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PERCEIVED GENDER DIFFERENCES IN THE SOCIAL SUPPORT AND COGNITIVE ENGAGEMENT OF DAY SECONDARY SCHOOL STUDENTS IN KAKAMEGA COUNTY, KENYA

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Abstract

The latent factor modelling that addresses the significance of social support from parents, teachers and peers with respect to adolescent cognitive engagement has effectively been utilized leading to the use of structural equation modelling as the main analysis, the hypothesised model was tested. Results revealed that the structural models differed for female and male models. Also, the findings support self-efficacy beliefs and behavioural engagement as two mediators in the relation between social support and cognitive engagement for girls, but only self-efficacy was a mediator in this association for boys. Implications of the study are discussed in relation to Bandura's social cognitive theory.

Keywords: Social Support, Teacher Support, Parental Support, Self-Efficacy, School Engagement.

Introduction

Teachers, school personnel and school psychologists concur that adolescent disengagement at school has become a social problem that requires attention^{1;2}. This phenomenon may be driven partly by a significant drop in performance, especially during the transition period from primary to secondary school. For instance, studies have noted a decline in the participation levels of young adolescents in school activities relative to their primary school years^{3;4}. During this developmental period, adolescents tend to face stressors such as changes in peer relations, teacher expectations, and changes in relationships with parents, among others. In relation to gender, boys are said to suffer more from disengagement in school in comparison to girls. A number of studies have noted that besides cognitive factors, gender differences may be rooted in other factors such as personality and psychological factors^{5;6}.

Contextual factors within the environment of the adolescent may also play a significant role in enhancing the individual's engagement in school. A significant number of studies have examined these factors, which include social support from parents, teachers and peers. A study by, for example has highlighted the significance of parents' roles in making sure that children learn at home towards students' achievement in school⁷. The following question remains: what are the mechanisms through which support from 'significant others' affect the adolescent's engagement, particularly cognitive engagement? While a substantial body of research has claimed that perceived support from parents or teachers does influence adolescent academic performance^{8;9;10;11;12}, only a few studies have investigated the relations between social support and adolescents' engagement and how the effect operates are implicitly and not explicitly tested.

Studies on gender differences and social support as well as social and behavioural outcomes have raised a number of questions, particularly because the research on gender differences and social supports had provided inconsistent findings¹³. For example, a study¹⁴ investigating the relations between social support and indices of behavioural adjustment and maladjustment demonstrated differences in findings between the analysis of the total sample in comparison to the analyses by gender.

When analysing samples separately by gender, it was subsequently found that social support was associated with externalising behaviour negatively in the total sample but positively when related to adjustment behaviours for boys. Thus, drawing conclusions about social support and other outcome behaviours using the total sample could be misleading when bearing in mind the implications from the¹⁵ findings. Notwithstanding, other studies on social support in health-related fields have also been inconsistent. A study¹⁶ found a significant relationship between social support and depression for girls; however, a study by¹⁷ found otherwise, indicating that the relationship was significant for both boys and girls, albeit stronger for girls than for boys. However, found no gender differences in the effects of support on emotional outcomes¹⁸. To address these gaps in the literature, investigating the possible gender differences in the perceptions of support on students' cognitive engagement within the school system is inevitable. The following section will provide a brief background on the constructs used in this study.

Objectives of the study

The research aimed to investigate the pathways through which social support may influence adolescent cognitive engagement. As such, the study also sought to understand

the influence of support from significant others on student cognitive engagement. Prior research has identified a link between social support and school engagement³⁸, though evidence from research also notes that the presence of social support may precipitate achievement outcomes through self- and task- related motivational beliefs³⁹, in this case self-efficacy belief. In particular, this study examined the potential mediating effects of self-efficacy beliefs and behavioural engagement on adolescents' cognitive engagement. Most of the associations are derived from a review of literature in the area. To this end, three questions that underpinned this study were:

- (1) Is the perceived support from parents, teachers and peers directly related to cognitive engagement?
- (2) Does self-efficacy mediate the relations between boys' and girls' perceived parental, teacher and peer support and cognitive engagement?
- (3) Does behavioural engagement mediate the relations between boys' and girls' perceived parental, teacher, and peer support and cognitive engagement?

Literature Review

Contextual factors

Bandura's (1997)¹⁹ concept of reciprocal determinism, a central premise of social cognitive theory, stems from the view that the self-thoughts individuals hold regulate their behaviours. According to Bandura, (a) *personal factors* in the form of cognition, affect, and biological events, (b) *behaviour*, and (c) *environmental influences* create interactions that result in a triadic reciprocity. Simply put, behaviour, cognition, and environment influence and are influenced by each other. Environment refers to those

factors that influence behaviour, such as teacher, peer and parental support available in the environment, and in turn, behaviour influences the environment. For example, a teacher's behaviour, such as creating positive learning environment, can influence students' prosocial behaviours, such as student engagement^{20:21}, which in turn, can promote a positive classroom climate. In other words, the environment provides models for behaviour, which is termed observational learning (Bandura, 1997). In a similar fashion, the person factor influences behaviour, while behaviour factors affect the person. Evidence provided an example where a low efficacy person (person) would prefer easier tasks and does not persist under difficult task situations. However, the specific behaviours chosen by the student affect his efficacy beliefs. Finally, the environmental factors influence students' beliefs (person), and personal beliefs affect the environment. Teacher feedback influences students' academic efficacy, while students' academic efficacy influences teacher expectations of the students²².

In this study, the term *social support* represents teacher, peer, and parental support. Definition of social support has been identified as "...a set of perceived general or specific supportive behaviours that contribute to a person's physical and mental well-being and /or as a buffer for someone under stress" (p.471)²³. In a later study, the same researchers conceptualised social support as the availability of support, namely, emotional, instrumental, informational, and approval from parents, teachers, classmates, close friends, and the school²⁴. Social support has been conceptualised using an adaptation of Demaray and Malecki's definition to refer to teacher, peer, and parental academic and emotional support available to the adolescents.

Cognitive engagement

The literature on cognitive engagement often covers aspects such as student motivational goals and self-regulated learning²⁵. Further, broadening of the concept and suggested that both cognitive abilities and motivation contribute to the adolescents' effective functioning through two pathways, that is performance and commitment²⁶. The performance pathway (the process by which cognitive resources are activated, retrieved, assembled and executed) is similar to cognitive engagement. Thus, cognitive engagement in this study refers to students' focus on and thinking about academic tasks, processing information, and self-directed learning^{27; 28}. As such, have been made to bridge the link between academic success and self-regulated learning, the highest form of cognitive engagement²⁹.

Academic self-efficacy

Self-efficacy can be defined as the individual's contextually specific judgments of his/her ability to successfully perform a task^{30;31}. Individuals hold self-efficacy beliefs with respect to different domains, such as academic subjects, social relationships, and extracurricular activities³². When students perceive support and respect in their classroom, they tend to also feel confident about their academic skills. Accordingly, the teacher's emotional support is said to be related to the student's academic self-concept³³ and expectancies for success³⁴, constructs are that analogous to academic efficacy.

Behavioural engagement

Studies conducted on behavioural engagement often involve dimensions such as positive conduct, involvement in learning and academic tasks, and participation in extra-curricular activities³⁵. It has been conceptualised that behavioural engagement as reflecting the student's basic compliance

or non-compliance with the requirements of the school and the classroom^{36;37} studies. These studies, as a result, utilised a similar definition and the researchers recommended that their validated scale be used within a similar setting.

Methodology

Participants

The participants were drawn from eleven day secondary schools in Kakamega County in Kenya to participate in this cross-sectional study that used a sample size of 450 students of which 217 were male and 233 were female. The subjects completed a self-report questionnaire. There were four subscales that aimed to uncover student perceptions regarding the availability of support from parents, teachers and peers and the effects of those perceptions on their cognitive engagement. The questionnaire also included a background profile. The students were reminded that it was not a test and that there were no right or wrong answers. They were also informed of the voluntary nature of the survey as well as its confidentiality. Students were carefully guided through examples on how to answer Likert-type survey questions.

Measures

The format for all items on the questionnaire was a 6-point scale that ranged from 1 (strongly disagree) to 6 (strongly agree), except for the measures of student engagement, which ranged from 1 (never) to 5 (frequently). All items were specific to the English language class. Regarding the perceived support from significant others, students responded to three subscales adapted from a number of established measures, namely, the Classroom Life Measure⁴⁰, the Teachers, Parents and Friends Academic Support Scale⁴¹, and the School Climate Survey⁴². In general, students were asked to state their perception regarding the availability of support from three different

'significant others' in their lives. A sample of the item within the support instrument is, "My parents care about how much I learn in my English class". The cognitive engagement and the behavioural engagement subscales were adapted⁴³ and these subscales were further validated. Examples of behavioural engagement and cognitive engagement include, "I often go to class without my book" and "If I find that the reading material is difficult, I often modify how I read it". Meanwhile the self-efficacy subscale was also adapted from the Patterns of Adaptive Learning Survey⁴⁴. The final social support scale resulted in 18 items for the teacher support scale, while the parental support scale consisted of 19 items and the peer support scale comprised 14 items, thus resulting in a total of 51 items for the social support scale. With respect to the behavioural and cognitive engagement subscales, a total of 7 and 11 items, respectively, were used. However, in analysing the model, parcelled items (three parcels for every subscale) were used over individual items, as suggested⁴⁵, as parcelling enhances the stability of parameter estimation and decreases problems in convergence. It had been noted and advised, that a parcel can be defined as an aggregate-level indicator comprising the sum or average of two or more items⁴⁶. This technique has been widely used, particularly in analysing latent variables. In the case of the present study, only the self-efficacy subscale did not utilise parcelling items but, instead, used five individual items.

Data analysis

The psychometric properties of the instruments used were assessed through (1) reliability analysis, (2) Exploratory Factor Analysis (EFA) and (3) Confirmatory Factor Analysis (CFA). Through these analyses, it was found that the instruments used in this study were valid and were promising tools for use within Kakamega County settings. The CFA results showed that all the hypothesised

models fit the data well. To test the hypotheses, structural equation modelling is the method of choice for assessing hypothesised structural relations, particularly those that involve mediation. First, the analysis involved confirming the measurement properties of the instruments. Second, to test the main hypothesis that related social support variables and cognitive engagement, a test of the model that posited direct relations between the various social support variables and cognitive engagement while controlling for individual differences was considered.

Third, to test the hypothesis concerning the mediating roles of academic efficacy and behavioural engagement, a model was tested that posited relations between the social support variables and behavioural engagement and academic efficacy (the mediating variables) and between behavioural engagement and academic efficacy and cognitive engagement. The structural model was tested against the data for its fitness using Structural Equation Modelling, AMOS version 16. The values of Tucker-Lewis index (TLI) and Comparative Fit Index (CFI) were well above the cut-off value of .90 (.90 and .91, respectively), while the values of Standardized Root Mean Square Residual (SRMR) and Root-Mean-Square Error of Approximation (RMSEA) were less than the cut-off value of .08 (both with values of .05). Meeting the cut-off values was suggested as an indication of how well the model fitted the data⁴⁷.

Table 1 shows the inter correlations among the constructs under study based on disattenuated correlations as generated by AMOS version 21.0. All of the study variables correlated significantly with cognitive engagement.

Table 1: Disattenuated Correlations:

Social Support Factors, Self-Efficacy, Behavioural and Cognitive Engagement

	(1)	(2)	(3)	(4)	(5)	(6)
Teacher support	-	.35***	.33***	.19*	.09	.14*
Parental support	.35***	-	.25**	.32***	.41***	.11
Peer support	.33***	.25**	-	.14	-.12	.04
Self-efficacy	.09	.47***	.01	-	.25**	.37***
Behavioural engagement	.20*	.22**	.03	.26**	-	.19*
Cognitive engagement	.07	.18*	.13	.38***	.05	-

Note: *p<.05; **p<.01; ***p<.001

Correlation coefficients below the diagonal are for male, and correlations coefficients above the diagonal are for female. Separate analyses were also conducted to determine if there were any differences between the genders. This was performed via a multigroup analysis using structural equation modelling.

Results Of The Study

The findings based on simultaneous multigroup analyses indicated that male and female models differed significantly judging by the estimated parameters. With respect to the goodness of fit indices based on the simultaneous multigroup analyses ($\chi^2 = 1352.66$; $df=716$; $p=.00$; $CFI=.91$; $TLI=.90$; $RMSEA=.04$), the models seemed to adequately fit the data. It should be noted here that in discussing the answers to the first three research questions, research question 4 will be addressed simultaneously to indicate any gender differences.

Direct effects

Answer to RQ1: Is the perceived support from parents, teachers and peers directly related to cognitive engagement?

The only direct relationship for the male model was between Parental Support (PS) and Cognitive Engagement (COG) ($\beta .18$, $t=2.07$, $p<.05$). However, with respect to the female model, the direct relationship was between Teacher Support (TS) and COG ($\beta=.14$, $t=2.24$, $p<.05$). Both male and female models did not show any direct relation between peer support and cognitive engagement.

Mediation effect of efficacy belief and behavioural engagement

Answer to RQ2: Does self-efficacy mediate the relations between males' and females' parental, teacher and peer support and cognitive engagement?

With respect to the male model, only PS was mediated by self-efficacy ($\beta=.47$, $t=5.59$, $p<.001$), which, in turn, was related to COG

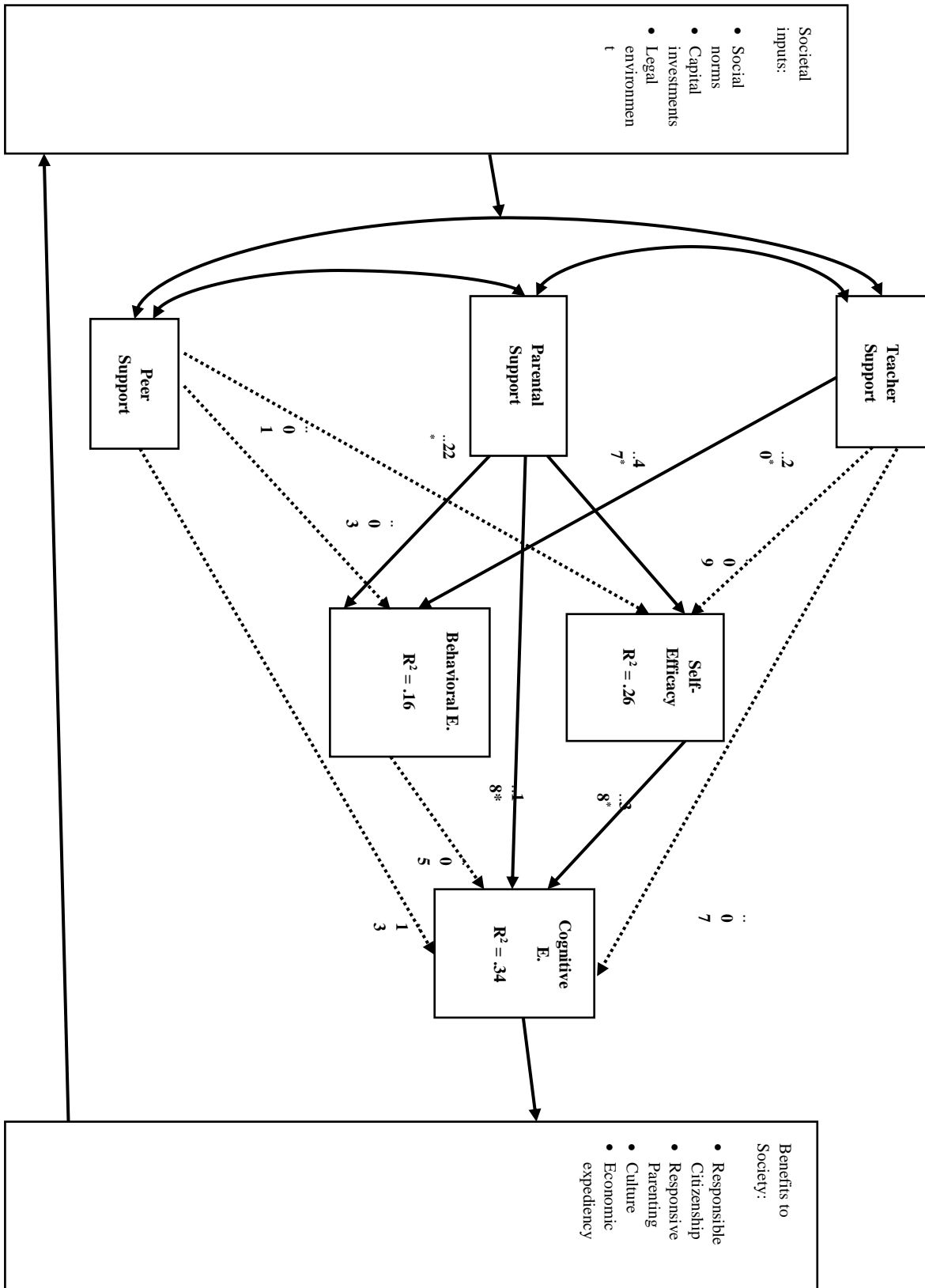
($\beta=.38$, $t=4.25$, $p<.001$). The other predictor variables did not have any influence in the association. However, with respect to the female model, both TS ($\beta=.19$, $t=2.51$, $p<.05$) and PS ($\beta=.32$, $t=3.86$, $p<.01$) were mediated by self-efficacy beliefs, which, in turn, were related to COG ($\beta=.37$, $t=4.36$, $p<.001$).

Answer to RQ3: Does behavioural engagement mediate the relations between males' and females' perceived parental, teacher, and peer support and cognitive engagement?

Both PS ($\beta=.22$, $t=2.57$, $p<.01$) and TS ($\beta=.20$, $t=2.27$, $p<.05$) were significantly

related to behavioural engagement (BEH) in the male model. However, BEH was not related to cognitive engagement ($\beta=.05$, $t=0.63$, $p>.05$). Thus, BEH was not a plausible mediator in the relationship in the male model. A different finding was evidenced in the female model. Only parental support was related to BEH ($\beta=.41$, $t=3.74$, $p<.001$), which, in turn, was related to COG ($\beta=.19$, $t=2.09$, $p<.05$). Thus, behavioural engagement was a plausible mediator in the female model for parental support and cognitive engagement. The graphical model for the males and females are displayed in Fig.1 and Fig. 2.

Figure 1. The Male Model



Standardised estimates:

cmindf=1.889; p= .00; RMSEA= .045; SRMR= .045; TLI= .900; CFI= .912

Note: *p<.05

(Cmindf = Confirmatory Minimum Discrepancy Function by Degrees of Freedom)

(dotted lines show insignificant paths)

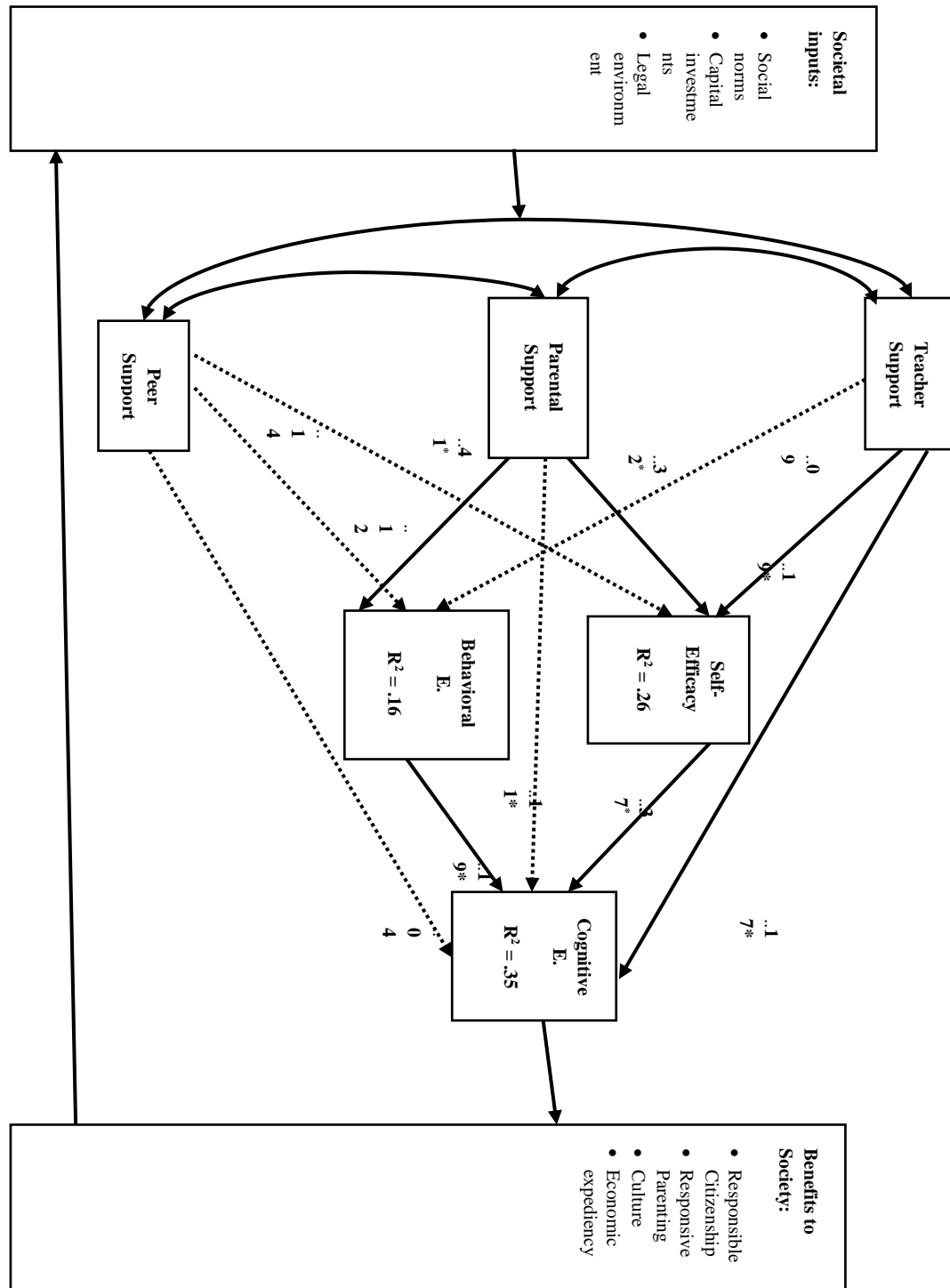


Figure 2. The Female Model

cmindf= 1.889; $p = .00$; RMSEA= .045= SRMR= .045; TLI= .900; CFI= .912

Note: * $p < .05$

(dotted lines show insignificant paths)

Discussion

Overall, only parental support emerged as a significant predictor of cognitive engagement in the male model, directly and indirectly, while both teacher support and parental support are equally important predictors in the female model. This finding is consistent with findings of an earlier study⁴⁸, which reflects the authority-oriented values of society where parents and teachers are considered authoritative figures and, accordingly, exhibit influence over student behaviour.

Bandura (1991) earlier established that one of the four variables that can affect one's efficacy belief is social influence. Thus, social influence by means of support from parents holds true when self-efficacy appears to be an important mediator in the relations between parental support and cognitive engagement in the male model. For male adolescents, support from parents facilitated their self-efficacy beliefs, which, in turn, enhanced their cognitive engagement. Parents can also directly influence males' cognitive engagement. In short, support from parents is important for boys whether through direct or indirect pathways. A different picture, however, is evidenced in the female model. Both teacher support and parental support are mediated by self-efficacy beliefs, which, in turn, are related to cognitive engagement. Furthermore, teacher support is significantly and directly related to cognitive engagement. Nevertheless, peer support did not play a significant role in the predictions for either model, direct or indirectly.

Behavioural engagement is a significant mediator in the relations between parental support and cognitive engagement in the

female model. Surprisingly, in the male model, both teacher support and parental support were related to behavioural engagement. However, behavioural engagement was not related to cognitive engagement. Hence, behavioural engagement was not a significant mediator in the male model as boys' behavioural engagement did not translate into cognitive engagement. Thus, it can be concluded that the role of behavioural engagement as a mediator was only important in the home context via parental support.

Conclusion

Findings from this study provide two important contributions to the literature on the link between social support and cognitive engagement. First, separate analyses conducted on gender had revealed the different pathways through which supports affect adolescents. Males and females are indeed different in the ways that they translate the support available to them with respect to their engagement in school. Seemingly, males' pathways to cognitive engagement appeared limited, while females had a number of pathways through which the support is translated into engagement. The findings are consistent with a number of studies that demonstrate female adolescents reported higher perceptions of support in their lives compared with male adolescents^{49; 50; 51}. Second, the study supports mediation assumptions. More specifically, the roles of self-efficacy beliefs and behavioural engagement as mediators had been unveiled. Accordingly, only parents appear to enhance the self-efficacy beliefs of males, while both teachers and parents are equally important in promoting efficacy beliefs among females.

With respect to behavioural engagement, both teachers and parents can influence adolescent behavioural engagement in school. This may be because both teachers and parents are perceived as authoritative figures by these adolescents. In fact, continuous support from parents and teachers should be encouraged as these two groups form the 'microsystems' within the lives of adolescents.

It is emerging that parents need to be informed regarding their strong influence on their children, particularly boys, as their supportive roles are often taken for granted. As a general guideline, parents need to be reminded to maintain open lines of communication with their children. The fact that parental supportive roles can influence adolescents' efficacy beliefs as well as behavioural and cognitive engagement, may suggest their strong influence on adolescents' school outcomes. Schools, however, need to capitalise on establishing strong connections between teachers and parents so as to foster a positive school climate.

This research is derived from theoretical considerations and empirical findings, its correlational nature prevents any firm conclusions, thus precluding causality. The use of self-report measures for both predictor and outcome variables could also lead to inflated relationships as a result of methodological factors. Hence, other potential relevant exogenous variables for future studies, such as paternal and maternal support, especially regarding the actual support that they provide, as opposed to reports from their children, need to be considered.

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