) of the questionnaire from the students was conducted to ensure reliability of the data collection instrument. Factor analysis was used to examine the interdependence of variables of the research study (Bornstedt, 1977). After testing construct validity, correlation of the constructs was examined through SPSS version 19. Moreover, the research was conducted in non-contrived settings there was no interference with normal work routine of the students.

The unit of analysis was individual as the data was collected from the students of UCP. A case study research design was used because it enabled to focus on a particular group of people within a specific context (Yin, 1994). This research design was adopted because the purpose of the research was to investigate the role of knowledge (theoretical understanding and practical application) of behavioral sciences in enhancing the predictive capability of the UCP students with respect to classmates’ academic potential and instructors’ attitudes toward student evaluation. Data was collected from 202 students of the UCP who had spent significant time period in the university so that they could provide the desired information. 202 self-administered questionnaires were floated to the sample and 202 filled questionnaires were received, so there was no non-response. Since there is no interviewer present when a self-administered questionnaire is being completed, interviewer bias is eliminated. Moreover, before distributing questionnaires, informed consent was obtained from the respondents for voluntary participation and for ensuring confidentiality of the respondents.

THEORETICAL MODEL

![Diagram](image)

FIGURE 2
Theoretical Model
### TABLE 1: Operationalization of Variables

1) **Imparting knowledge** (theoretical understanding and practical application) of behavioral science disciplines to students by the university.

   (1a) provision of theoretical apprehension of behavioral science disciplines to students

   - (1a) (i) course offerings such as psychology, sociology, anthropology, organizational behavior, and human resource management
   - (1a) (ii) organizing seminars/trainings for students with respect to behavior prediction

   (1b) encouraging students for application of behavioral sciences

   - (1b) (i) application of sociology discipline aimed at socializing
     - organizing social events to encourage students to socialize with one another
     - encouraging students to get introduced to one another on first day of class so that students have an opportunity to know one another
     - encouraging students to do class assignments in groups so that students can get familiar with fellow students’ competencies i.e. subject knowledge, writing or presentation skills, and attitudes toward work i.e. whether they are hardworking, consistent, attentive to details, and conscientious or not
     - encouraging students to form groups for learning activities with those class fellows with whom they have not previously formed any group in the specific course
   - (1b) (ii) application of psychology discipline aimed at studying individual differences
     - conducting personality tests of all students in a classroom by the course instructor to assess students’ personality traits, and communicating the results of personality tests of each student to the class so that they get aware of one another’s personality (this may help in predicting that those students who score high on extraversion may perform better in class presentations as they are more confident and interactive. Similarly, students who score high on emotional stability may withstand stress easily that arise due to course load and examinations; therefore, they may perform better in academics as they tend to be less nervous. Besides, students who score high on agreeableness may perform better in group activities as they are more cooperative and can resolve conflicts easily. Students who score high on conscientiousness may have good academic performance as they would be more organized and responsible towards their studies such as they would be more likely to arrive in class on time, and submit class assignments on time. Similarly, students who score high on openness to experience are creative; therefore, they may perform better in courses that require idea generation such as marketing, entrepreneurship, etc.)
   - (1b) (iii) application of organizational behavior discipline aimed at studying how an organization’s policies and culture influence its members’ task and contextual behaviors
     - setting the university policy that the maximum limit of the number of students in a classroom is such that enable students to socialize with one another easily and may facilitate student-teacher interaction in the classroom
     - establishing a classroom culture by the course instructor that facilitates students’ participation in class discussions (this may enable students to have an idea of the level of subject knowledge their class fellows possess, which helps them in predicting performance of their class fellows in that subject)

2) **Inaccurate predictions** by students regarding classmates’ academic performance and instructors’ attitudes toward student evaluation.

   - classmates’ academic performance in terms of class participation, class assignments, and examinations
   - instructors’ attitudes toward student evaluation in terms of exercising leniency while assigning course grades to students (giving grace marks to students or picking best assignments or quizzes for final grading), or exercising biasness while assigning course grades to students

   (2a) behavior prediction on the basis of one’s past behavior only

   - predicting that a classmate who scored well in the past semester would score well in subsequent semesters also
   - predicting that an instructor who was lenient in a course would be lenient in other courses also

   (2b) keeping contextual factors ignored when predicting behavior

   - Predicting that a classmate who scored well in mathematics would score well in marketing discipline while ignoring contextual factor such as the nature of subjects i.e. mathematics is about numbers, and marketing requires creative thinking. It can be that a person good at numbers may not necessarily be good at creative thinking.
• Predicting an instructor’s attitude towards student evaluation while ignoring contextual factor such as the behavior of the class (i.e. getting poor/good grades in learning activities given by the instructor, showing uncooperative/cooperative learning attitude towards the instructor, showing disrespect/respect towards the instructor, etc.) that may lead the instructor to evaluate students strictly or leniently.

(2c) behavior prediction on the basis of cognitive biases
(2c) (i) overemphasizing the influence of factors that are beyond a student’s control and underemphasizing the influence of factors those are in his control while making judgments about good academic performance of a student
  • making judgment that high scorers get good grades not because of their hard work but because of instructor favouritism
(2c) (ii) underemphasizing the influence of factors that are beyond a student’s control and overemphasizing the influence of factors those are in his control while making judgments about low academic performance of a student
  • making judgment that a student scores low because of his incompetence rather than because of instructor’s bias
(2c) (iii) predicting someone’s behavior on the basis of his first impression
  • a student predicts that an instructor would be lenient in student evaluation because previously he had an interaction with the instructor and found him friendly and agreeable

ANALYSIS

Factor Analysis

Factor Analysis was used to test the construct validity of a questionnaire (Bornstedt, 1977) and also for identifying the inter-relationships among variables in the analysis. Exploratory Factor Analysis (EFA) was used for this research that is useful in searching relationships among a set of variables (Hair, Black, Babin, Anderson, & Tatham, 1998).

![Scree Plot](image)

FIGURE 3
Scree Plot
The Kaiser-Meyer-Olkin (KMO) and the statistically significant Bartlett’s Test of Sphericity results indicated that the value of overall KMO measure of sampling adequacy is .768. It was ensured that the KMO statistics for each individual variable is above 0.5. Besides, the Bartlett’s Test of Sphericity is statistically significant i.e. 0.000 that reflects the dataset is adequate for extracting factors through Principal Component Analysis.

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
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<tbody>
<tr>
<td>I tend to attend behavior prediction trainings or seminars organized</td>
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<td>by the university.</td>
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<tr>
<td>I have studied behavioral science courses such as psychology, sociology,</td>
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<td>etc.</td>
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<tr>
<td>I frequently attend social events organized by the university such as</td>
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<td>.726</td>
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<td>welcome parties, cultural festivals, etc.</td>
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<td>I tend to have frequent interactions with my classmates.</td>
<td>.796</td>
<td></td>
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<tr>
<td>I tend to form groups with my classmates for class assignments.</td>
<td>.709</td>
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<tr>
<td>I am likely to form group for learning activities with those class mates with whom I have not previously form any group in the course.</td>
<td>.728</td>
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<td>The course instructor(s) brief student evaluation criteria on the first day of class.</td>
<td>.573</td>
<td></td>
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<td>My class room culture facilitates student-teacher interaction.</td>
<td>.757</td>
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<tr>
<td>I tend to work with a classmate for class assignments because I perceive he/she will score well in the current semester due to the reason that he/she scored well in the past semester.</td>
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<td>.793</td>
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<tr>
<td>While making judgments about a student’s academic performance, I keep into account the role of uncontrollable factors such as instructors’ favoritism, physical illness, etc.</td>
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<td>.773</td>
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<tr>
<td>I tend to perceive that high scorers get good grades not due to their competence but due to instructors’ favoritism.</td>
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<td>.752</td>
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<tr>
<td>I tend to perceive that students score low in a course due to their incompetency rather than instructor’s biasness.</td>
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<tr>
<td>I tend to perceive those classmates to be good performers in class presentations who actively participate in class discussion on the first day of class.</td>
<td></td>
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<td>.576</td>
</tr>
<tr>
<td>I tend to perceive an instructor to be lenient in student evaluation because previously I had an interaction with the instructor and found him friendly. While making judgments about an instructor’s attitude towards student evaluation, I keep into account the behavior of the class that may cause the instructor to evaluate strictly or leniently.</td>
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</tbody>
</table>

The 18 items of the questionnaire were subjected to Principal Component Analysis using SPSS version 19. The Principal Component Analysis extracted five components or factors with eigen values exceeding 1, explaining 27.86%, 13.76%, 11.03%, 8.15%, and 5.85% of the variance respectively. The eigen value represents the amount of variance accounted for by a factor or
component (Hair et al., 1998). The results indicated that the five extracted factors with eigenvalues exceeding 1 account for 66.65% of the total variance that is considered practically significant.

The afore-mentioned scree plot shows there are five components or factors with eigenvalues exceeding 1, so five factors are retained for the analysis. Moreover, VARIMAX rotation was employed to rotate the factor matrix in order to redistribute variance from earlier factors to later ones. It aids in achieving theoretically more meaningful results. VARIMAX rotation method was applied because it is the preferred method when the aim is data reduction to a smaller number of variables (Hair et al., 1998). 3 of the 18 variables in the component matrix (See Appendix: questionnaire items 9, 10, and 13) were not loaded on any factor, so QUARTIMAX and EQUIMAX rotations were applied respectively to improve the structure. However, the 3 variables were still not loaded on any factor, so those 3 variables were dropped from the analysis. After that, again VARIMAX rotation was applied with the objective of attaining a high loading on only a single factor. The results are shown in Table-2 as above.

The factor loadings greater than ±0.5 are considered for the analysis because values exceeding ±0.5 are considered necessary for practical significance (Hair et al., 1998). The items are clustered into 5 factors and the resulting new variables are displayed in Table-3.

<table>
<thead>
<tr>
<th>TABLE 3: Items Clustered into Five New Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>
I tend to perceive those classmates to be good performers in class presentations who actively participate in class discussion on the first day of class.

I tend to perceive an instructor to be lenient in student evaluation because previously I had an interaction with the instructor and found him friendly.

While making judgments about a student’s academic performance, I keep into account the role of unavoidable factors such as instructors’ favoritism, physical illness, etc.

I tend to work with a classmate for class assignments because I perceive he/she will score well in the current semester due to the reason that he/she scored well in the past semester.

While making judgments about an instructor’s attitude towards student evaluation, I keep into account the behavior of the class that may cause the instructor to evaluate strictly or leniently.

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**Predictive Capability**
(Oberkampf, Trucano, & Hirsch, 2004)

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**Following hypothesis can be drawn from the study.**

**H1:** Socializing in form of social events and class group assignments are positively correlated with students’ predictive capability with respect to classmates’ academic potential.

**H2:** Cognitive-behavioral trainings to students are positively correlated with the students’ predictive capability with respect to classmates’ academic potential and instructors’ attitude towards student evaluation.

**H3:** Teaching effectiveness is positively correlated with students’ predictive capability with respect to instructors’ attitude towards student evaluation.

**H4:** Cognitive biases are negatively correlated with students’ predictive capability with respect to classmates’ academic potential and instructors’ attitude towards student evaluation.

---

**FIGURE 4**
Theoretical Model after Conducting Factor Analysis
Results of the Theoretical Model after Conducting Factor Analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the revised model has been improved from .768 to .825. Besides, the Bartlett’s Test of Sphericity is statistically significant i.e. 0.000.

The below mentioned Table-4 representsthe frequency of the gender and percentage.

<table>
<thead>
<tr>
<th>TABLE 4: Respondents’ Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>102</td>
<td>50.5</td>
</tr>
<tr>
<td>Male</td>
<td>100</td>
<td>49.5</td>
</tr>
<tr>
<td>Total</td>
<td>202</td>
<td>100</td>
</tr>
</tbody>
</table>

Demographic Details of Sample

50.5% of respondents (n=202) were female students who filled 102 questionnaires and 49.5% of respondents were male students who filled 100 questionnaires out of 202 questionnaires. 2% of respondents were in age group ‘18-25 years’ who filled 4 questionnaires, 93.6% respondents were in age group ‘26-33 years’ who filled 189 questionnaires, 3.5% of respondents were in age group ‘34-41 years’ who filled 7 questionnaires, and 1% of respondents were in age group ‘above 41 years’ who filled 2 questionnaires. 47.03% of respondents (n=202) were bachelor students who filled 95 questionnaires, 44.55% of respondents were graduate students who filled 90 questionnaires, 7.43% of respondents were post graduate students who filled 15 questionnaires, and 0.99% of respondents were doctoral students who filled 2 questionnaires.

<table>
<thead>
<tr>
<th>TABLE 5: Respondents’ Faculty</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCP Faculties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business School</td>
<td>55</td>
<td>27.2</td>
</tr>
<tr>
<td>School of Accounting and Finance</td>
<td>34</td>
<td>16.8</td>
</tr>
<tr>
<td>Information Technology</td>
<td>14</td>
<td>6.9</td>
</tr>
<tr>
<td>Engineering</td>
<td>27</td>
<td>13.4</td>
</tr>
<tr>
<td>Arts and Social Sciences</td>
<td>18</td>
<td>8.9</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>Faculty of Life Sciences</td>
<td>17</td>
<td>8.4</td>
</tr>
<tr>
<td>School of Media and Communication Studies</td>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>Law</td>
<td>17</td>
<td>8.4</td>
</tr>
<tr>
<td>Total</td>
<td>202</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The classification of respondents with respect to their faculties in the university are presented in the Table 5. It shows that 27.2% respondents were students from the UCP Business School who filled 55 questionnaires, 16.8% respondents were students from the School of Accounting and Finance who filled 34 questionnaires, 6.9% respondents were students from the Faculty of IT who filled 14 questionnaires and so on.

Regression Analysis

Table-6 shows the regression model summary in which R value and R square value are displayed. Regression analysis was conducted to predict dependent variable from independent variables (Hair et al., 1998). R value depicts the correlation between variables of the research and R square value shows the change in dependent variable (predictive capability) caused by independent variables (socializing, cognitive-behavioral trainings, teaching effectiveness, and cognitive biases) and control variables (gender, age, qualification, and faculty). R square represents the coefficient of determination which is a measure of predictive accuracy for the regression model (Hair et al., 1998). R value of .870 shows that there exists 87% correlation between variables of the research and R square value of .756 shows that 75.6% variation in dependent variable (predictive capability) is explained by the choice of independent variables (socializing, cognitive-behavioral trainings, teaching effectiveness, and cognitive biases) and control variables (gender, age, qualification, and faculty). The regression model summary indicates that significance level is .000 which is below the threshold of 0.05, so it is suggested that the overall regression model is statistically significant.

<table>
<thead>
<tr>
<th>TABLE 6: Regression Coefficient &amp; Collinearity Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Qualification</td>
</tr>
<tr>
<td>Faculty</td>
</tr>
<tr>
<td>Socializing</td>
</tr>
<tr>
<td>Cognitive-Behavioral Trainings</td>
</tr>
<tr>
<td>Teaching Effectiveness</td>
</tr>
<tr>
<td>Cognitive Biases</td>
</tr>
</tbody>
</table>

Dependent variable: Predictive Capability
Table-6 displays the values of Beta coefficient (β) known as a regression coefficient, which shows the amount of change in the dependent variable (predictive capability) due to the independent variables (socializing, cognitive-behavioral trainings, teaching effectiveness, and cognitive biases) and control variables (gender, age, qualification, and faculty). The sign of the Beta coefficient (β) indicates whether the relationship is positive or negative, and the value of the coefficient represents change in the dependent variable in response to one unit change in the independent variables and control variables (Hair et al., 1998). In order to maximize the prediction of the dependent variable from the given independent variables, multicollinearity among the independent variables was assessed with the aim to achieve no multicollinearity among the independent variables. VIF and tolerance both were used to assess the multicollinearity among variables. The above-mentioned table shows that the values of tolerance are greater than 0.1 and the values of VIF are less than 10 that suggests there is no multicollinearity in the regression model.

Moreover, Table-6 shows that the relationship between socializing and predictive capability is statistically significant as indicated by the sig. value of .000, and the Beta (β) value of .388 indicates that socializing is positively correlated with predictive capability and one-unit increase in socializing will cause .388 units increase in predictive capability. It suggests that H1 (socializing in form of social events and class group assignments are positively correlated with students’ predictive capability with respect to classmates’ academic potential) is accepted. Besides, the relationship between cognitive-behavioral trainings and predictive capability is statistically significant as indicated by the sig. value of .000, and the Beta (β) value of .652 indicates that cognitive-behavioral trainings are positively correlated with predictive capability and one-unit increase in cognitive-behavioral trainings will cause .652 units increase in predictive capability. It suggests that H2 (cognitive-behavioral trainings to students are positively correlated with the students’ predictive capability with respect to classmates’ academic potential and instructors’ attitude towards student evaluation) is accepted.

H3 (teaching effectiveness in form of effective student-teacher relationship is positively correlated with students’ predictive capability with respect to instructors’ attitude towards student evaluation) is rejected as the relationship between teaching effectiveness and predictive capability of students is statistically insignificant as indicated by the sig. value of .753. H4 (cognitive biases are negatively correlated with students’ predictive capability with respect to classmates’ academic
potential and instructors’ attitude towards student evaluation) is accepted as the relationship between cognitive biases and predictive capability is statistically significant as indicated by the sig. value of .000, and the Beta ($\beta$) value of -.267 indicates that cognitive biases are negatively correlated with predictive capability and one unit increase in cognitive biases will cause .652 units decrease in predictive capability.

For control variables, the relationship between respondents’ gender and their predictive capability is statistically significant as indicated by the sig. value of .035, and the Beta ($\beta$) value of .032 indicates that male students (coded as 1) are more likely to make realistic predictions compared to female students (coded as 0). However, the relationship between respondents’ age and their predictive capability, respondents’ qualification and their predictive capability, and respondents’ faculty and predictive capability are statistically insignificant as indicated by the sig. value of .062, .881, and .898 respectively.

**DISCUSSION**

Socializing refers to interpersonal relationships i.e. interacting or get-together with others that enable individuals to understand others’ personality characteristics, beliefs, values, strengths, and weaknesses that help individuals in working better together. Socializing in form of social events and class group assignments enable students to assess their classmates’ academic potential in terms of their interpersonal skills, information processing abilities, general intelligence, and task-related attitudes such as degree of conscientiousness, industriousness, and agreeableness are likely to be demonstrated while performing their tasks. The frequency and quality of socializing with others determines the predictive capability of individuals. For instance, a student who interacts with his classmates frequently and who has deep interpersonal relationships may be more likely to make realistic predictions regarding the classmates’ academic potential.

It may enable the student to form groups for class assignments with those classmates who possess the skill set conducive for attaining the group’s objectives, which in turn, helps in minimizing breach of the psychological contracts between individuals and the resulting interpersonal conflicts. Such notion has been supported by the acceptance of the hypothesis (H1) i.e. socializing in form of social events and class group assignments are positively correlated with students’ predictive capability with respect to classmates’ academic potential. Moreover,
cognitive-behavioral trainings aid in changing what one thinks i.e. cognition, and what one does i.e. behavior, as such trainings enable individuals to overcome irrational thoughts that control the brain. Therefore, cognitive-behavioral trainings enable individuals to overcome various cognitive biases such as first impression bias, selective perception bias, attractiveness bias, etc., which enhance individuals’ predictive capability and result in effective decision making. Besides, cognitive-behavioral trainings enable individuals to keep into account the role of contextual and unavoidable factors while making judgments about others’ behavior. It has been proved by the acceptance of the hypothesis (H2) i.e. cognitive-behavioral trainings to students are positively correlated with the students’ predictive capability with respect to classmates’ academic potential and instructors’ attitude towards student evaluation.

Teaching effectiveness has not been proved to be an enhancer of students’ predictive capability in this study as the hypothesis (H3) has been rejected. However, teaching effectiveness is positively correlated with students’ predictive capability with respect to instructors’ attitude towards student evaluation. It may be due to the reason that the constructs ‘my class room culture facilitates student-teacher interaction’ and ‘the course instructor(s) brief student evaluation criteria on the first day of class’ may not guarantee that the communication between a student and an instructor is honest, and instructors’ might exercise biasness while evaluating students despite stating explicit evaluation criteria in classroom. Therefore, students tend to make predictions regarding an instructor’s attitude toward student evaluation on the basis of objective evaluation criteria set by an instructor without considering contextual factors such as the overall behavior of the class that may cause the instructor to evaluate strictly or leniently, students’ actual performance in the course, and instructors’ biasness towards particular students. Moreover, cognitive biases i.e. subjective perceptions, illogical thoughts, and stereotypes that deviate from rationality may hinder individuals’ predictive capability and effective decision making.

Various cognitive biases among students such as stereotype (e.g. widely held belief among students that male instructors tend to display favoritism toward female students), selective perception bias (e.g. students tend to perceive that high scorers get good grades not due to their competence but due to instructors’ favoritism), and first impression bias (e.g. students tend to perceive an instructor to be lenient in student evaluation because previously they had an interaction with the instructor and found him friendly) hinder students’ ability to make realistic predictions
regarding classmates academic potential and instructors’ attitude toward student evaluation. Such notion has been proved (H4) i.e. cognitive biases are negatively correlated with students’ predictive capability with respect to classmates’ academic potential and instructors’ attitude towards student evaluation. Besides, as suggested by the research finding that male students compared to female students at UCP are more likely to make realistic predictions about classmates’ academic potential and instructors’ attitude toward student evaluation. It can be accounted for the fact that male students are more likely to be extrovert, sociable, and problem-focused rather than emotion-focused; hence, they are likely to have better understanding of classmates’ academic strengths and weaknesses, and are likely to keep into account contextual factors while making behavior predictions. In short, socializing in form of social events and class group assignments, cognitive-behavioral trainings, and efforts to minimize students’ cognitive biases enhance the students’ predictive capability with respect to classmates’ academic potential and instructors’ attitudes toward student evaluation.

REFERENCES


