

The Mediating Effects of Defense Mechanisms on Student Satisfaction

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Abstract

Student satisfaction studies have become increasingly common in the education literature, since students now see themselves as customers, and customer-centric strategies are thus spreading throughout universities. This study extends traditional service management concepts to educational settings and draws on the expectation–disconfirmation paradigm (EDP) to examine the underlying relationships among student satisfaction, disconfirmation, and defense mechanisms. It proposes that student’ defense mechanisms (i.e. adaptive defense and maladaptive defense) mediate their disconfirmation and shape their responses to their satisfaction. A sample of students (n = 258) majoring in finance at a business school were surveyed for this study, and the findings suggested that the adaptive defense mechanisms have a mediating influence on student satisfaction, while the maladaptive defense ones are mediated by disconfirmation. The implications of this study, with regard to how to cope with student defense mechanisms when they have strong disconfirmation compared with their expectations and perceived quality, are also discussed.

Introduction

Student satisfaction studies have become increasingly common in the education literature, due to the rising cost of tuition and the related fact that more and more students now see themselves as customers. Many universities are beginning to adopt customer-centric strategies in order to satisfy students, and an increasing amount of research has been done to extend traditional service management concepts to educational settings. A number of innovative methods have been devised to capture student voices as both active participants and customers in a service delivery encounter. For example, Stodnick and Rogers [1] suggested that a customer-centric service quality scale, such as SERVQUAL, is superior to a traditional student assessment scale when it is appropriately applied in the classroom setting of higher education institutions. Much evidence has also been gathered in the field of education for the direct impact of perceived quality on student satisfaction [e.g. 2-5].

Based on the expectation-disconfirmation paradigm (EDP), student satisfaction is expected to be greatly influenced by their disconfirmation. Research based on cognitive dissonance theory or social cognition suggests that the socially prescribed disconfirmation is associated with stress or anxiety, which are unpleasant emotion that have been implicated in the regulation of defense mechanisms. It has thus been predicted that the various dimensions of disconfirmation are associated with different defense styles. Therefore, finding a way to deal with the students’ stress that arises from their disconfirmation is one important way to improve educational service quality. To this end, this article hypothesizes that adaptive and maladaptive defense styles mediate the association between disconfirmation and satisfaction.

This paper is organized as follows. The next section presents review of the related literature and develops the hypotheses. The research method and analysis approaches are then described, while the final section, we discuss the results and their implications.

Literature review

The EDP and service quality

Under the EDP, three predictor variables (expectation, perceived quality and disconfirmation) are significantly related to overall customer satisfaction. Satisfaction is an increasing function of expectations, perceived quality and disconfirmation, and expectations are expected to have a direct positive effect on perceived quality [6, 7]. The EDP views consumer satisfaction with the goods and services provided as typically deriving from a measure of disconfirmation, which is a comparison of perceived to expected quality. Positive disconfirmation occurs when perceived quality exceeds expectations, while negative disconfirmation takes place when perceived quality falls short of expectations.

Since Parasuraman et al. [8] introduced a 22-item scale, called SERVQUAL, for measuring service quality, the concept of service quality has been widely adopted across industries and has been examined with regard to its impact on profit [9]. Service quality is evaluated by comparing the perception of the service received to prior expectations of it, and this is also the process seen with the EDP. In the higher education marketplace, there is a trend to seeing students as fee payers and customers, who can thus reasonably demand a level of service quality that also represents their voices and views [10].

Defense mechanisms

The concept of the defense mechanism in psychology began with Sigmund Freud's ego mechanisms of defense, which are mental operations that "protect the individual from painful emotions, ideas, and drives" [11, p.3]. Later, Anna Freud [12] described these defense mechanisms as "the ways and means by which the ego wards off pleasure and anxiety and exercises control over impulsive behavior, affects and instinctive urges" [12, p. v]. Vaillant [11, 13, 14] developed a hierarchical model of defense mechanisms, in which he described defense styles as being associated with different levels of developmental maturity (from maladaptive versus adaptive forms), such as psychotic defenses (i.e., delusions and distortions), immature defenses (i.e., projection and denial), neurotic defenses (i.e., reaction formation), and mature defenses (i.e., sublimation).

More generally, at different stages of personality development, different types of defense mechanism become more salient, with the immature defenses of early eventually giving way to more mature ones [13, 15, 16]. The maladaptive defenses of earlier development have been implicated not only in the individual experience of various forms of maladjustment, including personality disorders and anxiety disorders [15-17], but also in a management context in relation to resisting to organization change [18]. In contrast, the adaptive or mature defenses are more involved with cognitive operations and associated with concept of positive psychology and the mental health [16, 19].

Hypotheses development and research framework

Lazarus [20] saw of ego-defenses as a characteristic style for dealing with threats that involve a generic conception. In this article, the primary and secondary appraisal processes (in terms of Lazarus' stress theory [21]) can be used to help predict under what conditions we might expect different student responses. (a) When students see disconfirmation as threatening or harmful (i.e., primary appraisal), they are likely to respond less constructively

and use more maladaptive defense mechanisms (i.e. denial, dissociation, isolation of affect, and projection) than adaptive ones. For example, when students face inner conflicts, those with less denial might find more satisfying solutions to their problems than those with more denial, with this latter conditioning meaning that “an individual deals with emotional conflict or internal or external stressors by refusing to acknowledge some painful aspects of external reality or subjective experience that would be apparent to others” [22, p. 811]. (b) When students believe they can effectively cope with the disconfirmation (i.e., secondary appraisal), they are likely to respond more actively and use more adaptive defense mechanisms than maladaptive ones. Through secondary appraisal, students evaluate what can be done to overcome a problem or prevent harm. Students’ positive beliefs about the kinds of resources available help cope with disconfirmation influence the secondary appraisal process, and can lead to more satisfaction. Moreover, the adaptive defense mechanisms have an inverse relation with impulsiveness [23], and will enhance students’ evaluations that they can deal with the disconfirmation that they encounter, thus leading to more satisfaction. Therefore, we hypothesize:

H1: The defense mechanisms will mediate the relation between disconfirmation and satisfaction.

With regard to students’ disappointment with the education they are receiving, their defenses mechanisms can reduce their inner conflict and cognitive dissonance, and can restore psychological homeostasis by enabling them to ignore or deflect the sudden increases in affective and instinctual pressure that arise from the anxiety of disconfirmation. Expectancy disconfirmation is a specific type of value judgment, associated with whether prior expectations are confirmed or disconfirmed by post-purchase beliefs arising from experiences with the product/service. Students may fear that they could lose their social support (e.g. from friends or instructors) and that fewer scholarships or career opportunities will be available to them if they feel strong negative disconfirmation or dissonance, which might thus lead to anxiety and/or depression.

H2: The defense mechanisms will influence disconfirmation on satisfaction.

Research model

This study is carried out to evaluate the effects of defense mechanisms on the disconfirmation felt by students when comparing the actual service quality receive with their expectations in an educational context. Figure I shows the research model used in this work.

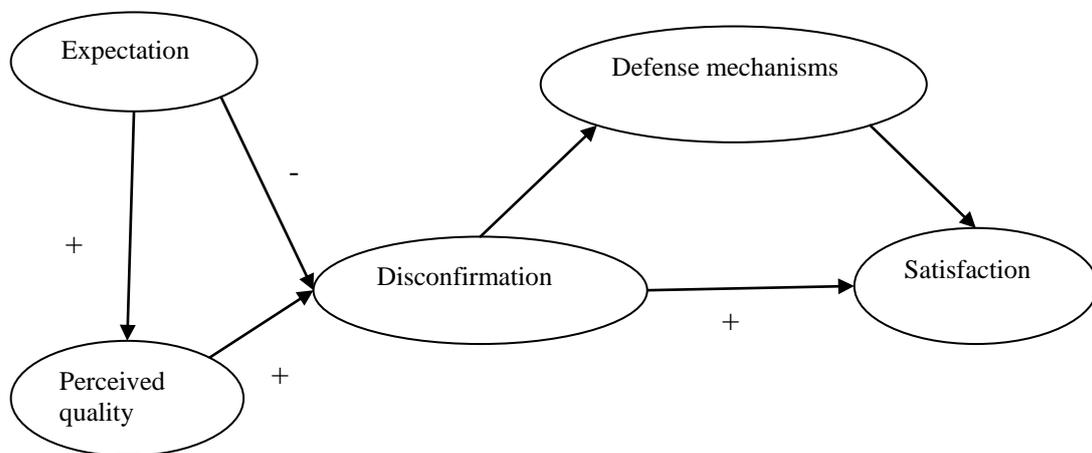


Figure I. Research Model

Method

The data collection process, the measurements used, and the data analysis performed are described in detail below.

Sample and data collection

The sample for this research consisted of four undergraduate Financial Management courses at a large north private university. The course content included Introduction to Financial Management, Banking and Financial Markets, International Finance, and Investments. Each student in the four courses was asked to voluntarily fill out the survey at the both beginning and end of the semester. The participants began in the first week of semester by writing their expectations for their courses. The researcher introduced herself and explained the purpose and aims of the research, and the participants were then given a questionnaire to complete. At the end of the semester, the participants were surveyed with regard to their satisfaction with the university, and asked to give performance evaluation of it. The total sample size was 258, of which 58% were male and 42% female, and the mean age of the respondents was 21.06 (SD=1.26, range=19–23).

Measures

Student satisfaction was adopted from Hasan, Ilias, Rahman and Razak [24], and measured using six survey items that read, for example, “I am satisfied with my decision to attend this course module” and “if have a choice to do it all over again, I still will enroll in this course module”. Each satisfaction measure used a six-point ordinal scale with 1 = strongly disagree to 6 = strongly agree.

Perceived quality has been defined as customer perceptions of how a product or service fulfills their needs, wants, and desires [25]. The measure of perceived quality used in this study was adopted from the Stodnick and Rogers [1] on a six-point scale, from 1 (strongly disagree) to 6 (strongly agree). Sample items are that “the instructor is genuinely concerned about the students”, “the instructor is knowledgeable in his/her field”, and “the classroom is modern and updated”.

Expectation was constructed using items similar to those included in the quality received variable. Expectation is defined as a set of beliefs held by students about the performance of the university and themselves. The measurement items used a six-point ordinal scale with values ranging from 1 (extremely unimportant) to 6 (extremely important).

Disconfirmation is defined as a consumer’s subjective judgments resulting from comparing their expectations and their perceptions of performance received. In this work, students’ perceptions of service quality are measured with a disconfirmation measurement as an independent construct, with a six-point ordinal scale with values ranging from 1 (much worse than I thought) to 6 (much better than I thought).

Defense mechanism is measured as a self-report inventory that assesses specific defense mechanisms in terms of DSM-IV-TR concepts. Two types of defense mechanism measures (adaptive and maladaptive defenses) were adopted from Bovey and Hede [18], with modifications to fit the specific context of students’ responses. All questionnaire items for defense mechanism used a six-point scale (1 = strongly disagree, 6 = strongly agree).

Analysis and results

Model fit

Confirmatory factor analysis (CFA) was conducted to assess the viability of the separate constructs in the measurement model, and the results show that the six-factor model

(i.e. expectation, perceive quality, disconfirmation, satisfaction, adaptive defense, and maladaptive defense) is better than the four-factor one (i.e. disconfirmation, satisfaction, adaptive defense, and maladaptive defense) indicating the distinctiveness of the six constructs used in this study. The chi-square value for the six-factor model ($\chi^2/df = 3.23, df = 2543$) is significantly lower than that for the four-factor model ($\chi^2/df = 4.15, df = 1648$). The fit indices also show a better fit for the six-factor model (GFI = 0.46, RMSEA = 0.12, CFI = 0.71, NFI = 0.63, SRMR = 0.093) than for the four-factor one (GFI = 0.44, RMSEA = 0.14, CFI = 0.72, NFI = 0.66, SRMR = 0.10). Thus, the structural equation model was tested using six constructs in our proposal framework.

The mediating effects of defense mechanisms

To test the hypothesized model, we followed the work of Baron and Kenny [26] and Cheung [27] to assess the conditions of mediation (Figure II). In this section, a mediator is a variable that explains the psychological mechanism (i.e. defense mechanisms) between two variables (i.e. disconfirmation and satisfaction)

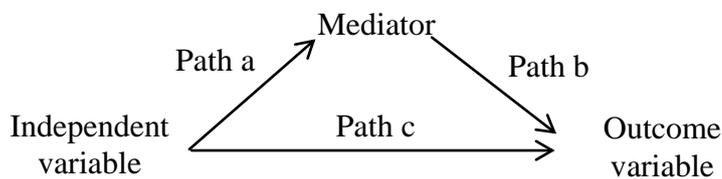


Figure II. Mediator model
Source: [26, p. 1176]

First, the main effect between disconfirmation and satisfaction should not equal 0, and the related coefficient indicates a significant relationship between disconfirmation and student satisfaction ($\gamma = 0.31, p = 0.049 < 0.05$).

Second, the direct effect of defense mechanism on satisfaction is not 0 in the structural equation model relating the outcome to treatment assignment and the mediator (i.e., Path b). The related coefficient indicates significant relationships between adaptive defense and student satisfaction ($\gamma = 0.14, p = 0.025 < 0.05$), and between maladaptive defense and student satisfaction ($\gamma = 0.10, p = 0.015 < 0.05$)

Third, disconfirmation affects the mediator (defense mechanism), that is, the direct effect of offering the treatment on the mediator is not 0 (i.e., Path a in Figure II). There are significant relationships between disconfirmation and adaptive defense ($\gamma = 0.13, p = 0.032 < 0.05$), and between disconfirmation and maladaptive defense ($\gamma = 0.10, p = 0.025 < 0.05$).

Finally, the total effect of the treatment assignment (disconfirmation) on outcome (student satisfaction) is not 0. The results suggest that adaptive defense partially mediates the relationship between disconfirmation and student satisfaction ($\gamma = 0.076, p = 0.049 < 0.05$), while there is no significant relationship between maladaptive defense and satisfaction ($\gamma = 0.29, p = 0.17 > 0.05$). The results are presented in Table I.

Table I. Mediating effect of defense mechanisms to satisfaction

	SS	SS	DA	DM	SS
DC	0.31*(c)		0.13*(a1)	0.10*(a2)	0.26*(c')
DA		0.14**(b1)			0.076*
DM		0.10**(b2)			0.29

Notes * $p < 0.05$, ** $P < 0.01$. DA: adaptive defense mechanism; DM: maladaptive defense mechanism; DC: disconfirmation; SS: student satisfaction. () indicates the reference path between variables in Figure II.

The mediating effects of disconfirmation

To examine the Hypothesis 2, the mediating role of disconfirmation was assessed to verify the structural influences of the defense mechanisms, as the results are as follows. First, the main effects between defense mechanisms and satisfaction are not equal 0 ($\gamma = 0.14, p = 0.025 < 0.05$ for adaptive defense and $\gamma = 0.10, p = 0.015 < 0.05$ for maladaptive defense). Second, the variations in the mediator (i.e. disconfirmation) account for significant variations in the dependent variable (i.e. satisfaction) ($\gamma = 0.31, p = 0.049 < 0.05$). Third, maladaptive defense mechanisms have significant effect on disconfirmation ($\gamma = 0.17, p = 0.045 < 0.05$) while the adaptive ones have no significantly influence on it ($p = 0.19 > 0.05$). Finally, when Paths a and Path b are controlled, the results indicate that a previously significant relation ($\gamma = 0.10, p = 0.025 < 0.05$) between maladaptive defense mechanisms and satisfaction is no longer significant ($\gamma = 0.08, p = 0.140 > 0.05$). As showed in the Table II, the maladaptive defense mechanisms have the influence on disconfirmation.

Table II. Mediating effect of disconfirmation

	SS	SS	DC	SS
DC		0.31*(b)		0.24*
DA	0.14*(c1)		0.19 (a)	0.10*(c1')
DM	0.10*(c2)		0.17*(a)	0.08 (c2')

Notes * $p < 0.05$, ** $P < 0.01$. DA: adaptive defense mechanism; DM: maladaptive defense mechanism; DC: disconfirmation; SS: student satisfaction. () indicates the reference path between variables in Figure II.

The mediating effects of disconfirmation and defense mechanisms

The results of the mediation tests suggest that disconfirmation has both direct and indirect effects through adaptive defense on student satisfaction; and that maladaptive defense has indirect effects on student satisfaction through disconfirmation. The fit indices for this integrated model are $\chi^2 / df = 3.87$, GFI = 0.4, RMSEA = 0.14, CFI = 0.62, NFI = 0.55, and SRMR = 0.014. Table III compares the fit of alternative models (examining the moderating roles of disconfirmation and defense mechanisms) to the integrated mediated model (Model 3), while Figure III presents the LISREL estimates for three models.

Table III. Comparison of the three models (n=258)

Model	χ^2	df	GFI	RMSEA	CFI	NFI	SRMR
Model 1	9880.82	2551	0.40	0.14	0.62	0.55	0.14
Model 2	9818.18	2550	0.40	0.14	0.62	0.55	0.14
Model 3	9897.74	2551	0.40	0.14	0.62	0.55	0.14

Notes: Model 1 full mediating effects of defense mechanism; Model 2 full mediating effect of disconfirmation; Model 3 integrated mediating effects of defense mechanisms and disconfirmation.

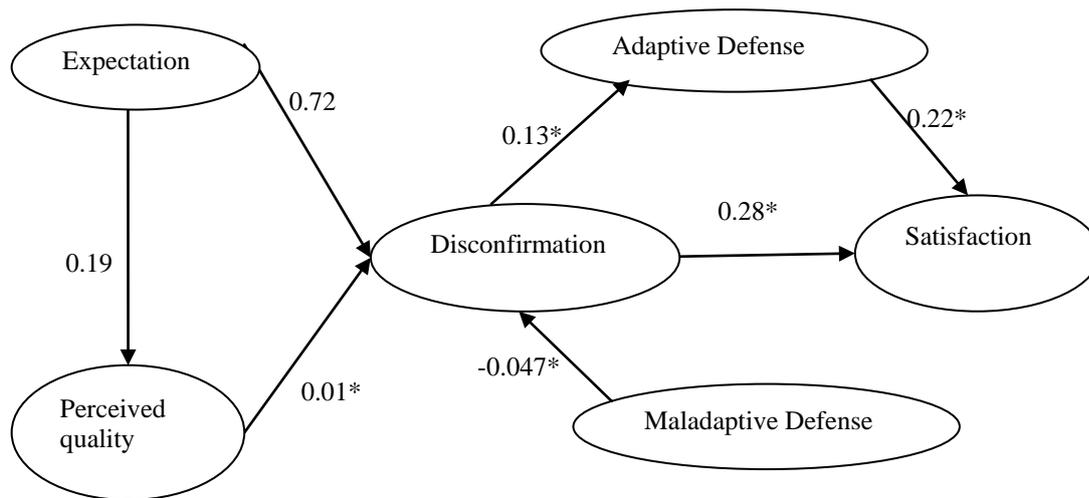


Figure III. The integrated mediating model of defense mechanism and disconfirmation

Discussion

Disconfirmation reflects a potentially stressful encounter for students, as it represents an irrevocable loss or harmful threat. Defense mechanisms with the regulating function of reducing the conflicts that arise between internal and external realities play an important role in reducing anxiety from cognitive dissonance or disconfirmation [19]. Lazarus's theory of stress [21] is used in this work to explain student defense-responses to disconfirmation, because it posits that how individuals respond to a stressful situation will depend on how they construe or appraise it. Defenses mechanisms can allow a student to reduce conflict and cognitive dissonance during sudden changes in internal and external realities when they feel they are powerless to change the situations they confront. Defense mechanisms might thus moderate the primary appraisal process by reducing or ignoring the evaluation of the threat inherent in disconfirmations, and influence the secondary appraisal process by requiring a student to ideationally deal with his or her coping resources and options.

Moreover, the results of this study suggest that maladaptive defense mechanisms (i.e. denial, dissociation, isolation of affect, projection) will increase the perceptions of threat stemming from disconfirmation (which making students feel the perceived service quality is much worse than they expected), and thus facilitate less constructive student responses in an educational context. The maladaptive defense mechanisms here seems to be a form of emotional regulation that shapes the primary appraisal process by reducing the evaluation of the threat inherent in disconfirmation, and thus leads to more dissatisfaction.

Furthermore, the adaptive defense mechanisms (e.g. humor and anticipation) play important buffering roles, serving as a form of cognitive regulation that can mitigate the helplessness often experienced by students during disconfirmation, thus facilitating more positive responses. The two dimensions we describe above (i.e. anticipation and humor) help to explain why adaptive rather than maladaptive defense mechanisms should have more influence on secondary appraisal. For example, the more students have a sense of anticipation, the more they can see themselves as having "the capacity to perceive future danger affectively as well as cognitively and by this means to master conflict in small steps" [19, p.94]. Thus, students who worry about their grades will make extra efforts to prepare for any assignments or tests, and then are more able to cope with the disconfirmation of received

educational quality.

Conclusion

The model presented in this work formalizes the mediating effects of defense mechanisms and disconfirmation based on the EDP framework to better understand the level of perceived service quality on student satisfaction. The results indicate that disconfirmation is the main determinant of satisfaction with regard to students' assessments of their education quality, while the defense mechanisms mediate the link between disconfirmation and satisfaction.

This study makes the following contributions to the literature. First, although previous researchers have successfully applied the EDP to customers and product users, this article considers whether the model is also applicable in an educational context. Similar to the study of Hasan and Ilias [24], the customer satisfaction theory was selected and modified to explain the meaning of student satisfaction, and it provides an innovative perspective on the current consumer-oriented higher education marketplace. Moreover, the findings provide clear evidence in support of a mediational model of the effects of individually perceived educational quality on satisfaction, thus filling the gap between current research of disconfirmation and potential coping strategies. Few EDP studies examine how to deal with disconfirmation, and this article provides coping strategies that can encourage students to develop healthy psychological responses when encounter disconfirmation.

This study has some limitations that suggest avenues for future research. First, the measurement of defense mechanisms uses incorporated a set of self-reported outcome assessments, which only provides information about the individual students' internal evaluations. Second, the participants were sampled from students in a university, and all were aged between 19 and 23. In order to better understand the development of defense mechanisms, further studies should include more children and older adults. Third, although the hypothesized model was consistent with the data, other models might fit the data equally well. Moreover, a longitudinal design, cross-validation of the findings, and more sources of data would enable us to further assess the causality of the hypothesized relationships.

References

1. Stodnick, M. and Rogers, P., (2008), "Using SERVQUAL to Measure the Quality of the Classroom Experience", *Decision Sciences Journal of Innovative Education*, Vol. 6, Issue, 1, pp. 115-133.
2. Arambewela, R., Hall, J. and Zuhair, S., (2006), "Postgraduate International Students from Asia: Factors Influencing Satisfaction", *Journal of Marketing for Higher Education*, Vol. 15, Issue, 2, pp. 105-127.
3. Mostafa, M. M., (2006), "A Comparison of SERVQUAL and I-P Analysis: Measuring and Improving Service Quality in Egyptian Private Universities", *Journal of Marketing for Higher Education*, Vol. 16, Issue, 2, pp. 83-104.
4. Prugsamatz, S., Heaney, J.-G. and Alpert, F., (2007), "Measuring and Investigating Pretrial Multi-Expectations of Service Quality Within the Higher Education Context", *Journal of Marketing for Higher Education*, Vol. 17, Issue, 1, pp. 17-47.
5. Clemes, M. D., Gan, C. E. C. and Kao, T.-H., (2008), "University Student Satisfaction: An Empirical Analysis", *Journal of Marketing for Higher Education*, Vol. 17, Issue, 2, pp. 292-325.

6. Anderson, E. W. and Sullivan, M. W., (1993), "The antecedents and consequences of customer satisfaction for firms", *Marketing Science*, Vol. 12, Issue, 2, pp. 125-143.
7. Poister, T. H. and Thomas, J. C., (2011), "The Effect of Expectations and Expectancy Confirmation/Disconfirmation on Motorists' Satisfaction with State Highways", *Journal of Public Administration Research and Theory*, Vol. 21, Issue, 4, pp. 601-617.
8. Parasuraman, A., Zeithaml, V. A. and Berry, L. L., (1988), "Servqual: A Multiple-Item Scale For Measuring Consumer Perc", *Journal of Retailing*, Vol. 64, Issue, 1, pp. 12-40.
9. Zeithaml, V. A., Berry, L. L. and Parasuraman, A., (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60, Issue, 2, pp. 31-46.
10. Hasan, H. F. A. and Ilias, A., (2008), "Service Quality and Student Satisfaction: A Case Study at Private Higher Education Institutions", *Business Research*, Vol. 1, Issue, 3, pp. 163-175.
11. Vaillant, G. E., (1992), *Ego mechanisms of defenses: a guide for clinicians and researchers*. Washington, DC: American Psychiatric Press.
12. Freud, A., (1965), *The ego and the mechanisms of defence*. New York: International University Press.
13. Vaillant, G. E., (1977), *Adaptation to life*. Boston: Little Brown.
14. Vaillant, G. E., (1994), "Ego mechanisms of defense and personality psychopathology", *Journal of Abnormal Psychology*, Vol. 103, pp. 44-50.
15. Flett, G. L., Besser, A. and Hewitt, P. L., (2005), "Perfectionism, Ego Defense Styles, and Depression: A Comparison of Self-Reports Versus Informant Ratings", *Journal of Personality*, Vol. 73, Issue, 5, pp. 1355-1396.
16. Cramer, P., (2009), "The development of defense mechanisms from pre-adolescence to early adulthood: Do IQ and social class matter? A longitudinal study", *Journal of Research in Personality*, Vol. 43, Issue, 3, pp. 464-471.
17. Kennedy, B. L., Schwab, J. J. and Hyde, J. A., (2001), "Defense Styles and Personality Dimensions of Research Subjects with Anxiety and Depressive Disorders", *Psychiatric Quarterly*, Vol. 72, Issue, 3, pp. 251-262.
18. Bovey, W. H. and Hede, A., (2001), "Resistance to organisational change: The role of defence mechanisms", *Journal of Managerial Psychology*, Vol. 16, Issue, 7/8, pp. 534-548.
19. Vaillant, G. E., (2000), "Adaptive mental mechanisms: Their role in a positive psychology", *The American psychologist*, Vol. 55, Issue, 1, p. 89-98.
20. Lazarus, R. S., (1993), "Coping theory and research: past, present, and future", *Psychosomatic medicine*, Vol. 55, Issue, 3, pp. 234-47.
21. Lazarus, R. S. and Folkman, S., (1984), *Stress, appraisal, and coping*. New York: Springer Publishing.
22. American Psychiatric Association, (2000), *Diagnostic and statistical manual of mental disorders: Text Revision (DSM-IV-TR)*, 4th ed. Washington, DC: American Psychiatric Association.
23. Koenigsberg, H. W., Harvey, P. D., Mitropoulou, V., New, A. S., Goodman, M., Silverman, J., Serby, M., Schopick, F. and Siever, L. J., (2001), "Are the Interpersonal and Identity Disturbances in the Borderline Personality Disorder

- Criteria Linked to the Traits of Affective Instability and Impulsivity?", *Journal of Personality Disorders*, Vol. 15, Issue, 4, pp. 358-370.
24. Hasan, H. F. A., Ilias, A., Rahman, R. A. and Razak, M. Z. A., (2008), "Service Quality and Student Satisfaction: A Case Study at Private Higher Education Institutions", *International Business Research*, Vol. 1, Issue, 3, pp. 163-175.
 25. Cadotte, E. R., Woodruff, R. B. and Jenkins, R. L., (1987), "Expectations and Norms in Models of Consumer Satisfaction", *JMR, Journal of Marketing Research*, Vol. 24, Issue, 3, pp. 305-305.
 26. Baron, R. M. and Kenny, D. A., (1986), "The moderator-mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51, Issue, 6, pp. 1173-1183.
 27. Cheung, M. W. L., (2007), "Comparison of Approaches to Constructing Confidence Intervals for Mediating Effects Using Structural Equation Models", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 14, Issue, 2, pp. 227-246.