



Schools' Emphasis on Academic Success in TIMSS 2015 across Finland, Singapore, and Turkey*

Eren Ceylan¹, Mustafa Sever²

^{1,2} Ankara University, Faculty of Educational Sciences, Ankara, Turkey

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ABSTRACT

School climate which is strongly related with the students' outcomes includes some of the components, among which disciplinary climate in schools was expressed as the dominant one. Safety and order in schools which is strongly related with the physical and emotional security stated as one of the indicator of disciplinary climate in schools. In disciplined schools, more opportunities are found to focus on learning and teaching. So, in these schools, there is a tendency of placing the academic success to the priority. In addition, allocating time to emphasizing on academic success is strongly related with having teaching time that is not interrupted by the basic needs of the students. Moreover, academic pressure which reflect the schools' emphasis on academic success have been discussed in recent studies with its advantages and disadvantages. In this study, the association of safety, order and disciplined issues, limitation of teaching by students' needs, academic pressure, teachers' gender and education level with the schools' emphasis on academic success was investigated by scrutinizing the 4th grade teachers' responses in TIMSS 2015 for three different countries, Finland, Singapore, and Turkey, respectively. Multiple logistic regression was run to analyze the data. The results revealed that schools' emphasis on academic success varies across three countries after controlling aforementioned variables. In addition, the estimated odds ratio for the explanatory variable of "safe, orderly and disciplined school" has the highest value among the explanatory variables for the three countries.

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Keywords:

School emphasis on academic success, safe and orderly schools, TIMSS 2015, multiple logistic regression

1. Introduction

A very well-known fact was revealed by the famous Coleman's report (1966) as the great variance in students' achievement related with the students' background characteristics. The remaining relatively little variance have attracted many researchers interest in the educational research. Undoubtedly, the variables within the control of schools that effect students' performances have been one of the focal point of many researchers (Creemers & Kyriakides, 2010, Hoy, Tarter & Woolfolk Hoy, 2006). One of the issues that positively influence on students' learning outcomes was expressed as the school ambition for the academic success.

The concept of "academic optimism" have been emphasized with its significant contribution on students' achievement in the recent research and includes parents, teachers, and students' priority and ambition for the academic success (Gustafsson & Nilsen, 2016). In addition, some of the studies cover school collective trust, efficacy, and performance emphasis to indicate schools' emphasis on academic success (Hoy, Tarter & Woolfolk Hoy, 2006). When mentioning the schools' emphasis on academic success, the importance of the

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² Corresponding author's address: Ankara University, Faculty of Educational Sciences, Ankara, Turkey

Telephone: +90-533-244-3696

e-mail: erenceylan@gmail.com

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collective efficacy was expressed (Hoy et al., 2006). Bandura defined the collective efficacy as “the performance capability of a social system as a whole” (Bandura, 1997, p.469). Based on this definition, Lezotte (2001) presented one of the characteristics of effective schools as having high expectations that lead students to obtain mastery of the school’s essential curriculum by the belief and persuasion of the school staff.

School emphasis on academic success has been expressed by being one of the components of school climate which has also robust correlation with students’ motivation (Scherer & Nilsen, 2016). Moreover, significant relationships have been found between school emphasis on academic success and students’ performances in both science and mathematics achievement tests across all countries involved in TIMSS 2011 (Mullis et al. 2012; Nilsen & Gustafsson 2014). On the other hand, since highly competitive learning environments are created by the influence of exaggerated emphasis on academic success, significant decrease in students’ motivation and self-beliefs was detected in some studies (Chen & Vazsonyi 2013). Although lots of the studies have expressed the influences of school emphasis on academic success on students’ achievement and motivation (Martin et al., 2013), few studies have been conducted to reveal the factors that affect school emphasizes on academic success.

School climate includes other building blocks except performance-oriented related aspects. One of the components that effect school climate is related to the safety, order, and discipline issues of schools. Safety and order in schools was described by including physical and emotional security which is strongly associated with an orderly disciplinary climate (Gregory et al., 2012; Wang & Degol, 2015). It is very hard to mention about emphasizing academic success and allocating time and energy to the learning while dealing with the issues about safety in schools. It can be said that more opportunities are created to focus on learning and emphasizing academic success in safe and disciplined schools (Nilsen & Gustafsson, 2014). In addition, positive association between safe schools and teachers’ collective efficacy was also expressed (Sørli & Torsheim, 2011) and setting the high academic standards was mentioned as one of the characteristic of safe schools (Bucher & Manning, 2005). Moreover, the positive relationship between school safety and achievement in a primary school was also reported in some studies (Miliam et al., 2010).

As well as allocating time for promoting and place the academic success to the priority, energy and resources can be stated as some of the requirements. Therefore, teaching time should not be limited or interrupted by the basic needs of the students such as prerequisite knowledge, enough nutrition, enough sleep. As a teacher, having uninterested students, dealing with the students who have mental, emotional and psychological problems may also lead not to allocate enough time to promote emphasizing academic success. In addition, some of the studies have expressed the concept of academic pressure reflects the priority of academic success. Although some of the studies define academic pressure which entails students’ desire to do well, do homework regularly, having an orderly environment, some studies have defined this concepts as students perceptions pressure that their teachers put on them (McGuigan & Hoy, 2006; Kythreotis et al., 2010).

Beside the uninterrupted teaching time, teachers’ rich content and pedagogical knowledge also strongly related with the quality of the instruction. Although some studies expressed the positive effects of teachers’ level of education, some of the findings show inconsistency by revealing the relative contribution of teachers’ coursework, level of education, and certification on students’ achievement across subjects and grades (Goe, 2007). Instructional quality which is also related with teachers’ depth of knowledge was stated as the potential mediator between school climate and student motivation (Scherer & Nilsen, 2016). So, the investigation of the relationship between teachers’ level of education and schools’ emphasis on academic success which is an ingredient of school climate might be worth to investigate.

A very well-known international large-scale assessment, TIMSS (The Trends in International Mathematics and Science Study) covers the dimensions that was presented so far. The sixth cycle of the TIMSS which is carried out by IAE (The International Association for the Evaluation of Educational Achievement), has lastly revealed its data in 2015, gives us an opportunity to study the factors related to schools’ emphasizes on academic success. Beside the achievement tests in science and mathematics at 4th and 8th grade levels, student, teacher, and school questionnaires were also administered to gather data from different layers of the educational issues. Some of the issues that TIMSS 2015 focuses at the classroom context and school context

can be stated as: classroom instructional resources and technology, instructional time, instructional engagement, classroom assessment, school emphasis on academic success, safe, orderly, and disciplined schools (Mullis & Martin, 2013).

In the literature, although lots of the studies were conducted to reveal the relationship between schools' emphasis on academic success and students' achievement in different subject matters (Mullis et al. 2012; Nilsen and Gustafsson 2014; Scherer & Nilsen, 2016), there is not any study to reveal the factors that affect school emphasizes on academic success by comparing different countries. In addition, as the exaggeration of and undermining of school emphasis on academic success may cause a decrease on students' motivation and self-beliefs, determining the boundaries and limits of school emphasis on academic success by balancing the presence of the factors is very crucial. Also, understanding whether contribution of these factors to the schools' emphasis on academic success varies across the countries is expected to contribute to the literature. In this study, we also examine schools' emphasis on academic success and the potential factors that is expected to be correlated with this dimension based on the views of teachers. Being the driving force of the instructional quality, teachers' perceptions about these dimensions are very crucial. Therefore, in this study, the association of schools' emphasis on academic success with the schools' safe, order, and discipline issues, students' need that limiting teaching, academic pressure that exposed to the students in school, and teacher education level was investigated at primary schools in three different countries, Finland, Turkey, and Singapore, respectively.

Research Aim and Questions

The association of teachers' views on school conditions with the schools' emphasis on academic success in three different countries, Finland, Turkey, and Singapore, was examined by scrutinizing TIMSS 2015 data at fourth grade level. The similarities and discrepancies among the countries were revealed based on the related topic. With respect to this aim, we can state research questions more specifically as follows:

1. Does the schools' emphasizes on academic success show variations across three countries, Finland, Turkey, and Singapore, after controlling the safe, order and discipline issues in schools, students' needs that limited teaching, academic pressure on students, gender of teachers, and teachers' education level?
2. Do safe, orderly, and disciplined schools, students' needs that limited teaching, academic pressure on students, gender of teachers, and teachers' education level have an effect on the schools' emphasis on academic success in Turkey, Singapore, and Finland?

2. Method

In this section, first, the nature of The TIMSS 2015 data and the sample of the study were handled. Second, the response and explanatory variables of study which are schools' emphasis on academic success, safe, order and discipline issues, students' need that limited teaching, academic pressure on students, gender of teachers, and teachers' education level are discussed. Finally, statistical analysis and results are presented.

2.1. TIMSS 2015 Instruments, Data and Sampling

TIMSS 2015 allows us to study not only the responses gathered from the students, but also present the responses of teachers and school administrators. In this study, we focused on the 4th grade teachers' views which were grabbed with the responses of teacher questionnaire. Some of the issues that TIMSS focuses with teacher questionnaire related to our study can be stated as instruction effected by shortages, school emphasis on academic success, and issues on safe, orderly, and disciplined schools, teachers education level and the number of assigned homework to the students (Mullis & Martin, 2013).

In TIMSS 2015, a stratified two-staged cluster sampling design, in which the first stage covers the sampling of the schools with the proportional size and have the eligible students and the second stage consist of the selection of intact classes from the target grade, was applied for selection of the sample in each countries. The teachers who included in TIMSS 2015 are teachers of classes determined in the second stage (LaRoche, Joncas & Foy, 2016). 57 countries from all over the world participated TIMSS 2015. More than 20.000 teachers were surveyed at fourth grade level.

In this study, we carried out our study based on three different countries, Turkey, Singapore, and Finland. Comparing three countries in international large-scale assessment studies regarding the performances of students, it was revealed that whereas Finland and Singapore are among the high performing countries, Turkey have been ranked among the countries which have the average scores under the TIMSS International average. For instance, the average science scores of countries at fourth grade level in TIMSS 2015 in Finland, Singapore, and Turkey, 554, 590, and 487, respectively. At fourth grade level, while Singapore has the highest average score in TIMSS 2015 in both science and mathematics among the East Asian countries and also in the world, Finland has the highest average score in TIMSS 2015 in both science and mathematics among the European countries. On the other hand, Turkey has performed below the TIMSS average in both science and mathematics at fourth grade level (Mullis, Martin, Foy & Hooper, 2016). Similarly, in PISA 2018 (Programme for International Student Assessment), the three countries performances are similar as in the TIMSS in reading literacy, science literacy, mathematics literacy (OECD, 2019). Therefore, comparing these countries enable us to examine not only the similarities and differences of between two top achiever countries located different part of the world, but also reveal the discrepancies between high performing countries and a low performing country based on the aims of this study.

The total number of the teachers included in this study from three different countries is 1263 (Finland = 461, Singapore = 551, and Turkey = 251). The distribution of demographic variables on each of three countries show some similarities. Most of the teachers are female in Finland and Singapore, 78% and 73%, respectively. In Turkey, the percentage of female teachers is 57%. The other demographic variable which is related to this study is the education level of the teachers. In Singapore and Turkey, most teachers do not have a master or PhD degree, 89% and 96%, respectively. Reversely, the percentage of teachers who have master and PhD degree is %84 in Finland.

2.2. Variables of the Study

In TIMSS 2015, teacher questionnaire included items related to teachers' instructional practices in classrooms, students' needs that limited teaching, teachers' views on schools' emphasis on academic success, and discipline issues. The items in the TIMSS questionnaires were chosen that can be combined a determined single underlying latent construct. Item Response Theory (IRT) scaling methods was used, specifically the Rasch partial credit model, to produce the scales scores for underlying latent construct. Based on the mean scores of all TIMSS countries and standard deviation across all countries, the unit of the scale was determined for latent constructs (Martin, Mullis & Hooper, 2016). Therefore, in TIMSS 2015 database, scales scores of latent constructs are also available both as a scale score (continuous) and as an index (categorical) formats. In this study, the index (categorical) variables were used for the latent constructs to create response and explanatory variables of this study.

2.2.1. Response Variable

The school emphasis on academic success latent construct scale and index scores were produced based on the responses of teachers to the fourteen items. TIMSS 2015 teacher questionnaire presented these items after asking "how would you characterize each of the following within your school?". The items presented as: Teachers' understanding of the school's curricular goals (1), Teachers' degree of success in implementing the school's curriculum (2), Teachers' expectations for student achievement (3), Teachers working together to improve student achievement (4), Teachers' ability to inspire students (5), Parental involvement in school activities (6), Parental commitment to ensure that students are ready to learn (7), Parental expectations for student achievement (8), Parental support for student achievement (9), Parental pressure for the school to maintain high academic standards (10), Students' desire to do well in school (11), Students' ability to reach school's academic goals (12), Students' respect for classmates who excel in school (13), Collaboration between school leadership and teachers to plan instruction (14).

The response options were given as "very high", "high", "medium", "low", and "very low". Based on the combination of these items, the scale score of the latent construct was produced. The index score of this latent construct were categorized with the usage of IRT scaling methods (mentioned above) based on the scale score. The index score of the latent construct was categorized as: "very high emphasis", "high emphasis", and "medium emphasis". The Cronbach's alpha coefficients were found for Turkey, Finland, and Singapore as 0,90, 0,85, and 0,90, respectively, which indicate satisfactory reliability. Then, the index variable

was recoded to a two-level categorical variable in which the combination of very high emphasis and high emphasis defined as “high emphasize” (1) and medium emphasis defined as “less emphasis” (0). In this way, the response (dependent) variable that could be used in logistic regression was produced.

2.2.2. Explanatory Variables

Safety, orderly, and disciplined schools: TIMSS 2015 teacher questionnaire includes items related to safety, order, and discipline issues and the latent construct named as “safety, orderly, and disciplined schools”. The items that comprises this latent variable were presented to the teachers to indicate the agreement or disagreement level as follows: This school is located in a safe neighborhood (1), I feel safe at this school (2), This school’s security policies and practices are sufficient (3), The students behave in an orderly manner (4), The students are respectful of the teachers (5), The students respect school property (6), This school has clear rules about student conduct (7), This school’s rules are enforced in a fair and consistent manner (8).

The response options were presented as “agree a lot”, “agree a little”, “disagree a little”, and “disagree a lot”. The items were used to create a scale variable and an index variable for this latent construct. The index variable of the construct has three categories which are labelled as “very safe and orderly”, “safe and orderly”, and “less than safe and orderly”. The Cronbach’s alpha coefficients were computed as 0,89 for Turkey, 0,82 for Finland, and 0,89 for Singapore. Then, the index variable was recoded as to transform “very safe and orderly” and “safe and orderly” responses to “safe and orderly schools” (1), “less than safe and orderly” responses to “not safe and orderly schools” (0). So, our first explanatory (independent) variable was produced for the norms of logistic regression.

Teaching limited by students need: TIMSS 2015 teacher questionnaire presented items related to students’ basic needs such as nutrition, sleep, and prerequisite knowledge that have a potential to limit the teaching in the classroom. The items that were included under this latent construct were presented to the teachers to indicate the extent of limitation of their teaching by the followings: Students’ lack of prerequisite knowledge or skills (1), Students suffering from lack of basic nutrition (2), Students suffering from not enough sleep (3), Disruptive students (4), Uninterested students (5), Students with mental, emotional, or psychological disabilities (6).

The response options were presented as “not at all”, “some”, and “a lot”. These items were used to create a scale score and an index score for this latent variable. The index variable of the latent construct has three categories and named as “not limited”, “somewhat limited”, and “very limited”. The Cronbach’s alpha coefficients were computed for Turkey, Finland, and Singapore as 0,73, 0,72, and 0,77, respectively which indicate good reliability. Then, the index variable was recoded by transforming “somewhat limited” and “very limited” to “limited” (1) and we remained the “not limited” (1) as the same.

Homework pressure: The instruction time can be extended by giving students homework and used to evaluate student outcomes. In some studies, it is also viewed as an indicator of academic pressure which is in turn related with the emphasis of academic success. In TIMSS 2015, teachers were asked to indicate the frequency of assigned science homework. The response options were presented as “do not assign science homework”, “less than once a week”, “1 or 2 times a week”, “3 or 4 times a week” and “everyday”. This observed variable was recoded to a two-level categorical variable by transforming do not assign science homework, less than once a week, and 1 or 2 times a week as “no homework pressure” (0) and transforming 3 or 4 times a week and everyday options as “homework pressure” (1). In this study, homework pressure was used as an indicator of academic pressure which was discussed in the last section.

Education levels of the teachers: We created this variable with regard to teachers who have a master and doctorate degree and who have not. Therefore, teachers who do not have a master or doctorate degree recoded as “do not have master and doctorate” (0) and teachers who graduated from master or doctorate level was labelled as “have a master or doctorate degree” (1).

2.3. Analyses of the Study

Multiple logistic regression was chosen to understand directly which variables effect the presence or absence of emphasis on academic success in schools. Multiple logistic regression allows us to see the probability of

given teacher's school emphasis on academic success, and the various effects of the variables on the school's emphasis on academic success.

Therefore, to understand whether the odds of a school that emphasis on academic success is same across Turkey, Finland and Singapore when controlling the variables such as safety, orderly, and disciplined schools, limitation of teaching by the students' needs, homework pressure, teachers' education level and gender of the teachers, multiple logistic regression was carried out based on the model presented as follow:

$$\Pr (Emphasis_s = 1) =$$

$$\frac{\exp (\beta_0 + \beta_1 T_t + \beta_2 F_t + \beta_3 Safe_s + \beta_4 Limited_s + \beta_5 Gender_t + \beta_6 Hwpressure_s + \beta_7 Edulevel_t)}{1 + \exp (\beta_0 + \beta_1 M_t + \beta_2 M_t + \beta_3 Safe_s + \beta_4 Limited_s + \beta_5 Gender_t + \beta_6 Hwpressure_s + \beta_7 Edulevel_t)}$$

In the equation, *Emphasis_s* shows whether school *s* emphasis on academic success; *T_t* and *F_t* represent Turkey and Finland, respectively. In addition, *Safe_s* is the safe, orderly, and disciplined issues in school *s*; *Limited_s* is teaching limited by students' need in school *s*; *Hwpressure_s* is the pressure of the homework given by the teacher in school *s*. On the other hand, *t* is for the teachers; *Gender_t* is the gender of teacher; *Edulevel_t* is the education level of teacher.

For the second research question, to understand how the odds of being a school that emphasis on academic success in Turkey, Finland, and Singapore affected by the variables related to safety, order and discipline issues in schools, , limitation of teaching by the students' needs, homework pressure, teachers education level and gender of the teachers, another multiple logistic regression was performed with regard to the model presented as follow:

$$\Pr (Emphasis_s = 1) =$$

$$\frac{\exp (\beta_0 + \beta_1 Safe_s + \beta_2 Limited_s + \beta_3 Gender_t + \beta_4 Hwpressure_s + \beta_5 Edulevel_t)}{1 + \exp (\beta_0 + \beta_1 Safe_s + \beta_2 Limited_s + \beta_3 Gender_t + \beta_4 Hwpressure_s + \beta_5 Educalevel_t)}$$

The abbreviations in the second equation are the same with the first one. The results of the all multiple logistic regression analyses are shown in the following section.

3. Results

Firstly, we present the results analysis regarding the first research question. The sample that was used for the research questions includes 1263 teachers (Turkey = 251, Finland = 461, and Singapore = 551). The percentage of teachers in three countries were presented with respect to gender in Table 1. This table also provide information about the number of teachers who have a master or PhD degree and who did not get master or PhD degree.

Table 1. Percentages of teachers with respect to gender and education level in the sample

	Turkey N = 251	Finland N = 461	Singapore N = 551	Total N = 1263
<i>Gender</i>				
Female	57,4	72,8	78,1	71,7
Male	42,6	27,2	21,9	28,3
<i>Education Level</i>				
No master or PhD	4,2	11,4	84,4	63,6
Master or PhD	95,8	88,6	15,6	36,4

The percentages of teachers who express that their school emphasis on academic success and who indicated that their school not emphasis academic success were presented in Table 2. Teachers who indicate that their school emphasis on academic success in Finland is the highest percentage (63,6%) among three countries. In Turkey, the percentages of teachers whose school emphasis and whose do no are nearly the same. In Singapore, 43,9 teachers expressed that their school emphasis on academic success

Table 2. School emphasis on academic success by country in % of teachers

	Turkey N = 251	Finland N = 461	Singapore N = 551	Total N = 1263
<i>Emphasis on academic success</i>				

Yes	49,8	63.6	56.1	57,6
No	50,2	36.4	43,9	42,4

It is recommended that since the logistic regression is sensitive to the multicollinearity which deals with the correlation of the independent variables to each other (should not be correlated to each other-tolerance values are less than 0.1) and correlation of independent variable to dependent variable (should be strongly correlated), the correlation matrix should be checked (Pallant, 2011). The correlation matrix was checked, and it was seen that the correlation values among independent variables did not exceed the 0.1. Before the analysis, dependent and independent variables also checked whether they have outliers.

The multiple logistic regressions revealed that school emphasis on academic success varies across Turkey, Finland, and Singapore (Table 3), after controlling the presence of the safe, order and discipline issues in schools, students' needs that limited teaching, academic pressure on students, gender of teachers, and teachers' education level ($F(2, 1157) = 229,34, p < 0.05$).

Table 3. Odds ratios for teachers' whose school emphasis on academic success when controlling group of variables

	Model 1	Model 2	Model 3
Finland	3.54* (0.2)	3.65* (0.2)	
Turkey		1.03 (0.2)	0.28* (0.2)
Singapore	0.97 (0.1)		0.27* (0.2)
Safe	0.23* (0.1)	0.23* (0.1)	0.23* (0.1)
Limited	0.52* (0.1)	0.52* (0.1)	0.52* (0.1)
Gender	0,89 (0.1)	0.89 (0.1)	0.89 (0.1)
Hwpressure	0.71 (0.2)	0.71 (0.2)	0.71 (0.2)
Edulevel	1,87* (0.2)	1.87* (0.2)	1.87* (0.2)

* $p < 0.05$. Standard errors shown in parenthesis.

In the first model, when comparing the teachers views on their school's emphasis on academic success in Finland to the teachers views in Turkey, teachers in Finland have more than 3 times the odds of working in schools which emphasis academic success after controlling group of variables (95% CI from 2,17 to 5.78). Significant value was gathered for this odds ratio at 0.05 level. On the other hand, teachers who are working in Singapore has 3% smaller odds of working in a school which emphasis on academic success than teachers in Turkey. However, the estimated odds ratio is not significant at 0.05 level.

In the second model, when comparing teachers' views on their school's emphasis on academic success in Turkey to the teachers views in Singapore, a teacher whose school emphasis on academic success in Turkey has only 3% greater odds than a teacher whose school emphasis on academic success in Singapore after controlling the group of variable. The odds ratio was estimated 1.03 which was not significant. On the other hand, teachers who are working in Finland have more than 3 times the odds being in a school that academic success is emphasized comparing the teachers in Singapore (estimated OR = 3,65, 95% CI from 2,38 to 5,58).

In third model (Table 3), the adjusted odds ratio for teachers whose school emphasis on academic success, comparing to Turkey to Finland, was estimated as 0.28 (95% CI from 0.17 to 0.46), after controlling for group of variables. Significant value was gathered for this odds ratio at 0.05 level. This odds ratio means that a teacher working in Turkey has 72% smaller odds of working in a school which emphasis on academic success than a teachers in Finland after controlling for group of variables. The estimated adjusted odds ratio was found 0.27 when comparing the teachers in Singapore to the teachers in Finland (95% CI from 0.17 to

0.41), after controlling the group of variables. This odds ratio means that, a teacher in Singapore has 73% smaller odds of working in a school which emphasis on academic success than a teachers in Finland.

Secondly, for the second research question, the logistic regression analyses were run regarding to the model for countries separately. Table 4 present the estimated odds ratio for the teachers whose school emphasis academic success for three different countries.

Table 4. Odds ratios for the teachers whose school emphasis on academic success.

	Finland	Turkey	Singapore
Safe	5.15* (0.2)	7.38* (0.2)	2.88* (0.2)
Limited	1.49 (0.2)	5.11* (0.3)	2.06* (0.2)
Gender	1.34 (0.2)	1.16 (0.3)	0.96 (0.2)
Hwpressure	1.62 (0.2)	1.02 (0.3)	3.29* (0.3)
Edulevel	0.37* (0.2)	1.69 (0.3)	0.62 (0.3)
Intercept	1.89 (0,3)	0.29 (0.3)	0.49 (0.2)

* $p < 0.05$. Standard errors shown in parenthesis.

In Finland, when a teacher works in a schools that is safe, orderly and disciplined, this teacher have more than 5 times the odds of working in schools which emphasis academic success than the teachers working in not safe, orderly, and disciplined schools (OR = 5.15; 95% CI from 3.12 to 8.48). The estimated odds ratio was significant at 0.05 level. In addition, when a teacher has a master of PhD degree, such teachers has 63% lower odds viewing their schools that emphasis on academic success (OR = 0.37, 95% from 0.19 to 0.73). The estimated odds ratios of the other variables were found not significant in Finland at 0.05 level.

In Turkey, the estimated odds ratio for the explanatory variable of “safe, orderly and disciplined school” has the highest value among the countries. The odds ratio was estimated as 7.78 (95% CI from 4.1 to 13.2). Significant value was also gathered for such ratio at 0,05 level. This odds ratio means that a teacher who works a safe, orderly and disciplined schools has nearly 7,5 times the odds of working in a school which emphasis academic success than the teachers working in not safe, orderly, and disciplined schools. In addition, for Turkey, another significant odds ratio was estimated 5.15 for the explanatory variable of “teaching limited by students need”. This significant and highest odds ratio means that teachers whose teaching is not limited by students’ basic needs has 5 times the odds of working in a school which emphasis academic success than the teachers whose teaching is limited by students’ basic needs. (OR = 5.11; 95% CI from 1,59 to 16.3). The estimated odds ratios of the other variables were found not significant in Turkey at 0.05 level.

In Singapore, teachers who work in a safe, orderly, and disciplined school have nearly 3 times odds of working in schools which emphasis academic success than the teachers working in not safe, orderly, and disciplined schools (OR = 2.88, 95% CI from 1.97 to 4.22). Significant value was also gathered for such ratio at 0,05 level. In addition, teachers whose teaching is not limited by students basic needs has 2 times the odds working in a school which emphasis academic success than the teachers whose teaching is limited by students’ basic needs (OR = 2.06; 95% CI from 1.42 to 2.99). The estimated odds ratio was significant at 0.05 level. Moreover, teachers whose students are exposed to the homework pressure has more than 3 times odds of working in a school which emphasis academic success than the teachers whose students do not exposed to the homework pressure (OR = 3.29; 95% CI from 0.870 to 12.4). The estimated odds ratios of the other variables were found not significant in Singapore at 0.05 level.

4. Discussions and Conclusion

In the literature , it was expressed that as well as being the one of the ingredients of the school climate and its relation to the instructional quality, schools emphasis on academic success has been studied based on its

effect on students' both achievement and motivation (Mullis et al. 2012; Nilsen & Gustafsson 2014; Scherer & Nilsen, 2016). A better understanding of how school emphasis on academic success can be promoted in the desired level is one of the key dimension that create more efficient schools that contribute education system. This understanding also contributes to the school leaders and policy makers by being aware of the factors fostering schools' emphasis on academic success by relating these factors to the instructional quality.

In this study, as being one of the components of school climate and expected to be one of the robust predictor of schools' emphasis on academic success, safety, order, and discipline issues was selected as the first explanatory variable of our study. In addition, students' needs that limiting teaching in the classroom was determined as another predictor because of its relation to the classroom composition which is also linked to the students' socioeconomic status. The frequency of homework which was assigned to the students was selected to be one of the indicator of academic pressure in schools. Teachers' education level was stated as one of the indicator about teachers' depth of knowledge which is related with the instructional quality. So, we also included teachers' education level to our study as a predictor in our model. And, lastly, we included gender as a background characteristic of the teachers. Comparative approach enables us to gather important issues to the discussion part of the study as presented at the results. Since the TIMSS 2015 database was used in this study, we only used the variables that was presented by TIMSS and this limitation do not allow us to include some variables that could be related to schools' emphasis on academic success such as teachers satisfaction of their jobs.

Although there are some minor limitations based on the nature of the study, we found that schools' emphasis on academic success varies across the three countries after controlling the group of variables. Among the three countries, Finland is the country where teachers view their schools have the highest likelihood of emphasis on academic success. On the other hand, teachers in Turkey reported that their schools show lower likelihood of emphasis on academic success than those of Finland.

Martin et al. (2013) reported that among all the school factors in TIMSS, school emphasis on academic success is one of the construct which is strongly predict students' achievement. The report also revealed the correlations between school emphasis on academic success and students' mathematics and science achievement. When we compare the correlations of Finland and Singapore, we realize that the correlation coefficients were very close to each other. In addition, although Finland and Singapore are among the high performing countries in TIMSS 2015, we can say that our group of variables that we have used as covariates lead to Finland to have highest likelihood of schools that emphasis on academic success. Surprisingly, while Turkey was ranked under the TIMSS 2015 average and Singapore was the top achiever among all countries in mathematics and science at fourth grade level (Mullis et al., 2016), teachers in Turkey has a greater likelihood of being in the schools in which the academic success is emphasized. So, our group of covariates that was used in this study lead Singapore's schools have least likelihood of emphasis academic success. The effects of the covariates will be discussed separately in the next paragraph for each country.

As the studies in the literature indicated (Martin et al., 2013; Nilsen & Gustafsson, 2014), this study attest safety, orderly disciplined issues in a school is one key characteristics of schools associated with the schools emphasis on academic success. In all the three countries, it is very important to ensure safety, order and disciplined school to foster the school's emphasis on academic success. This study also indicate with the agreement of examined literature (Martin et al., 2013; Milam et al., 2010; Nilsen and Gustafsson, 2014), safe, order and disciplined school lead lots of opportunities to the schools to focus on teaching and learning which in turn emphasize academic success. Especially in Turkey, the odds of having a school which emphasize academic success decreases by more than 7 times when this school is not safe, orderly and disciplined.

Focusing on learning and prioritizing and fostering academic success can be appropriately implemented by allocating time, energy, and resources (Nilsen & Gustafsson, 2014). Students basic needs such as prerequisite knowledge, enough nutrition, and enough sleep could be very big problems for primary teachers to deal with. In our study, among the three countries, Finland is the country in which students' basic needs that limited teaching is not significantly associated with the school's emphasis on academic success. This may be related the socioeconomic status of the students in Finland. In addition, in Turkey, the odds of having a school in which academic success is emphasized 5 times increases if the teaching in this school is not limited

by students' needs. The results also may be explained by the distribution of students' socioeconomic status (SES) in Turkey. Based on the PISA 2015 results, more than half of the students in Turkey are in the bottom decile of the international SES distribution (OECD, 2016a). On the other hand, surprisingly, in Singapore, although students' SES are high, limitation of teaching by the students need is associated with schools' emphasis on academic success.

The frequency of homework was stated as an indicator of academic pressure (Kythreotis et al., 2010) which is a factor that reflecting priority of academic success. For this variable, the only significant relation was found for Singapore. In Singapore, teachers whose students are exposed to the homework pressure which reflect to academic pressure, the odds of having a school in which academic success is emphasized 3 times increases when compared to the teachers whose students do not exposed to the homework pressure. In a study, it was revealed that whereas positive association was found between the frequency of given homework and students' achievement in Singapore, the relationship was found non-significant for Turkey in TIMSS (Güven & Akçay, 2019). On the other hand, the association of teacher education level, which can be shown as an indicator of teachers' depth of knowledge in content and pedagogy, with the school emphasis on academic success is significant for only Finland. The highest percentage of the teachers who have master and PhD degree in Finland among three countries can be shown the reason of this result.

It is very important to research in the subject of schools' emphasis on academic success since its undeniable contribution on students' achievement. Therefore, in light of the related literature, the new factors that affect schools' emphasis on academic success should be studied based on the other international large-scale assessments such as PISA and TALIS. And it could be valuable to design a study which includes the factors revealed in this study for TIMSS 2019 data which is expected to release at the end of this year.

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