The Effects of Positive and Negative Mood on University Students' Learning and Academic Performance: Evidence from Indonesia

Ika Febrilia [1], Ari Warokka [2]

1. Practitioner in Customer Behavior and Human Resource Management, Citibank Indonesia
2. Assistant Professor in Finance and Management, College of Business – Universiti Utara Malaysia

Abstract

Recent empirical findings reveal the impact of positive mood on the performance of the students in processing information. Positive mood facilitates complex cognitive functions requiring flexibility, integration, and utilization of cognitive material such as memory, categorization, creative problem solving, decision-making and learning. This study extends the literature that has been done mostly in western societies by proposing a further linkage between positive and negative mood to students' learning and the impact of that learning on student's academic performance in Indonesian universities, which is rarely investigated in non-western societies. The data are collected by using questionnaires and a sample of 106 students who have mid-term examination (assessment) in their active academic semester. The result, based on analysis using structural equation modeling, indicates that the tested model has an acceptable fit. The findings also indicate that (1) positive mood has no influence on learning, (2) negative mood has negative influence on learning, and (3) learning has positive influence on student's academic performance.

Key word: Positive Mood, Negative Mood, Learning, Academic Performance

Background

Positive and negative mood, emotions, and affects, which are known as personality characteristics and traits, has generated much researchers' interests since its relationships on job commitment, job satisfaction, absenteeism, turnover, group affective tone, and job success within an organization (Chavez and Mendez, 2008). More recently, some empirical

findings have tied these personality characteristics and traits to leadership effectiveness through emotional intelligence (EI). These findings assert that EI can help leaders solve complex problems, make better decisions, be more adaptable, and handle crisis in a more emotionally stable manner (Goleman, 1995; Mayer and Salovey, 1995; Goleman et al., 2002; Tsai, Chen, and Cheng, 2009). In other words, this level of attention indicates that those personality characteristics and traits are significant aspects of organizational life and at certain level, are worthy to see this relationship in education or teaching area.

In any education institution, learning process is a main concern and focus of many parties that are involved in it. Learning is a loop in which the teacher facilitates learning, students performs what they have learned, the teacher assesses students' performance and provides students feedback on the students' performance, and students use the feedback to improve their performance on the next learning task (Lasso, 2008). Learning also means one's ability in processing various information that he/she receives. Bryan, Mathur, and Sullivan (1996) find that the impact of positive mood on the performance of the students in processing information. Positive mood facilitates complex cognitive functions requiring flexibility, integration, and utilization of cognitive material such as memory, categorization, creative problem solving, decision-making and learning. Therefore, it is reasonable to assume that it also affects underlying cognitive organization (Isen, 1987). In general, in studies of the impact of mood, positive mood has shown a facilitating impact on memory, learning, and behavior, whereas negative affect has a depressing impact. Positive mood has also been found to enhance the performance of behaviors that lead to positive outcomes such as greater personal power and greater freedom to act as one wishes.

Research Question

Isen (1984) argues that mood indirectly influences an on-going and succeeding event, although it does not have real nature effect and change the basic activity or context of that carry-on event. In other words, when a student is in a certain learning process, such as studying the material, concentrating in certain topics, understanding the lectures, memorizing and remembering some jargons or terminologies, and analyzing an experiment result, he/she will be influenced by his/her on-going mood. As result, one's performance is also affected by what he/she feels.

In higher education context, each student will generate academic performance that is variably for each other, whether it is determined by individual characteristic (for example, owned IQ) or by other factors, such as student's self-motivation to study. When mood (positive and negative) takes place in individual's mental state, intuitively, it will interfere his/her studying process, therefore academic performance as a result of one's learning process will also be disrupted. Student will perceive difficult in understanding the material transferred by its instructor, be less enthusiasm, eventually, generate adverted study behavior, and at the final point, perform an un-optimal academic performance. Therefore, in this study, we develop a structural equation model to measure the effect of positive and negative mood on academic performance, which is mediated by learning process.

Technical Terms

A **mood** is defined as "a type of affective state which is transient and particular to a specific time and situation" (Jeon, 1990, p.24). **Positive mood** is one's mental state and feelings where she/he feels more confident, optimistic, and unconstrained (Forest, Clark, Mills, & Isen, 1979). Individuals with positive moods were likely to process information less systematically, but more creatively and flexibly than those with negative moods (Park, 2002), therefore, if they feel good about the target object, they render a positive evaluation (Schwarz, 2001). When one feels anxiety, depression, and fatigue, it can be said that **negative mood** takes place his/her feeling state (Watson and Tellegen, 1985).

Learning process happens when one is acquiring new knowledge, behaviors, skills, values, or preferences and may involve synthesizing different types of information (Magno, 2003). Peterson and Piaget (1996) explained learning as a process that takes place through assimilation, accommodation, and equilibration. It starts from absorbing new experiences from the environment and adding these to the previous experiences, integrating of new experiences with the old, and formatting new insights and ways of thinking as a result of this integration. After assimilation and accommodation occurs, the individual is now in a state of equilibrium where the information processed becomes part of his or her schema (Reyes, 2000). **Academic performance** is measured from the increasing of examination and assignment results' efficiency, effectiveness, and quality, as an evaluation or assessment method on student's performance. This performance can be achieved, if it is supported by

qualified education system and effective learning process (Lebcir, Wells, and Bond, 2008; Lasso, 2008).

Framework of the study

Previous empirical findings find that positive mood states increase memory on various tasks, mastery of a discrimination task, and altruism (Jones and George, 1998). In 1996, Bryan et. al. find that positive mood also facilitates complex cognitive functions that require flexibility, integration, and utilization of cognitive material (e.g., word association and memory, creativity, and problem-solving). Their study also finds that positive moods induce students to organize the academic material in memory for better recall. It supports that student's positive mood will provide excitement to him/her to study; as a result, they are able to perform a better academic performance. It can be said that a higher level of one's positive mood, a higher of one's eagerness and motivation to study and get a better or higher examination result. Therefore, based on those arguments, the first hypothesis is:

H_1: Positive moods have positive influence on learning

One's negative moods sometime have certain ability in processing information more systematic, although at the same time, less creativity (Ciancy and Bierstaker, 2009). Negative moods, for example, have also been found to produce low-effort processing of information, the use of less complex semantic processing strategies (Ellis, Thomas, and Rodriguez, 1984), and lower cognitive processing effort (Leight and Ellis, 1981). Brand, Reimer, and Opwis (2007) find that one's negative mood will deteriorate learning process; therefore, it would produce adverted academic performance. It can be stated that a higher level of negative moods, a higher possibility of one gets lazy and is not motivated to study, as a result, he/she will get an un-optimal academic performance. Therefore, based on those arguments, the second hypothesis is:

H_2: Negative moods have negative influence on learning

Besides individual characteristics, such as IQ, mood or feeling states have influenced on student's learning process (Magno, 2003). A good learning process is assumed to produce a better academic performance (Lebcir, Wells, and Bond, 2008). One study that supports this argument is the study of Lan and Li (2003), which suggests an alternative learning process as an effort to improve student academic performance. It is argued that the better is student's

learning process, the better the academic performance that is able to be produced, and vice versa. Therefore, based on those arguments, the third hypothesis is:

H_3: Learning process have positive influence on student's academic performance

All these hypotheses can be summarized in the followed figure:

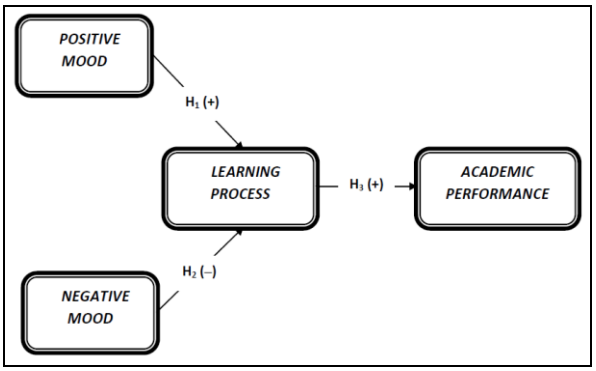


Figure 1: Research Model of the Effect of Positive and Negative Effect on University Students' Learning and Academic Performance

Research Methodology

Respondents were Indonesian private universities students, which were asked to answer the questionnaire, a week before taking a midterm examination in order to minimize the possible disturbing situation that was able to affect their mood or feeling states. This was done to determine if mood (positive or negative) would affect the students' learning process in an exam. Then, authors would analyze whether the students' learning process could affect the outcome or the exam results, which was proxied as academic performance.

In this study, positive mood and negative mood are independent variables. There are six items used to measure each positive moods and negative moods, respectively, in 5-Likert scale (5: strongly agree, 4: agree, 3: neutral, 2: disagree, and 1: strongly disagree). There are also six item used to measure learning process, in 5-Likert scale (5: always, 4: often, 3: seldom, 2: rarely, and 1: never). Meanwhile, to measure academic performance, it is used midterm examination result.

The authors distributed 116 questionnaires and there were 106 usable-questionnaires or 86% response rate. The descriptive statistic reveals results as follows:

Table 1: Inter-correlations

Constructs	Mean	Std. Dev.	(1)	(2)	(3)	(4)
(1) Positive Mood	4.05	0.565	1	-	-	-
(2) Negative Mood	2.03	0.622	-0.390**	1	-	-
(3) Learning	3.72	0.739	0.200*	-0.177	1	-
(4) Academic Performance	65.51	14.072	0.124	-0.188	0.230*	1

Note: ** $p < 0.01$; * $p < 0.05$

The independent variables' correlation, i.e., positive mood and negative mood, reveals that there is no severed multicollinearity, because the value (-0.390) is still below the maximum value, i.e., 0.80, which indicates the existence of multicollineartiy (Gujarati, 1995). The significant and positive correlation between positive mood and learning reveals that students' positive mood will influence his/her readiness to face the examination through various learning processes. Meanwhile, students' well-learning process will proceed to good examination results, as proved by the positive and significant correlation between learning process and academic performance.

The next step is to measure the validity and reliability of all items in the proposed constructs by using AMOS 16. From this process, there are two invalid items in learning construct.

Table 2: Result of CFA for measurement model of the effect of positive and negative effect on university students' learning and academic performance

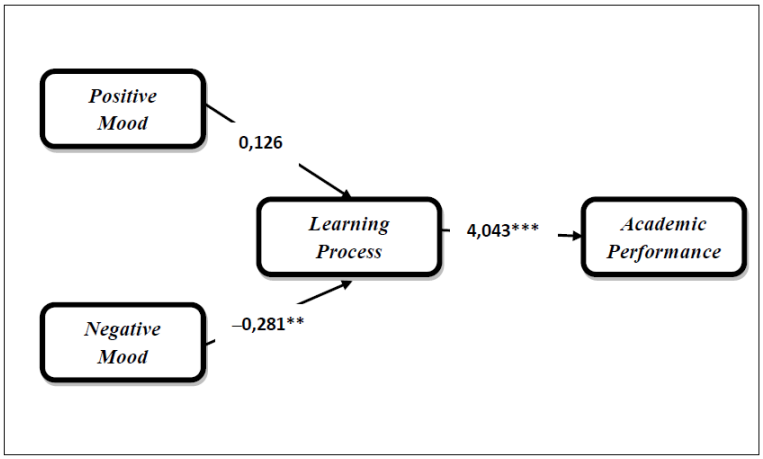
Construct	Item	Internal reliability Cronbach alpha	Factor loading	Composite reliability	Average variance extracted
Positive Mood	$PosMd_1$	0.844	0.795	0.898	0.596
	$PosMd_2$		0.820		
	$PosMd_3$		0.811		
	$PosMd_4$		0.747		
	$PosMd_5$		0.653		
	$PosMd_6$		0.795		
Negative Mood	$NegMd_1$	0.825	0.615	0.864	0.516
	$NegMd_2$		0.761		
	$NegMd_3$		0.645		
	$NegMd_4$		0.764		
	$NegMd_5$		0.783		
	$NegMd_6$		0.725		
Learning Process	$LearnProc_3$	0.759	0.765	0.851	0.589
	$LearnProc_4$		0.822		
	$LearnProc_5$		0.822		
	$LearnProc_6$		0.649		

The validity and reliability test reveals that only two items of learning process construct are not reliable, i.e., LearnProc1 and LearnProc2, which have Cronbach's Alpha value and factor loading below the minimum value 0.60 (Gujarati, 1995). Meanwhile to test the construct validity, it is used three approaches of convergent validity, i.e., factor loading, composite reliability, and average variance extracted. Standardized loading estimates should be 0.5 or higher, and ideally 0.7 or higher. In this study, all valid constructs have factor loading more than 0.5. Average variance extracted (AVE) estimates for two factors also should be greater than the square of the correlation between the two factors to provide evidence of discriminant validity. AVE should be 0.5 or greater to suggest adequate convergent validity, and in this study, all valid constructs have AVE value more than 0.5. Meanwhile for composite reliability, the construct reliability should be 0.7 or higher to indicate adequate convergence or internal consistency, and in this study all valid constructs have composite reliability value more than 0.7. Therefore, it can be said that all constructs used in this study are valid and reliable.

Table 3: Fit indices for the measurement model of the effect of positive and negative effect on university students' learning and academic performance

Fit Index	This Study	Recommended values	Source
df	2		
χ^2	2.003		
χ^2/df	1.001	≤ 3.00	Gefen (2000)
GFI	0.991	≥ 0.90	Hoyle (1995)
AGFI	0.953	≥ 0.80	Chau & Hu (2001)
CFI	1.000	≥ 0.90	Bagozzi & Yi (1988)
RMSEA	0.004	≤ 0.08	Browne and Cudeck (1993)
NNFI (TLI)	1.000	≥ 0.90	Bagozzi & Yi (1988)

The measurement model indices reveal that the proposed model is fit and parsimony.



Note: *** p< 0.01; ** p< 0.05

Figure 2: Path coefficients and hypothesis testing of the effect of positive and negative effect on university students' learning and academic performance

Conclusion

In this study, the results of hypothesis testing do not support the influence of positive mood on learning (β = 0,126; p > 0.1). This research is contrary to the first hypothesis stating the positive effect of positive mood on learning. Logically positive mood can trigger someone (student) become more excited and motivated to be involved in the learning process, to prepare himself/herself, and to deal with the academic performance evaluation. However, a student who is experiencing a good or positive mood, it does not ensure that student is able to concentrate and really be prepared in the learning process to prepare themselves for exams.

For the second hypothesis testing, the result reveals that the negative mood affects learning (β = -0.281, p <0.05). In other words, this study supports the hypothesis that bad mood negatively affect learning. Bad-moods students will have a lower level of concentration and perseverance in the learning process to prepare themselves for exams.

Finally, the result shows that learning process has big effect on academic performance (β = 4.043, p <0.01), as indicated in its coefficient value that is more than 1.00 and compared to the coefficients of negative mood and positive mood, which is less than 1.00. It indicates that besides students' mood (positive or negative), there are some independent variables, which implicitly play important roles in the learning process. Those variables, unfortunately, are not investigated yet in this study, such as learning environment, type of tasks, and learning feedback. However, this study supports the third hypothesis that learning has positive influence on students' academic performance. This supports the assumption that

students, who really run the learning process well, will also get favorable results or good test scores.

Discussions

A different expected result of first hypothesis testing provokes some arguments. It can be argued that this happens because students feel that learning is not something that is important, and they tend to focus on feelings or activities that make their mood become good. It can be assumed that students are too enjoy their feeling of joy, so do not concentrate and feel lazy to do other activities, except those that are able to foster their positive mood. They chose to do an activity that is considered more fun than learning or preparing for exams. Learning will be something boring and less fun for the students who are experiencing the positive mood.

In the second hypothesis testing, students who feel bad mood tend to be lazy to do various activities, especially activities associated with academic matters. Negative mood will trigger more bad energy to students for being less concentrated and un-focus with the materials given by the instructor during his presence in the classroom. Students feel very sad and just think about the factors that make their mood be bad, so the learning process will be disrupted. They become less paying-intention in learning and prefer the other things outside of class.

Finally, in the third hypothesis testing, the result supports the assumption that students, who actually run the various learning activities well, will also get a good test scores. If a student has a strong desire to learn, his/her academic performance will also increase, and vice versa. In other words, students who are eager and diligent in learning process and doing the exercises before the exam, as well as enthusiastic in discussing with their friends and teachers about the material that is considered difficult, will get the increasing of academic performance.

Recommendations

With the positive findings in this study, there some suggested applicable practices that can be implemented in daily lecturing activities, such as lecturer as a facilitator is expected to build a conducive classroom situation or a pleasant atmosphere for its students. It is expected

that lecturers take a significant role to help improving the positive mood of students who might be bad, keeping the student does not become a bad mood, and encourage his/her students' mind to put full concentration only on a good learning process, in order to produce an optimal academic performance.

On the other side, students must also try to control their mood. Students should be able to motivate themselves to the relentless will and the high spirit of learning. If these students are able to maintain high motivation in learning, which are supported by the teachers and education institutions, it could be expected to minimize the negative influence of mood on learning and academic performance. In certain cases, probably positive mood could be annoying, such as over-excitement, while in many cases, a negative mood would be surely deconstructing the students' learning process.

References

Antoni, J., Leung, K., and Knowles, G. (2002). Critical success factors of TQM implementation in Hong Kong industries, *International Journal of Quality and Reliability Management*, Vol. 19 (5), pp. 551–566.

Brand, S., Reimer, T., and Opwis, K. (2007). How do we learn in a negative mood? Effects of a negative mood on learning's transfer, *Learning and Instruction*, Vol. 17, *Issue* 1, pp. 1–16.

Bryan, T., Mathur, S., and Sullivan, K. (1996). The impact of positive mood on learning, *Learning Disability Quarterly*, Vol. 19, No. 3, pp. 153–162.

Chavez, C. I., and Méndez, M. J. (2008). Mood, emotion, and affect in group performance: An experiential exercise, *Organization Management Journal*, 5, pp. 153–166.

Cianci, A. M., and Bierstaker, J. L. (2009). The impact of positive and negative mood on the hypothesis generation and ethical judgments of auditors, *Journal of Practice & Theory*, Vol. 28, No. 2, pp. 119–144.

Côté, S., and Miners, C. T. H. (2006). Emotional intelligence, cognitive intelligence, and job performance, *Administrative Science Quarterly*, Vol. 51, No. 1, pp. 1–28.

Elerina Maria D. T. (2008). *The effects of job satisfaction, organizational commitment, and motivation on local government managerial performance*, Gadjah Mada University, Dissertation (unpublished).

Ellis, H.C., Thomas, R.L., & Rodrigues, I.A. (1984). Emotional mood states and memory: Elaborative encoding, semantic processing, and cognitive effort. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 10, pp. 470-482.

Forest, D., Clark, M., Mills, J., & Isen, A. (1979). Helping as a function of feeling state and nature of the helping behavior. *Motivation and Emotion*, 3(2), pp. 161-169.

George, J. M., and Jones, G. R. (1997). Experiencing work: Values, attitudes, and moods, *Human Relations*, Vol. 50, No. 4, p. 393.

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York: Bantam Books.

Goleman, D., Boyatzis, R. & McKee, A. (2002). *Primal leadership: Realizing the power of emotional intelligence*. Boston: Harvard Business School Press.

Goodhue, D. L., and Thompson, R. L. (1995). Task technology fit and individual performance, *MIS Quarterly*, 19 (2), pp. 213–236.

Gujarati, D. N. (1995). *Basic Econometrics*, New York: McGraw-Hill.

Isen, A.M. (1987). The influence of positive and negative effect on cognitive organization. In N.L. Stein, E. Leventhal, & T. Trabasso (Eds.), *Psychological and Biological Approaches to Emotion* (pp. 75-94). Hillsdale, NJ: Lawrence Erlbaum.

Jeon, J. O. (1990). *An empirical investigation of the relationship between affective states, in-store browsing, and impulse buying*. University of Alabama. Dissertation (unpublished).

Jones, G. R., and George, J. M. (1998). The experience and evolution of trust: Implications for cooperation and teamwork, *The Academy of Management Review*, 23 (3), p. 531.

Keller, P. A., Lipkus, I. M., and Rimer, B. K. (2002). Depressive realism and health risk accuracy: The negative consequences of positive mood, *The Journal of Consumer Research*, Vol. 29, No. 1, pp. 57–69.

Lan, M. C., and Li, M. (2003). *The relationship between classroom practices on homework and student performance in mathematics on TIMSS,* University of Washington.

Lasso, R. A. (2008). *Is our students learning? Using assessments to measure and improve law school learning,* John Marshall Law School.

Lebcir, R.M., Wells, H., and Bond, A. (2008). Factors affecting academic performance of international students in project management courses: A case study from a British Post 92 University. *International Journal of Project Management*, Vol. 26, Issue 3, pp. 268-274.

Leight, K. A., and Ellis, H. C. (1981). Emotional mood states, strategies and state-dependency in memory, *Journal of Verbal Learning and Verbal Behavior*, 20, pp. 251-266.

Magno, C. (2003). Modern trends in the psychology of learning and teaching, *UPHL Institutional Journal*, Vol. 1, *Issue* 1, pp. 12–31.

Mayer, J. D., & Salovey, P. (1995). Emotional intelligence and the construction and regulation of feelings. *Applied and Preventive Psychology*, 4.197-208

Park, J. H. (2002). *The effect of product presentation on mood, perceived risk, and apparel purchase intention in internet apparel shopping,* Ohio State University.

Peck, S. R. (1994). Exploring the link between organizational strategy and the employment relationship: The role of human resources policy, *Journal of Management Studies*, 31, pp. 715–735.

Prajogo, W. (2008). *The effects* of *leadership and personality on capital social and its impact on performance,* Gadjah Mada University, Dissertation (unpublished).

Reyes, F. (2000). *Engineering the curriculum: A guidebook to educators and school managers*. De la Salle University: DLSU Press Inc.

Salovey. P., and Grewal. D. (2005). *The science of emotional intelligence, current directions in psychological science,* Emotional Intelligence from Wikipedia, The Free Encyclopedia.

Schwarz, N. (2001). Feelings as information: Implications for affective influences on information processing. In Martin, L. L., & Clore, G. L. (Eds.), *Theories of mood and cognition*, (pp 159-176). Mahwah, NJ: Lawrence Erlbaum.

Swinyard, W. R. (1993). The effect of mood, involvement, and quality of store experience on shopping intention, *The Journal of Consumer Research*, Vol. 20, No. 2, pp. 271–280.

Tabachnick, B. G., and Fidell, L. S. (1996). *Using Multivariate Statistics*, Harper Collins College Publishers.

Tsai, W. C., Chen, H. W., and Cheng, J. W. (2009). Employee positive moods as a mediator linking transformational leadership and employee work outcomes, *The International Journal of Human Resource Management*, Vol. 20, No. 1, pp. 206–219.

Watson, D., and Tellegen A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, 98, pp. 219–235.