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Analysis of the Data on School Principals in the TALIS 2018 Country Note Reports in the Context of the PISA 2018 Results

Osman Ferda Beytekin
Ege University

Bahar Yuce
Ege University

Abstract: A vast amount of research has been conducted to investigate the effects and roles of educational leaders on school outcomes using data from international studies. To get a better understanding of the relationship between educational leaders and school outcomes, evaluating international studies together may offer more comprehensive suggestions for educational policies. The purpose of this paper was to examine the data on school principals in the TALIS 2018 country note reports in the context of the PISA 2018 results in order to have a broad perspective on the characteristics of school principals as educational leaders. A document analysis was performed on data derived from the TALIS 2018 country note reports of eight OECD countries and Türkiye, and the collected data was subjected to descriptive analysis. At the end of the data analysis, it was revealed that countries that had high success in the PISA results generally had positive values in the TALIS results. It was shown that school principals in the countries ranked high in the PISA have generally more work experience as principals and are more satisfied with their salaries. In addition, their participation in training programs or courses on school management and professional development activities is high. The present study also confirmed previous research, indicating that individuals who have high job satisfaction show high success, thereby ranking high in the PISA results in the context of this study. Our findings indicated that school principals should be encouraged to participate in training to support their professional development.

Keywords: TALIS 2018, PISA 2018, International surveys, OECD countries, School principals

Introduction

In today's competitive world, the importance of education is increasing, and education leads to enhanced productivity and creativity and stimulates entrepreneurship and technological progress. Considering the strong relationship between education and the economy, it is necessary to determine the right education policies for the development of the country. In order to develop education policies and gain experience in their applicability, collaborating with other countries in terms of having knowledge of their education policies and taking an example from their good practices can yield positive results. In this regard, international studies have a significant impact on the sharing of good practices and effective education policies between countries. Hence, besides the academic role of international studies such as The Trends in International Mathematics and Science Study (TIMSS), The Programme for International Student Assessment (PISA), The Teaching and Learning International Survey (TALIS), The Progress in International Reading Literacy Study (PIRLS), The Programme for the International Assessment of Adult Competencies (PIAAC), etc., each of which has its own learning outcome, they also have a decisive role in shaping policies. Moreover, considering the point that international studies emphasize in terms of content, it is seen that the ability to transfer knowledge to the real world comes to the fore in measurement (Cumaoglu & Ozdemir Simsek, 2020). Many conclusions and suggestions for policymakers and educators are made after the student achievements are calculated with the subscales and the scores are created for each subscale. Moreover, countries have the opportunity to see the results of their own

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educational programs and policies thanks to the international studies that are held at regular intervals (Sahin & Basgul, 2020), and they also have the opportunity to see their rank among other countries participating in the studies (Celebi et al., 2014). For these reasons, the results of the international studies, which are the education scorecards of countries, are also considered an opportunity to take preventive and improving steps in education policies.

TALIS is a comprehensive survey study that examines the education policies implemented by countries from an international perspective. TALIS aims to identify similar problems faced by countries by asking school principals, and teachers questions about the working conditions and learning environments in their schools (Organization for Economic Co-operation and Development [OECD], 2019d). TALIS, which is one of the international surveys and aims to examine the education policies of countries and their reflections on schools in terms of teachers and school principals, was first implemented in 2008 with the participation of 24 countries. The third cycle and the most recent implementation of TALIS, which is carried out by the OECD with the participation of many countries every five years, was carried out in 2018 with the participation of 48 countries, 30 of which are OECD members. In this cycle, in which many teachers and school principals from primary (International Standard Classification of Education [ISCED] 1), lower secondary (ISCED 2), and high school (ISCED 3) levels participated, data were collected through questionnaires, and the findings were first published by the OECD in 2019 (TEDMEM, 2019). The continuation of the TALIS 2018 results were published in 2020. Thanks to the TALIS studies, which provide a wide-ranging perspective on education with data from different cultures, good practices, deficiencies, and problems in different education systems around the world have the opportunity to be examined.

Another survey study developed by the OECD and applied internationally is PISA. PISA, which was first implemented in 2000, is a survey study that evaluates every three years to what extent 15-year-old students worldwide have acquired the basic knowledge and skills necessary for full participation in social and economic life (OECD, 2019c). PISA assesses students' reading skills and literacy in mathematics and science, which are three main areas, and measures their performance in these areas. In each PISA cycle, the main focus is determined, and detailed analyses are made regarding that area. Also measured in PISA is how well students can make inferences from the knowledge they have learned before and to what extent they can apply this knowledge to new situations inside and outside the school. A large number of students from 79 countries, 37 of which are OECD member countries and 42 of which are partner countries, participated in PISA 2018, in which the domain of reading skills was determined as the main focus (OECD, 2019a). Hence, the correct interpretation of PISA results, which provide data about different school climates as well as three main areas, can be a useful tool for increasing student achievement and education policies.

In addition to its studies on the achievement and social-emotional skills of students, the OECD, which defines policies related to school practices and the quality of the education system, tries to find answers on how teachers and schools can contribute to student success. Thus, a complete view of what is happening in today's schools is obtained by evaluating two survey studies together that complement each other, such as PISA and TALIS, which are two pieces of the puzzle. (OECD, 2021). With the evaluation of TALIS and PISA results together, the link created between the two ensures better production of both data quality and policies (OECD, 2015). This link also provides valuable information about teaching strategies and their relationship with school climate, student outcomes, and classroom environments. Therefore, a better comprehension of the relationship between TALIS and PISA helps teachers, schools, and educational policymakers design more effective policies to increase learning achievements (Le Donné et al., 2016). In accordance with this purpose, some questions about the teaching profession and teacher self-efficacy in the TALIS cycle conducted in 2013 were also included in the PISA 2015 optional teacher questionnaire (OECD, 2015). Hence, more comprehensive analyses were made by using the same variables in both studies. Similarly, common questions on the themes of job satisfaction, self-efficacy, school climate, and teacher training were included in the TALIS 2018 and the PISA 2018 (TEDMEM, 2019). Thus, the same themes were evaluated in terms of different contexts created by different studies and discussed from a broad perspective.

School management plays a key role in school development and the quality of education (Bolívar Botía & Bolívar Ruano, 2011). Therefore, it is crucial to understand the importance of the school principal for educational success. The literature review presents the broad results of national and international studies covering the training process of school administrators and the standards and qualifications that should be possessed by school administrators (Aslan & Karip, 2014; Bakkal & Radmard, 2020; Schleicher, 2012; Turan & Sisman, 2000; Young et al., 2017). In this regard, the educational leadership standards set forth by The Interstate School Leaders Licensure Consortium (ISLLC) are one of the most prominent studies (Aras, 2020). It is seen that school development and education quality, in which school management plays a vital role, are also related

to the mission, vision, and basic values included in the 2015 educational leadership standards. Thus, it is indispensable for school administrators to fulfill their responsibilities and exhibit appropriate managerial behaviors in order for the school to achieve its purpose, be successful, and provide quality education (Kurun & Cobanoglu, 2019). Considering the duties and responsibilities of school administrators, in addition to their managerial behaviors, they must also exhibit successful educational leadership behaviors to reach the predetermined goals of the school and be effective in improving the achievement of students (Oztaş, 2010). Moreover, there are many decisions that education leaders have to make in the process of achieving this aim. Decision-making is one of the most basic responsibilities of a principal, but it is also a criterion of competence for the principal (Uras, 1995). Studies have revealed that when school leaders are given autonomy in making important decisions, they can make a difference in student performance and schools, and this can be achieved by influencing teachers' motivation, commitment, capacity, school climate, and environment (Pont et al., 2008). While this shows the importance of the leadership behaviors of autonomous school principals in decision-making for school success and education quality, it also emphasizes the leadership behaviors of school principals. In this context, Gümüş and Bellibas (2015), who drew attention to the positive relationship between school principals who exhibit successful leadership behavior and effective schools, stated that leadership training has gained importance for school principals. Accordingly, school principals being well-trained and constantly improving are of great importance in terms of educational outcomes. In this study, the data on school principals in the TALIS 2018 country note reports is discussed within the scope of the PISA 2018 results.

Purpose of the Study

The main purpose of this research is to examine the data on school principals in the TALIS 2018 country note reports in the context of the PISA 2018 results. Therefore, the data on school principals in the TALIS 2018 country note reports were evaluated together with the results of the PISA 2018. This research is important in terms of considering the results of the TALIS 2018 together with the results of the PISA, which are both international large-scale studies. Although there are many studies on TALIS and PISA results in the literature, there are not enough studies evaluating TALIS and PISA results together. The findings of this study are important, as it is thought that they will contribute to the professional development of school principals in Türkiye and will help researchers who will work in this field.

The Research Question

The overarching research question of this study is as follows:

- How are the TALIS 2018 results for school principals in the first 8 OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results?

The sub-questions created in line with this research question are as follows:

- How are the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results in terms of
 - Gender distribution of school principals
 - Age of school principals
 - School principals' years of work experience (as a principal)
 - Pre-service training of school principals
 - Participation of school principals in in-service training
 - School principals' satisfaction with their job and the terms of their contract (apart from salary)
 - School principals' satisfaction with their salaries,
 - The autonomy of the schools over determining salary increases or bonuses for teachers based on principals' responses
 - Views of school principals and teachers about collegiality and collaboration in school tasks
 - The three most prevalent sources of stress for school principals

Method

This study was carried out within the scope of the "document analysis" design, which is one of the qualitative research designs. Qualitative research aims to examine the problem situation of the research by interpreting it

from a holistic perspective that includes different disciplines (Karatas, 2015). Qualitative researchers aim to “borrow ideas from the people they study and place them within the context of a natural setting” (Neuman, 2007, p. 89).

According to the PISA 2018 results, the top 8 countries that are above the OECD average in all three areas and show high success are, respectively: Estonia, Canada, Finland, Ireland, Korea, Poland, Sweden, and New Zealand. Since the TALIS 2018 country note reports of Ireland and Poland could not be reached, these two countries were excluded, and the other two countries that were above the OECD average in all three areas according to the PISA 2018 results were included, respectively. At the end of this process, the eight countries that emerged and were discussed in this study are, respectively; Estonia, Canada, Finland, Korea, Sweden, New Zealand, the United Kingdom, and Japan.

The reports that are used as research documents were accessed from the OECD's related website: <https://www.oecd.org/education/talis/talis-2018-country-notes.htm>. Within the scope of the study, the reports of eight OECD countries and Türkiye were examined on this website, which includes the results of 49 countries. In addition, it was seen that only the province of Alberta was taken into account in Canada's TALIS 2018 country note reports and only England in the UK's TALIS 2018 country note reports after examinations were made. Hence, the findings about Canada in this study are only for the province of Alberta, and the findings about the United Kingdom are only for England.

Research Documents

The documents of this research are the TALIS 2018 country note reports of 8 OECD countries and Türkiye, which were created by taking into account the PISA 2018 success ranking generated based on the mean scores of countries. The countries whose TALIS 2018 country note reports were examined as part of the research document are shown in Table 1, titled "OECD country means based on the results of PISA 2018". Moreover, since the main subject assessed in PISA 2018 is "reading", this ranking was adapted by considering the reading means.

Table 1. OECD country means based on the results of PISA 2018

Countries	Reading Mean	Mathematic Mean	Science Mean
Estonia	523	523	530
Canada	520	512	518
Finland	520	507	522
Korea	514	526	519
Sweden	506	502	499
New Zealand	506	494	508
United Kingdom	504	502	505
Japan	504	527	529
OECD Average	487	489	489
Türkiye	466	454	468

Note. Adapted from “PISA 2018 Results” by OECD (2019b, p.17)

Data Collection and Analysis

In this study, document analysis was used as a data collection method. Karatas (2015) defined document analysis as a systematic analysis method that examines written documents related to the research topic. Document analysis "provides the systematization of the researcher's observation, interview records, and other documents" (Baltacı, 2019). Bowen (2009), who states that document analysis has some disadvantages as well as advantages, lists availability, cost-effectiveness, and exactness as some advantages of document analysis; also mentions biased selectivity and low retrievability as some of its disadvantages.

The document analysis stages developed by Forster (1995) are as follows; accessing the document, checking the originality, understanding the document, analyzing the data and using the data (as cited in Yıldırım & Simsek, 2018). At the stage of accessing the document, the country note reports that are the documents of this research were accessed from the website of the OECD (<https://www.oecd.org/education/talis/talis-2018-country-notes.htm>). At the stage of checking originality, it has been seen that documents (reports) are original as they

have been downloaded from the official site of the organization as published. At the stage of understanding the document, the relevant country reports were examined in detail and within a certain system. At the stage of analyzing the data, descriptive analysis was applied to analyze the research documents. For descriptive analysis, the data were processed based on a predetermined framework, and the findings were interpreted. In this context, descriptive analysis was used to analyze data on the school principal's gender distribution, age, years of work experience (as a principal), training received on school management and instructional leadership, participation in professional development activities, satisfaction with the job and contract (apart from salary), satisfaction with the salary, views about the autonomy of schools over determining teachers' salary increases or bonuses, and teachers' views about collegiality and collaboration and the three most prevalent sources of stress. Finally, at the stage of using the data, the analysis was interpreted with suitable explanations. While interpreting the findings, the literature was also used, and the findings were supported with meaningful and consistent explanations from the literature.

While using various techniques to ensure the validity and reliability of the study, attention was paid to the analysis of the evaluated country note reports based on consensus and reporting in detail. Also, expert review and peer confirmation were used to ensure the internal validity (credibility) of the data. The processes carried out in this process are described in detail. Thus, external validity (transferability) was tried to be ensured. In this context, the model of the research, the research documents, the data collection, the analysis of the data, and how the findings were organized were explained in detail. Moreover, in order to increase the internal reliability (consistency) of the research, the findings were given directly. The raw data of the research were kept in consideration of the requests that may come from other researchers regarding the study data. Hence, external reliability (confirmability) was tried to be increased. In addition, document reliability was also ensured by choosing the country note reports of the OECD as a data source, which is the institution that has 38 member countries and intercontinental initiatives and reaches the most comprehensive systematic data on a wide range of subjects such as economy, health, education, etc. and shares their data with decision-making authorities.

Results and Discussion

Data obtained from the research documents was analyzed. The results are as follows:

Gender distribution of school principals in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

The gender distribution of school principals was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "Gender distribution of school principals".

Table 2. Gender distribution of school principals

Countries	Percentage of female principals	Percentage of male principals
Estonia	57	43
Canada	30	70
Finland	46	54
Korea	20	80
Sweden	69	31
New Zealand	54	46
United Kingdom	41	59
Japan	7	93
Türkiye	7	93
OECD Average	47	53

In Table 2, showing the female-male percentage of school principals in the first 8 OECD countries in the PISA 2018 results and Türkiye; it is seen that Estonia, Sweden and New Zealand are above the OECD average in terms of female school principals. As for Türkiye, it has been found that the percentage of female school principals is 7%, which is well below the OECD average (47%). In addition, the country with the highest percentage of female school principals is Sweden with 69%, while the countries with the lowest percentage of female school principals are Japan and Türkiye with 7%. When Table 2 is analyzed together with the PISA 2018 ranking, it has been observed that the percentage of male school principals in the top countries in the PISA ranking is also above the OECD average, mostly. In addition, the fact that Türkiye and Japan have the same

percentage was found to be a significant result, and it was also considered a subject to be investigated. Also, Sweden has the highest percentage of female school principals (69%) among the countries examined. In addition, the low percentage of female school principals even in developed countries, which are at the top in the PISA 2018 results, is an indicator of the continued absence of women in the business world in a global sense.

Age of school principals in the first eight OECD countries that show high success in all three areas and Türkiye in the PISA 2018 results

The age of school principals was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "Age of school principals".

Table 3. Age of school principals

Countries	Average age of principals	Percentage of principals age 60 and above
Estonia	53	21
Canada	51	19
Finland	50	10
Korea	59	44
Sweden	52	24
New Zealand	52	14
United Kingdom	50	6
Japan	58	22
Türkiye	43	7
OECD Average	52	20

As seen in Table 3, the average age of school principals in Canada, Finland, the United Kingdom and Türkiye is below the OECD average (52 years old), while the school principals of Sweden and New Zealand have the same average age as the OECD average. When the percentage of principals age 60 and above was examined, the percentages of Estonia, Korea, Sweden and Japan were found to be above the OECD average. On the other hand, Türkiye is below the OECD average both in the average age of school principals and in the percentage of principals aged 60 and above. Table 3 shows that the average age of school principals in the top ranked countries in the PISA results is generally high. Like OECD countries that show high success in PISA, Gajda and Militello (2008) said that the average age of school principals in Massachusetts is increasing. Therefore, it was concluded that there could be a relationship between the age of school principals and school success.

School principals' years of work experience (as a principal) in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

School principals' years of work experience (as a principal) were examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "School principals' years of work experience (as a principal)".

Table 4. School principals' years of work experience (as a principal)

Countries	Principals' years of work experience (as a principal)
Estonia	10-15
Canada	10-15
Finland	10-15
Korea	0-5
Sweden	5-10
New Zealand	5-10
United Kingdom	5-10
Japan	0-5
Türkiye	5-10
OECD Average	10

Table 4 shows that the work experience of school principals in Estonia, Canada and Finland is above the OECD average (10 years). Also, it was seen that school principals have the least work experience as principals in Korea

and Japan (0–5 years). As for Türkiye, the work experience of school principals is 5–10 years, which is below the OECD. When the results are evaluated considering the PISA 2018 ranking, it has been observed that the work experience of school principals in the countries at the top of the PISA ranking is generally high and above the OECD average. In other words, countries where school principals have more work experience rank highly in the PISA. When the results of the school principals' age and work experience as principals obtained from this study are evaluated together, it can be concluded that the contribution of experienced school principals to school success by sharing their experiences with other staff is reflected in the PISA 2018 results. This finding supports the results of Clark et al. (2009) that higher school performance is associated with experienced school principals.

Pre-service training of school principals in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

Pre-service training of school principals was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "Pre-service training of school principals".

Table 5. Pre-service training of school principals

Countries	Percentage of principals who have received a training programme or course on school management before taking up their position as principal	Percentage of principals who have received a training programme or course on instructional leadership before taking up their position as principal
Estonia	59	60
Canada	56	48
Finland	88	48
Korea	82	94
Sweden	44	54
New Zealand	42	44
United Kingdom	64	57
Japan	54	71
Türkiye	30	36
OECD Average	54	54

In Table 5, showing the training of school principals before taking up their position as principal, it has been observed that the percentage of school principals who have received a training program or course on school management in Sweden, New Zealand and Türkiye is below the OECD average (54%). When it is evaluated in terms of school principals who have received a training program or course on instructional leadership, it is seen that Canada, Finland, New Zealand and Türkiye are below the OECD average (54%). While the country with the highest percentage in terms of school principals who have received a training program or course on school management is Finland with 88%, the country with the lowest percentage is Türkiye with 30%. When it comes to the percentage of principals who have received a training programme or course on instructional leadership, while Korea has the highest percentage with 94%, Türkiye has the lowest percentage with 36%. It has been observed that Türkiye has the lowest percentage and is well below the OECD average in both fields of training. When Table 5 is analyzed with the PISA 2018 ranking, it has been revealed that countries with a high percentage of school principals who have received pre-service training on school management or instructional leadership are generally at the top of the PISA rankings. Moreover, it was found as a significant result that New Zealand has a low percentage in both fields of pre-service training, although it ranks high in the PISA 2018 results, and that has also been identified as a subject to be investigated. Regarding the training completed by school principals, Recepoglu and Kılinc (2014) said that a postgraduate education obligation should be introduced for school principals. It may be said that thanks to the training school principals get, it is easier to exhibit successful leadership behavior.

Participation of school principals in in-service training in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

Participation of school principals in in-service training was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA

2018 results. The relevant data are presented in the table titled "Participation of school principals in in-service training".

Table 6. Participation of school principals in in-service training

Countries	Percentage of principals attending at least one professional development activity in the year prior to the survey
Estonia	100
Canada	99
Finland	99
Korea	99
Sweden	100
New Zealand	100
United Kingdom	99
Japan	99
Türkiye	96
OECD Average	99

As seen in Table 6, only Türkiye was below the OECD average (99%) with 96%, while all other countries on the list were above the OECD average. Moreover, the fact that Estonia, Sweden and New Zealand had 100% attendance at at least one professional development activity in the year prior to the survey was also found to be a significant result in terms of getting full points. When Table 6 is analyzed with the PISA ranking, it is revealed that the top ranked countries have high participation in in-service training. It means that countries that have high PISA 2018 rankings give more importance to professional development activities, and their participation in such activities is also high. Regarding the findings about the positive relationship between the participation of school principals in in-service training and the PISA 2018 results, in the study of Ozcan and Bakioglu (2010), it was revealed that in-service training improved school principals, but the level of development achieved was very low. On this subject, Chapman (2005) stated that schools need experienced school principals in order for the school and leadership practices in the school to be successful and emphasized experience.

School principals' satisfaction with their job and the terms of their contract (apart from salary) in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

School principals' satisfaction with their job and the terms of their contract (apart from salary) was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "School principals' satisfaction with their job and the terms of their contract (apart from salary)".

Table 7. School principals' satisfaction with their job and the terms of their contract (apart from salary)

Countries	Percentage of school principals who are satisfied with their job	Percentage of school principals who are satisfied with the the terms of their contract (apart from salary)
Estonia	94	88
Canada	99	80
Finland	92	64
Korea	96	62
Sweden	93	70
New Zealand	94	74
United Kingdom	93	82
Japan	93	48
Türkiye	83	34
OECD Average	95	66

Looking at Table 7, it has been seen that in terms of school principals who are satisfied with their job, the country with the highest percentage is Canada with 99%, and the lowest is Türkiye with 83%. In terms of school principals who are satisfied with the terms of their contract (apart from salary), the country with the highest percentage is Estonia with 88%, and the country with the lowest percentage is Türkiye with 34%. Türkiye is below the OECD average both in the percentage of school principals who are satisfied with their job and in the percentage of school principals who are satisfied with the terms of their contract (apart from salary). When these results are evaluated with the PISA 2018 ranking, it has been concluded that the countries that rank high in the

PISA ranking have high percentages in both satisfaction areas generally. When the findings of job satisfaction were compared with the age of school principals and the PISA 2018 results, it was found that the job satisfaction of experienced school principals was also high. A similar result was expressed in the study of Demirtas and Alanoglu (2015), and it has been revealed that there is a linear and positive relationship between age and job satisfaction level, and age is an important predictor of job satisfaction.

School principals' satisfaction with their salaries in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018

School principals' satisfaction with their salaries was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "School principals' satisfaction with their salaries".

Table 8. School principals' satisfaction with their salaries

Countries	Percentage of school principals who satisfied with their salaries
Estonia	44
Canada	61
Finland	67
Korea	59
Sweden	49
New Zealand	36
United Kingdom	81
Japan	29
Türkiye	52
OECD Average	47

In Table 8, showing the satisfaction of school principals with their salaries, it is seen that the percentage of school principals who are satisfied with their salaries in Estonia, New Zealand and Japan is below the OECD average (47%). The country with the highest percentage of satisfaction with salaries is the United Kingdom with 81%, while the country with the lowest is Japan with 29%. Türkiye, on the other hand, has a percentage above the OECD average of 52%. When Table 8 is analyzed with the PISA 2018 ranking, it is concluded that the percentage of school principals satisfied with their salaries in the top-ranked countries is high and generally above the OECD average. However, it has emerged as a significant result that the percentage of school principals who are satisfied with their salaries in New Zealand and Japan is far from the OECD average, which ranks high in the PISA 2018 rankings. This has been identified as a subject to be investigated. As for the positive relationship between satisfaction with job, salary, and the PISA 2018 results, it is an expected result that individuals become more motivated as their internal satisfaction with the work done and the employment contract, which includes their salary and personal rights, increases. As a result of the increased motivation, an increase in success may be observed both at the individual and organizational levels. Similarly, in the study conducted by Telman and Ünsal in 2004, it was revealed that individuals with high job satisfaction experienced high success (Basbekleyen, 2019). It is inevitable that the success of the organization will increase as a consequence of the more determined and enthusiastic work of individuals who are satisfied with their jobs. Moreover, making salary improvements for the job satisfaction of school principals by considering the level and physical structure of the school may make them more motivated towards work. Savas (2019) stated that the level and size of the school can also be considered instead of evaluating the salaries of school principals with the same standards.

The autonomy of the schools over determining salary increases or bonuses for teachers based on principals' responses in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

The autonomy of the schools over determining salary increases or bonuses for teachers based on principals' responses was examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "The autonomy of the schools over determining salary increases or bonuses for teachers".

Table 9. The autonomy of the schools over determining salary increases or bonuses for teachers

Countries	Percentage of schools have autonomy over determining salary increases or bonuses for teachers based on principals' responses
Estonia	49
Canada	50
Finland	13
Korea	7
Sweden	81
New Zealand	43
United Kingdom	77
Japan	11
Türkiye	8
OECD Average	32

Table 9 revealed that Finland, Korea, Japan and Türkiye have a percentage well below the OECD average (32%). Based on school principals' responses, the country with the highest percentage of school autonomy over determining salary increases or bonuses for teachers is Sweden with 81%, while the country with the lowest is Korea with 7%. Türkiye, on the other hand, has a percentage of 8%, which is below the OECD average. When Table 9 is evaluated with PISA 2018 results, based on the school principals responses, schools autonomy over determining salary increases or bonuses for teachers is generally higher in the countries ranked high. In other words, the impact of schools on teacher salaries or bonuses is also higher in countries at the top of the PISA 2018 ranking. Although Finland and Korea rank high in the PISA 2018 results, the low percentage of schools' autonomy over determining salary increases or bonuses for teachers emerged as a significant result and has been determined as a subject to be investigated further. Also, salary, which is a hygiene factor according to Herzberg theory, emerged as a strong motivation source in Gawel's (1996) study and was expressed as a strong motivation factor for all teachers who participated in the study. It may be said that salary is a strong motivation source for teachers as well as school principals, and it strengthens the importance of the school on teacher salaries. Therefore, making improvements in teachers' salaries and giving performance related bonus wages may be beneficial in terms of school success.

Views of school principals and teachers about collegiality and collaboration in school tasks in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

Views of school principals and teachers about collegiality and collaboration in school tasks were examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "Views of school principals and teachers about collegiality and collaboration in school tasks".

Table 10. Views of school principals and teachers about collegiality and collaboration in school tasks

Countries	Percentage of principals who report that teacher have significant responsibility for the majority of tasks concerning school policies, instruction and curriculum	Percentage of teachers who "agree" or "strongly agree" that their school provides staff with opportunities to actively participate in school decisions
Estonia	83	87
Canada	21	81
Finland	55	77
Korea	26	76
Sweden	30	79
New Zealand	41	73
United Kingdom	47	63
Japan	11	77
Türkiye	4	78
OECD Average	42	77

As seen in Table 10, the country with the highest percentage of school principals who report that teachers have significant responsibility for the majority of tasks concerning school policies, instruction and curriculum is Estonia with 83%, while the country with the lowest is Türkiye with 4%. The country with the highest percentage of teachers who 'agree' or 'strongly agree' that their school provides staff with opportunities to actively participate in school decisions is Estonia with 87%, while the country with the lowest is the United

Kingdom with 63%. Also, it has been observed that there are great differences between the answers given by school principals and teachers in Türkiye, Canada, Korea, Sweden and Japan. While the majority of teachers think that their school provides staff with opportunities to be actively involved in the decision-making process in school, only a few of the school principals report that teachers have significant responsibility for the majority of tasks concerning school policies, instruction and curriculum. For this reason, the results of Canada, Korea, Sweden and Japan as well as Türkiye display that more research needs to be conducted. According to Ronald Barth (2001), it is important for the organizational health of the school to show the teachers' leadership behaviors and to take decisions on many issues about students, teachers, course materials, curriculum, etc. It may also be said that the participation of teachers in decisions about the school is important for the integrity and consistency of the system. The fact that school principals in most of the countries that are in the top ranks in PISA 2018 think that teachers do not have significant responsibility for the majority of tasks is another surprising result of this research.

The three most prevalent sources of stress for school principals in the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results

The three most prevalent sources of stress for school principals were examined in detail in the TALIS 2018 country note reports of the first eight OECD countries, which show high success in all three areas, and Türkiye in the PISA 2018 results. The relevant data are presented in the table titled "The three most prevalent sources of stress for school principals".

Table 11. The three most prevalent sources of stress for school principals

Countries	Having too much administrative work to do	Accommodating students with special needs	Keeping up with changing requirements from local, municipal/regional, state or national/federal authorities	Being held responsible for students' achievement	Addressing parent or guardian concerns	Having extra duties due to absent school staff	Maintaining school discipline
Estonia	+	+	+				
Canada	+			+	+		
Finland	+		+			+	
Korea	+			+			+
Sweden	+	+				+	
New Zealand	+		+		+		
United Kingdom	+		+	+			
Japan	+			+	+		
Türkiye	+			+			+

When Table 11 was examined, it was seen that "having too much administrative work to do" is common in all countries. By taking into consideration the results of PISA 2018, it could be thought that school principals have too much administrative work in the first 8 OECD countries and Türkiye, and this creates a lot of trouble for them in terms of the source of stress. It is seen that "accommodating students with special needs", "having extra duties due to absent school staff" and "maintaining school discipline" were the least mentioned sources of stress by school principals. Looking at the data of Korea and Türkiye, it was found that all three sources of stress are common in these countries, which are "having too much administrative work to do", "being held responsible for students' achievement" and "maintaining school discipline". As for Canada and Japan, "having too much administrative work to do", "being held responsible for students' achievement" and "Addressing parent or guardian concerns" are the three common sources of stress in these countries. When Table 11 was evaluated with the PISA 2018 results, it was found as an impressive result that school principals in Korea, which is one of the top countries in the PISA 2018 ranking, and Türkiye which is at the bottom, have the same stressors. Similarly, school principals in Canada and Japan have the same stressors. It has been determined that this situation is a subject that needs to be investigated further. "having too much administrative work to do" may cause disruptions in areas such as in-school communication, family and school interaction, student success, the social duty of the school, and also individually. As a parallel to this finding, in the study of Beycioglu et al.

(2018), it was revealed that as school principals postpone many tasks due to workload, this situation causes disruptions in other works at school, and at the same time, they experience a loss of confidence and power towards teachers, students, and parents, who are the components of the school. Accordingly, our finding supports the idea that increasing work efficiency and effectiveness by reducing administrative workload that prevents other responsibilities of school principals may contribute to both school principals and school success.

Conclusion

In this study, researchers have focused on the analysis of the data on school principals in the TALIS 2018 country note reports in the context of the PISA 2018 results to gain a broad perspective on the characteristics of school principals as educational leaders. According to the findings, it was concluded that countries that have high success in PISA results generally have positive values in TALIS results. It was shown that the percentage of female school principals even in developed countries is low, and this emerged as an indicator of the continuing absence of women in the business world in a global sense. Moreover, it was observed that the contribution of experienced school principals to school success by sharing their experiences with other staff was reflected in the PISA 2018 results. The present study also shows that school principals have too much administrative work to do is one of the three most prevalent sources of stress related to education and shared in all countries studied.

Recommendations

This study is limited to the TALIS 2018 and PISA 2018 data. A more comprehensive interpretation may be achieved by including data from different years and more countries in the study. Available knowledge about school principals based on the results of TALIS and PISA can also be enriched through comparative studies covering more countries and involving large groups. In addition to these studies, by conducting a survey study with school principals in the countries included in the research, it may be seen if there are changes in the countries over the time elapsed through the TALIS and PISA results of 2018, and if so, in what direction. Furthermore, we recommend carrying out a more explanatory study by conducting research on the reasons for the findings obtained. Considering the research findings about countries like Türkiye, which are in the lower ranks in PISA 2018, it is obvious that experienced school principals are needed, and their participation in pre-service and in-service training should be encouraged. In this way, the effect of the leadership skills of school principals on education in these countries may be more prominent in addition to the improvements that may occur in the PISA results regarding the mission, vision, and core values, which are among the educational leadership standards.

Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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Author Information

Osman Ferda Beytekin

Ege University,
Izmir, Turkey

Bahar Yuçe

Ege University
Izmir, Turkey

Contact e-mail: bahar.yuce@inonu.edu.tr

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