The Modeling of School Climate Perception and Positive Youth Development with Academic Buoyancy

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ABSTRACT: Academic buoyancy is defined as maintaining academic competence and positive adjustment against existing adversities in adolescents’ developmental path in their academic context. The present research was conducted aiming at investigating the mediatory role of positive youth development concerning the relation between students’ school climate perception and their academic buoyancy in a casual model. For this purpose, 400 female high school students of Kerman responded to the scale of school climate perception, positive youth development and Academic buoyancy. The results of the analysis of structural equations indicated that the effect of school climate perception and positive youth development on academic buoyancy is positive and significant. The effect of school climate perception on academic buoyancy is positive and significant. The indirect effect of school climate perception on academic buoyancy is positive and significant through positive youth development. Therefore, positive youth development plays a mediatory role concerning the relation between school climate perception and academic buoyancy. In addition, results indicated that 64% of the variance of academic buoyancy and 27% of the variance of positive youth development are explained by the variables exiting in the research model.

Introduction

Psychology has been developed along with man’s development and parallel to the formation of new challenges in his modern life. Although psychological approaches and theories are formed as the result of the complex and mutual relationship of the target of psychology with the environment, nowadays, psychological theories are influenced by a new kind of the science of identifying man’s inherent capacities and characteristics, which have a worldwide aspect called “positive psychology”. The message of positive psychology movement is to notify that our field is not focused on only weaknesses and disorders, but the objective of psychology is creating and developing good and useful characteristics namely studying, identifying and developing capacities and virtues in man and human societies (Seligman, Steen, Park & Peterson, 2005). In this regard, AB (Academic Buoyancy) is one of the suggested constructs in the field of positive psychology.

AB is students’ ability in successfully confronting with academic setbacks and challenges that are usual in their academic path reflecting daily academic resilience in positive psychology (Martin & Marsh, 2008a). They define AB as being successful confronting with academic setbacks and challenges that are usual in their path of academic life such as weak grades, anxiety, exam pressure and difficult homework. In addition, AB refers to a positive, constructive and adaptable response to types of challenges and barriers experienced in the current and constant academic arena (Putwain, Connors, symes & Douglas-Osborn, 2012). AB is the ability to confront with the challenges and barriers of daily academic life. Reviewing the research literature to AB has shown that students’ AB is related to important motivational outcomes such as greater perseverance (Martin, Colmar, Davey & Marsh, 2010), emotional outcomes such as lower anxiety (Martin, Ginns, Papworth & Ghasemi-nejad, 2013; Putwain et al., 2012; Putwain & Daly, 2013), academic achievement (Martin, 2014; Colli, Martin, Milberg, Hall & Ginns 2015) welfare and academic performance (Miller, Connolly & Maguire, 2013). Consequential factors regarding AB can be divided into contextual and individual ones, therefore, in the present research SCP (School Climate Perception) is the contextual factor and PYD (Positive Youth Development) is considered as the individual factor effective in AB. PYD is conceptualized in different forms (Lerner et al., 2011). One of these models is suggested by Lerner (2004) in the form of “five Cs” based on the theoretical and research literature of PYD (Roth & Brooks-Gunn, 2003; Lerner, 2004). The five Cs include competence, confidence, connection, caring and character.
Confidence indicates an inner sense of self-worthiness and self-efficiency. Competence shows individual’s positive view to his actions in the different academic, cognitive, social and physical areas. Character indicates cultural and social regulations and having some criteria for right and wrong behavior and feeling (morality). Connection refers to have positive relationships with family members, school peers, and society members. The relationships that have reciprocal and result in positive changes for the parties. Caring or compassion shows sympathy for others and how much adolescents are affected by others’ tension.

These five characteristics (competence, confidence, connection, character and caring) are related to the positive outcomes of the interference programs of adolescent development reported by Roth and Brooks-Gunn (2003). Furthermore, these indices are words, which were presented by experts and adolescents who participated in the PYD program and their parents described the characteristics of a thrived adolescent.

The results of various researches (Edwards, Mumford & Serra-Roldan, 2007; Evans et al., 2012; Smith & Barker, 2009; Lerner, Von eye, Lerner & Levin-Bizan 2009) indicate a positive correlation between PYD and academic resilience. In this regard, Foltz (2012) in one case study concerning the effectiveness of the program of five Cs-based PYD, studies the resilience increase of adolescents who lived in dangerous districts. The research results indicated the role of PYD on individual resilience and goal-setting ability and hopefulness. Reviewing the theoretical and research literature, Huberty (2012) studied the role of different preventive models in creating resilience. According to him, five Cs-based PYD programs with emphasizing children’s weaknesses and strengths compared to other previous preventive models have the leading in creating resilience in adolescents.

On the other hand, SCP is considered as an effective contextual factor on students’ AB. There is no consensus over the definition of SCP, but it generally refers to students’ perception of psychophysical characteristics of school climate (Sink & Spencer, 2005). Recently, a formal and consistent definition of SC has been presented by NSCC (National School Climate Center) in 2007 that includes four backgrounds of school function: physical security, individuals’ relationships at school such as teachers, employees and parents, educational methods and school physical environment (Sely, 2013). Therefore, according to NSCC (2007), SC refers to the life quality and character at school. SC is based on the experience models of life at school in students, parents and school personnel and reflects norms, objectives, values, interpersonal relationships teaching and learning activities as well as organizational structures. A resilient and positive SC nurtures students’ development and their learning, which is indispensable for effective participation and life satisfaction in a democratic society. Thus, SC reflects the physical, psychological and social aspects of school and in fact, shows a feeling that learners acquire from their daily experience at school (Adomnick, 2012).

Studying SCP is based on this assumption that students’ SCP is related to their personal experiences and this issue affects their attitude, behavior and feeling toward their environment, the students whom the opportunity of trust, sympathy and autonomy is not given, are exposed to the danger of their inadaptability of developmental and background needs and are confronted with problems in terms of emotional, social and academic development (Roeser, Midgley & Urden, 2000; Eccles, 1993; Connel & Wellborn, 1991). According to Roeser et al. (2000), school as a developmental background for adolescents determines their emotional, social and academic development. Therefore, researchers have emphasized three components of teacher-student support, student-student support and class-autonomy support as the effective factors in adolescents’ development (Jia, Way, Ling & Yashikawa, 2009). Teacher are the most important ones who can support adolescents at school emotionally and academically by creating a secure social environment in the class, being sensitive to students’ problems in life and reflecting real feedback to them (Thapa, Cohen, Higgins-D’Alessandro & Guffey, 2012). Children and adolescents’ positive SC is related to the prevention of students’ risky behaviors and their academic achievement (Thapa et al., 2012; Cohen, 2013).

Researches have shown that providing a positive and supportive climate for students to transfer students in the academic levels easily is of particular importance (Freiberg, 1998). Security, confidence, respect, impartiality, high expectations and a pleasant climate are among the aspects of a positive SC (Adomnick, 2012). According to Deci and Ryan (1985), adolescents attempt to find meaning in their experiences at school, especially the need to perceive merit and relationship are among important aspects of students’ perception of school experience. Roeser et al (1996) also asserted that academic achievement and the acceptance of school norms are widely affected by the interaction and relationship between teachers, students, principal and other school personnel. They also found that a supportive and caring climate focused on individual effort is related to students’ adaptable-cognitive and adaptable-behavioral models. Thus, it can be mentioned that SCP is related to the key results such as academic achievement (Reid Gonzalez, Nordness, Trout, & Epstein, 2004) and school leave (Reinke & Herman, 2002). The results of the research conducted by Burdick and Tirri (2014) concerning teacher support in goal-setting and PYD indicate students’ perception of teacher support can predict their purposefulness and positive development. Moreover, Way et al (2007) in a longitudinal study, analyzed the relation between students’ SCP and behavioral-psychological adaptability from the sixth grade to the eight one. The research results indicated that all dimensions of SCP are reduced along the three years and the reduction in any dimension was along with reduction in students’ behavioral and psychological adaptability. In addition, Hejazi, Salehnafigh and Gholamali Lavasani (2015) in one research identified the relation between the contextual variable (perception of class environment) and individual variable (optimism) with students’ positive development. The results of stepwise regression showed that each of the contextual and individual variables is significantly related to students’ positive development and 26% of the variance of PYD are explainable by the components of perception of class environment and optimism. Based on the
results, contextual factors such as interest and choice are more related to PYD than other individual factors. Respecting to the mentioned issues, the present research with a systematic and social approach based on Bronfenbrenner’s bio-ecological systems theory (1979), Relational Developmental system theory (Lerner, 2011, Overton, 2013) and Zelazo’s theory (2013) aims to determine the indices and processes of AB in a variable-focused framework with emphasizing the role of PYD in a causal model. In this model, the relation between SCP and PYD as well as AB will be investigated. Figure 1 shows the research conceptual model.

According to the figure of conceptual model, the research hypotheses are as follows:
SCP has a direct effect on adolescents’ PYD.
Students’ PYD has a direct effect on their AB.
SCP has an indirect effect on students’ AB through PYD.

Methodology
The methodology of the present research and its research plan is descriptive (non-empirical) and correlative of structural equations, respectively, because in the research, the relation between variables is analyzed in the form of a causal model.

Statistical Population and Sample
The statistical population of the research includes all female high school students of Kerman studying in the academic year 2014-15. The size of the statistical population was estimated 3810 persons according to the report of SENAD system of the Educational Plan Department of Kerman that among them 400 persons were selected as the research sample. To select the participants in the research, multiphase clustering sampling method was used. To control the difference made by urban or non-urban effect in the research variable, the sampling was limited to the urban regular schools.

Data Collection Tool
SCP
To measure SCP, the questionnaire developed by Jia et al. (2009) was used. This questionnaire has 25 items measuring three dimensions of teacher support (7 items), student support (13 items) autonomy support (5 items). The questions are scored based on Likert four points from 1 (almost always) to 5 (never). Cronbach’s alpha coefficient in the present research is 0.89, 0.92, 0.70 and 0.83 for teacher support, student support, and autonomy support and the whole scale, respectively.

PYD
PYD inventory (Arnold, Nott & Meinhold, 2012) has two short and long forms that is prepared based on 5C model of PYD (Lerner et al., 2005). In the present research, the long from with 48 items and 5 subscales of competence (14 items), confidence (9 items), connection (8 items), character (9 items) and caring (8 items) was used. Questions are adjusted in the continuum form of 4 points from (1) completely disagree to (4) strongly agree. Alpha coefficients in the present research were obtained 0.78, 0.85, 0.87, 0.83, 0.85 and 0.88 for competence, confidence, character, caring, connection and the whole scale, respectively.

AB
To measure students’ AB, Dehghanizadeh and Hussein Chari’s questionnaire (2012) was employed. The makers developed this scale with modelling Martin and Marsh’s scale of AB (2008a) that has 4 items. This scale has one factor
and 10 items that is adjusted in Likert seven-point scale from (1) strongly agree to (7) completely disagree. In the present research, the reliability coefficient was calculated using Cronbach’s alpha that 0.83 was obtained.

To validate the research tools, confirmatory factorial analysis was used. In Table 1, the results of confirmatory factorial analysis are reported to analyze the validity of the variables. As observed, all the indices of the research variables have a desirable validity.

Table 1. Fitness indices of confirmatory factorial analysis models

<table>
<thead>
<tr>
<th>Indices</th>
<th>χ²/df</th>
<th>RMSEA</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
<th>NFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP</td>
<td>2.38</td>
<td>0.059</td>
<td>0.94</td>
<td>0.91</td>
<td>0.97</td>
<td>0.95</td>
</tr>
<tr>
<td>PYD</td>
<td>2.69</td>
<td>0.065</td>
<td>0.93</td>
<td>0.90</td>
<td>0.96</td>
<td>0.95</td>
</tr>
<tr>
<td>AB</td>
<td>3</td>
<td>0.071</td>
<td>0.96</td>
<td>0.93</td>
<td>0.94</td>
<td>0.91</td>
</tr>
</tbody>
</table>

**Data Analysis Method**

After the calculation of the descriptive indices of the research variables, to analyze the causal relations between the variables, structural equations method was used. To analyze the data, SPSS and LISREL Software were used.

**Results**

Concerning the correlative matrix as the basis of the analysis of casual models, correlogram matrix, mean and standard deviation of the studying variables are presented in Table 2.

Table 2. Correlate matrix of the research constructs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>SCP</th>
<th>PYD</th>
<th>AB</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP</td>
<td>68.79</td>
<td>12.16</td>
<td>1</td>
<td>0.41**</td>
<td></td>
</tr>
<tr>
<td>PYD</td>
<td>118.97</td>
<td>28.29</td>
<td>0.41**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>24.67</td>
<td>5.30</td>
<td>0.36**</td>
<td>0.65**</td>
<td>1</td>
</tr>
</tbody>
</table>

**P<0.01

The results of Table 2 show that the correlative coefficient of SCP is positively and significantly related to PYD (r=0.41) and AB (r=0.36) at the p<0.01 level. The correlative coefficient of PYD is positively and significantly related to AB (r=0.65) at the p<0.01 level.

In the figure 2 of the tested model, the relation between SCP, PYD and AB is reported. Results indicate that SCP positively and significantly affects PYD and AB. PYD positively and significantly affects AB.

**Figure 2. Tested model of the research**
Since in the above model, the mediatory role of PYD is analyzed in the relation between SCP and AB, in Table 3, the coefficients of direct, indirect and total effects as well as the explained variance of the research variables are reported.

<table>
<thead>
<tr>
<th>Paths Toward AB from:</th>
<th>Direct effect</th>
<th>Indirect effect</th>
<th>Total effect</th>
<th>Explained variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>PYD</td>
<td>0.79**</td>
<td>-</td>
<td>0.79**</td>
<td>64%</td>
</tr>
<tr>
<td>SCP</td>
<td>0.15**</td>
<td>0.41**</td>
<td>0.56**</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Paths Toward PYD from:</th>
<th>Direct effect</th>
<th>Indirect effect</th>
<th>Total effect</th>
<th>Explained variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP</td>
<td>0.52**</td>
<td>-</td>
<td>0.52**</td>
<td>27%</td>
</tr>
</tbody>
</table>

As shown in Table 3, the effect of PYD ($\beta=0.79$), and SCP ($\beta=0.25$) on AB is positive and significant. The effect of SCP on PYD ($\beta=0.52$) is positive and significant. The indirect coefficient of SCP ($\beta=0.41$) on AB is positive and significant through PYD. Thus, PYD plays a role in the relation between SCP and AB. In addition, results indicated that 64% of the variance of AB and 27% of the variance of PYD are explained by the variables existing in the research model. The fitness features of the structural equations model are presented in Table 4.

<table>
<thead>
<tr>
<th>$\chi^2$/df</th>
<th>RMSEA</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
<th>NFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.84</td>
<td>0.068</td>
<td>0.93</td>
<td>0.90</td>
<td>0.97</td>
<td>0.96</td>
</tr>
</tbody>
</table>

According to Table 4, the relation of chi-square to freedom degree ($\chi^2$/df=2.84), goodness of fitness index (GFI=0.93), adjusted goodness of fitness index (AGFI=0.90) and the root mean square error of approximation (RMSEA=0.068) are at a suitable level. Therefore, the fitness of the model predicts AB at a suitable level.

### Discussion and Conclusion

The objective of the present research was to investigate the relation between SCP and PYD with AB using structural equations. The results of structural equations indicated that the proposed model has good fitness with the research data and can explain 64% of the variance of AB and 27% of the variance of PYD.

The research results are discussed according to the research hypotheses as follows:

According to the first hypothesis of the research, SCP have a direct effect on adolescents’ PYD. Results showed that the direct effect of SCP on adolescents’ PYD is positive and significant. This result is consistent with the results of Hejazi, Salehnajafi and Gholamali Lavasani (2015), Lerner et al. (2012), Li and Lerner (2012a), and Bundick and Tirri (2014). To explain the result, it can be mentioned that according to PYD, all adolescents have a number of capacities in their developmental trajectories, but when adolescents’ PYD is predictable that their behavior is positive and significant through PYD. Thus, PYD plays a role in the relation between SCP and AB. In addition, results indicated that 64% of the variance of AB and 27% of the variance of PYD are explained by the variables existing in the research model. The fitness features of the structural equations model are presented in Table 4.

According to the second hypothesis of the research, SCP indirectly affect students’ AB through adolescents’ positive development. Results indicated that the indirect effect of SCP on students’ AB is positive and significant through adolescents’ positive development. SCP is based on the assumption that students’ SCP is bonded to their personal experiences and this issue affects their attitude, behavior and feeling to their surrounding environment, the students whom the opportunity of trust, support and autonomy is not given, are exposed to the risk of their inadaptability of developmental and background needs and are confronted with problems in terms of emotional, social and academic development (Roeser et al., 2000; Eccles, 1993; Connel & Wellborn, 1991).

According to Roeser et al. (2000), school as a developmental background for adolescents determines their emotional, social and academic development. Roeser, Midgley & Urdan, (1996) also asserted that academic achievement and the acceptance of school norms are widely affected by the interaction and relationship between teachers, students, principal and other school personnel. They also found that a supportive and caring climate focused on individual effort is related to students’ adaptable-cognitive and adaptable-behavioral models. Thus, it can be mentioned that SCP is related to the key outcomes such as positive youth development and academic buoyancy.
The research results have applied implications. Planning and implementing each program are relevant to the promotion of adolescents’ PYD and AB that requires its identification of effective elements and components. The research results can be taken into account by planners and can make reforms in the educational institution. Teaching teachers, principals and other school personnel concerning creating SCP at school through facilitating teachers’ emotional and academic relationships with students as well as granting autonomy opportunities to students can promote PYD and AB in students.

In the present research, the role of gender in the relation between the variables is not analyzed and according to the fact that individuals’ gender is among the characteristics playing role in their beliefs of their abilities, this variable can be effective in resilience and buoyancy. Thus, it is recommended that gender will be analyzed in future researches. The research data also have been collected using self-reporting tools, therefore, it is recommend that qualitative and mixed research methodologies will be employed in future researches.

References
http://oregon.4h.oregonstate.edu/sites/default/files/2012_pydi_scoring_guide.pdf
Li Y, Lerner RM. 2012a. Academic buoyancy and academic outcomes: Towards a further understanding of students with attention-deficit/hyperactivity disorder (ADHD), students without ADHD, and academic buoyancy itself. British Journal of Educational Psychology, 80, 1, 86-107.


Sely KJ. 2013. The Relationship between Middle School Climate and Student Mathematics Achievement. (Doctoral Dissertation). Retrieved from ProQuest Dissertations and Theses. (Accession Order DAI-A 73/10(E).


Theokas C, Lerner RM. 2006. Promoting positive development in adolescence: The role of ecological assets in families, schools and neighborhoods. Applied developmental science, 10(2), 61-74.

Way N, Reddy R, Rhodes. 2007. Students’ Perceptions of School Climate during the Middle School Years: Associations with Trajectories of Psychological and Behavioral Adjustment. Am J Community Psychol. 40, 194-213.
