



Research Article

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Impact of Transformative Leadership Practices of Educational Supervisors on the Sustainable Professional Development of Mathematics Teachers

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Abstract

This study aimed to examine the impact of transformational leadership practices of educational supervisors on the sustainable professional development of mathematics teachers in the Sultanate of Oman. To achieve the objectives of the study, the descriptive approach was adopted. The study's sample were 261 mathematics teachers. The researchers used the supervisors' practice of transformational leadership scale, and the researcher's sustainable professional development scale. The validity of the content of the two scales was measured through the validity of the terms and sampling validity. The reliability of internal consistency was also measured by the Alpha Cronbach. To ensure the factorial structure of the two scales, the researchers conducted a confirmatory factor analysis of the assumed model for each scale, and for the hypothetical model, and the results showed obtaining two models that match the current study data to large extent. The researchers used Structural Equation Modeling (SEM), where the results showed a positive and significant impact of transformational leadership practices for educational supervisors on the sustainable professional development of mathematics teachers in planning, curriculum, evaluation, professional development, and teaching methods.

Keywords: Transformational Leadership, Sustainable Professional Development, Educational Supervisors, Mathematics teachers, Oman

1. Introduction

Education supervision is responsible for developing teachers' teaching skills and raising their level of performance through sustainable professional development. Heaney (2004) defined sustainable professional development as the set of activities and continuous programs that educational institutions provide to the teaching staff, with the aim of providing them with the ability to perform their functional roles within the educational institution, and improving their capabilities to overcome the problems that may face them at work.

Educational supervision has an important role in the sustainable professional development of teachers. Ahmed (2017, p. 55) summarized the roles of supervision in: a) helping teachers to develop their own capabilities and competencies to achieve educational goals, b) organizing the educational position by assisting the teacher in organizing the classroom and encouraging collaborative work, c) preparing teachers to accept change, make them feel the need for it, and encourage them to innovate and experiment, d) being aware of the problems faced by students and working to overcome them, and taking care of and following up on achievement, e) implementing in-service training courses and programs for teachers and headmasters/headmistress and providing them with updated skills, knowledge and trends, f) helping teachers to properly plan and organize their work and avoid randomness.

Despite the efforts made by the Ministry of Education in the Sultanate of Oman to improve and develop educational supervision by adopting various techniques, practically there are deficiencies on the part of educational supervisors related to the sustainable professional development of teachers. Almishaifiri (2003) showed that the degree of the educational supervisor's practice of their role in the professional development of teachers was low, and there were no differences in the development of teachers' experiences.

Despite the importance of supervision on sustainable development among all teachers, mathematics is crucial nowadays in the Sultanate of Oman as it adopted Cambridge Math curricula in the public and private schools. This new experience reinforces educational supervision roles, as teachers need continuous support on different aspects (MoE, 2018). Developing the performance of mathematics teachers consists of developing all their educational, administrative, and academic practices, developing their skills towards modern teaching methods, applying active learning strategies, using evaluation methods, and their ability to ask questions, in addition to developing competencies for planning and administrative work.

Sustainable development has many domains in educational field such as:

Planning. "Scientific planning that is characterized by creativity and innovation is one of the most prominent areas of the creative supervisor's work" (Almalool, 2017, P. 120).

Curricula are closely related to the needs of students, and the needs of society and for this reason, the curriculum and the knowledge, skills, and attitudes that students achieve are considered among the tasks of educational supervision, as the educational supervisor is primarily concerned with the renewal and development of the curriculum (Ali, 2018). The educational supervisor must have a role in formulating and developing the content of the curriculum, and be aware of the content of the textbook, in order to be able to guide and direct teachers to it (Almalool, 2017).

Evaluation. Almutairi (2019, p. 115) stated that the evaluation process must be based on scientific foundations based on validity and reliability in evaluating students scientifically and educationally.

Professional growth. The professional growth of mathematics teachers is one of the most important aspects of the educational process, and an effective tool for realizing educational goals and ensuring the achievement of these educational goals. Educational supervision is considered a crucial tool to improve the educational process, and that the teachers' success in their mission is linked to the success of educational supervision, and with the integration between the work of the educational supervisor, the work of the teacher, and the educational work being developed in the field (Almazyoud, 2015).

Teaching methods. Alruwaimi (2017, p. 199) defined the teaching method as: "The set of methods that a mathematics teacher uses in addressing the educational activity in order to achieve access to knowledge and mathematical skills in the easiest way and in the least time and with the least expenses. The successful teaching method addresses many of the deficiencies that could be in the curriculum, the textbook, the learner, or other educational problems. Mori as cited in Almutairi (2019, p. 114) indicated that teaching methods, in order to be flexible and adaptable to the conditions and capabilities available to the school, must have the most important characteristics including facilitating and organizing learning, following systematic procedures, and employing the available learning resources in the school.

Therefore, it became necessary for the mathematics teacher to have a renewed level of knowledge, information, and skills, and to see the most important developments in the teaching profession, in order to develop and improve the educational process and achieve the quality of teaching and learning. This can only be achieved through sustainable professional development for the teachers that enables them to achieve the desired goals and keep pace with the rapid changes (Alsaedi & Alsaied, 2016).

Results of the studies that investigated the impact of supervision practices on sustainable development were contradictory. Alhajri's study (2014) indicated that the degree of effectiveness of supervisory practices among the educational supervisors of the Ministry of Education in the Sultanate of Oman was high in all fields except for the areas of student guidance and counseling, and the professional and academic growth of teachers, and also consistent with the results of Almutairi's study (2019), which showed that the degree of effectiveness of the role of educational supervision on the professional development of psychosocial and skills teachers was high. In addition, Alruwaili (2010) showed that educational supervisors exercise their duties on developing the professional development of mathematics teachers in the middle stage in the areas of planning, curriculum, teaching methods, and evaluation, but it differs from what was indicated by Shalash and Harz Allah (2017) which showed that the degree of the educational supervisor's role on their development was moderate. The results of the Alharmalia study (2015) showed that the degree of effectiveness of the school as a unit for the professional development of teachers in basic education schools in the Sultanate of Oman was average in all fields. These results were inconsistent with other studies. Albadri (2014) indicated that the degree of the effectiveness of the professional development programs for post-basic teachers at the Ministry of Education in the Sultanate of Oman was weak, and the results of Alzuhairi and Alsaeed (2005) study, which showed a low role of the educational supervisor on the professional development of teachers in the field of developing their experiences. The results of Almarhobia (2014) showed that the level of school principals' practices for contemplative supervision in achieving sustainable professional development for teachers was low whereas, the results of Alsalhiya (2010) showed a weakness in the sustainable professional development programs applied for teachers.

The results of the Alajmi (2008) study also indicated that there was a discrepancy between the opinions of principals and teachers regarding most areas of professional development. Cotton (2017) found that the lack of training opportunities in the Sultanate is one of the most important obstacles to professional development, in addition to the weakness in professional development programs and in identifying training needs, and their reliance on the traditional method.

2. Problem Statement

Transformational leadership had its first appearance in (1978) by Burns Macgregor, who mentioned that the transformational leader is the leader who identifies and discovers the needs and demands of stakeholders. Abu Samra (2011, p. 265) defined transformational leadership as "Leadership that seeks to introduce positive changes in institutions, through a set of leadership ideas that focus primarily on the values of the role model, and intellectual stimulation for the sake of creativity, and encourage employees by giving them the opportunity to be creative, innovative, and participate in tasks." The results of Alobaidaniya (2020) indicated that there is an association between elements of educational supervision and the dimensions of transformational leadership, in terms of organizing supervisory work in the framework of arranging the efforts of individuals and coordinating among them in order to achieve specific goals.

Hay (2006) believes that the essence of the transformational leadership theory is represented by appealing to a set of ethical ideas and values: equality, justice, and humanity. This means that the behavior of transformational leaders is based on well-established values that called internal values, and emphasized that it is impossible to negotiate or exchange them.

The guide to educational supervision in the Sultanate of Oman (2005) stated a set of objectives,

including: 1) contributing to making educational policies and strategies necessary to achieve the desired educational development, 2) developing teachers' skills and capabilities in order to achieve professional and psychological growth. Therefore, modern educational supervision is important in developing the teachers' professional growth, improving their performance, and assisting them in any aspect that develops the educational process, especially since the modern view of education is an investment in human capital.

This study will test the hypothetical model adopted by the researcher, which derived from transformational leadership. This model also depends on the role of educational supervision in the sustainable professional development of mathematics teachers.

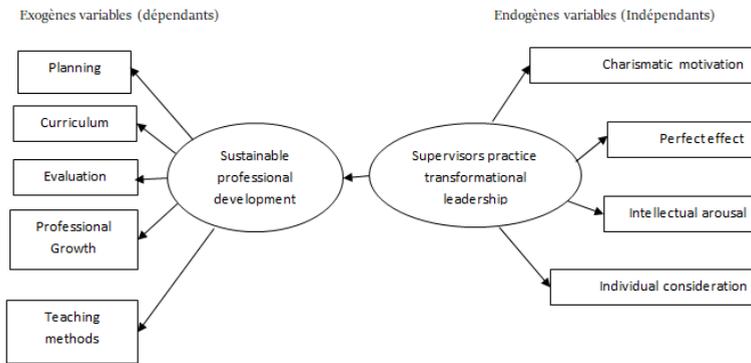


Figure 1: Study's Model

Dimensions of transformational leadership:

Bass and Avolio (2001) developed a model that includes four factors of transformational leadership: Charisma. This represents the highest level of transformational leadership, where the transformational leader acts in ways that are compatible with the subordinates, such as listening to them, providing feedback, respecting and giving guidance to them, preferring their personal needs over his/her needs, and sharing them in taking risks.

Individual consideration. The leader pays attention to the subordinates' needs, works as a coach, friend, mentor, and is concerned with the personal aspects of each individual, in order to develop them and raise their level of performance. It is concerned with empowerment as a way to develop creativity and innovation for subordinates, and follow them to identify whether they need additional guidance or evaluation. Bennis (2009) believes that a successful leader is one who listens to employees and that his intelligence lies in his ability to discover the talents of his workers, not in his personal achievements. Alaraydah (2011, p. 39) adds that the leader "must give personal attention to the subordinates who deal with them in different ways, taking into account individual considerations, as each person is treated as a separate individual, but with fairness."

Intellectual arousal. It is the leader's ability to push the intellectual and analytical efforts of workers to be creative and innovative, by making them aware of the size of the challenges facing the organization, encouraging them to adopt logical solutions to the problems facing them, and urging subordinates to present unprecedented ideas that encourage them to be creative and reconsider the facts they believe (Altuwaijri, 2017).

Inspirational motivation. The leader is a symbol of increasing employees' awareness and understanding of mutually desired goals, as his actions affect subordinates and push them to represent their steps (Alaraydah, 2011). Ali (2018, p. 152) believes that "leaders within the framework of this factor entice their subordinates and excite them with new responsibilities, and talk to them about the future with optimism. They also instill confidence in them that the goals will be achieved

and that the future tasks of the organization will be accomplished.”

3. Study Design

3.1 Methodology

This study adopted the descriptive methodology and conducted a confirmatory factor analysis to ascertain the assumed model. It also used the structural equation modeling method, which is a research method for quantitative testing of theoretical model of the effect of supervisors' practice of transformational leadership on sustainable professional development. AMOS 23 was used to test the study's hypotheses.

3.2 Sample

The study population consists of mathematics teachers (males and females) in basic education schools in Al Batinah North Governorate in the Sultanate of Oman. Their total size was 888 (432 males, 456 females), distributed over 139 schools (MoE, 2020). The study sample consisted of 265 male and female teachers, and it was selected by random cluster technique, than simple random technique to avoid differences between the schools (males and females).

3.3 Tools

The researchers provided two questionnaires: one for transformational leadership practices, and the other for sustainable development. Transformational leadership consisted of 38 items, distributed on four factors, which are: charisma 9 items, individual consideration 12 items, intellectual arousal 9 items, and inspirational motivation 8 items. Sustainable professional development consisted of 43 items, divided into five domains: planning 8 items, the curriculum 7 items, evaluation 7 items, professional growth 12 items, and teaching methods 9 items.

Both questionnaires measured their content validity (item validity and sampling validity). The internal consistency reliability by Cronbach alpha was measured for both questionnaires. The transformational leadership reliability was $\alpha = 0.97$, and sustainable development was $\alpha = 0.98$.

3.4 Data Analysis

Confirmatory factor analyses was used to verify the validity of various measures built on scientific theories and previous research. This analysis relies on agreed criteria and indicators to extract and interpret results, evaluate their quality, and judge them (Radwan, 2018). Confirmatory factor analysis aims to test how well the adopted model (the study model) matches a theory with the study data. In the analysis of this study, the researchers relied on these indicators and criteria that were extracted from the Amos statistical program. To judge the constructive validity of the two scales used, this is to determine the relationship between the latent variables and the measured variables. There are two classifications of indicators of conformity quality, which are the most widespread and common. The first is indicators of absolute conformity, through conforming the model at the general level to the proposed model, and the second is Indicators of comparative conformity, by estimating the relative improvement in conformity to the model assumed by the researcher (Tigza, 2012).

Validity can take several forms, and what is relevant to the researchers is what is known as "constructive validity," which is closely related to confirmatory factor analysis, which makes inferences on the extent to which the theoretical hypothesis is obtained by matching the scale with the study data is supported. Evidence for structural validity has two types: convergent validity and discriminant validity. Descriptive statistics of supervisors' practice of transformational leadership showed ($M = 3.97$, $SD = 0.80$), and for sustainable professional development ($M = 4.11$, $SD = 0.69$), the

results confirmed that data was normally distributed (Trochim & Donnelly, 2008).

4. Results

4.1 Results of the question one

Does the Confirmatory Factor Analysis confirm the factorial structure of the Supervisors' Practices of Transformational Leadership Scale and the Sustainable Professional Development Scale? The researchers conducted the first-order and second-order confirmatory factor analysis for the variable supervisors' practices of transformational leadership.

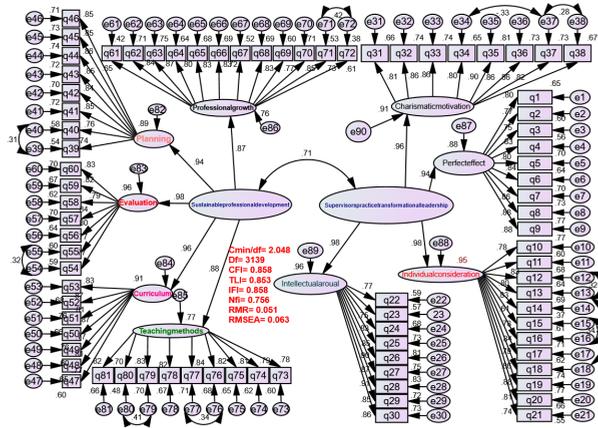
The first order CFA results of the fit indicators showed that (CMIN 1505.67, $\chi^2/df = 653$, CMIN / DF= 2.31, and since the result did not exceed five; it confirms acceptance of the actual model of the conceptual model. The results also revealed that RMSEA was 0.07, and this result indicates the consistency and quality of compatibility of the estimated construction model of the study sample data for the supervisors' practice of transformational leadership scale model. However (NFI= 0.87, CFI= 0.92, IFI=0.92, TLI= 0.92, RMR= 0.03) which shows that the conceptual model fits the study data. Observations suggest that loadings were over 0.5, and values ranged from 0.60 to 0.91. The standard error is limited to 0.04 to 0.06, which indicates that the standard error is not very small or close to zero and the calculation of the statistical function was not accurate. The results also showed that the critical value was greater than 1.96 at the significance level of $\alpha = 0.05$, which indicates that there is a correlation between the items, and they measure one factor. Based on the R² values, the measured indicators are reliable, ranging between 0.36 - 0.90z

The second-order CFA was performed to ensure the quality of the conceptual model of the second order. The results showed (CMIN= 1525.37, $\chi^2/df = 655$, CMIN/DF= 2.33). In addition, the results of the indicators analysis showed RMSEA =0.07, and this result indicates an excellent fit. The results also indicated that (NFI= 0.88, CFI= 0.92, IFI= 0.92, TLI= 0.91, RMR= 0.03). These results revealed an excellent fit between the conceptual model and the study's data. In addition, the results showed that the loadings ranged from 0.60 to 0.91, the standard error was between 0.04 and 0.07, the T-ratio exceeded 1.96 at the level of 0.05, and that all loadings were statistically significant. The R² ranged between 0.36 - 0.83, indicating good reliability of the measured indicators.

- Second: Confirmatory Factor Analysis for the Sustainable Professional Development Scale

The first-order CFA results of the fit indicators showed (CMIN= 2044.201, $\chi^2/df = 653$, CMIN/DF = 2.425), these results confirmed the acceptance of the conceptual model. (RMSEA=0.07, NFI= 0.83, CFI= 0.89, IFI= 0.89, TLI= 0.88, RMR= 0.04). The results also showed that the loadings exceeded 0.5, indicating that the item has been associated with its factor well, and the values of loadings ranged between 0.63 - 0.87. The value of the standard error was limited between 0.05 - 0.08, as this result indicates that the standard error is not very small or close to zero, so the calculation of the statistical function ends with it, and it is not close to the correct one, indicating its inaccuracy. The results also indicated that the T-percentage was greater than 1.96 at the significance level of $\alpha = 0.05$, and that all loadings were statistically significant, indicating that there is a correlation relationship between the items and they measure one factor. It was also noted that R² were limited between (zero - 1), and they ranged between 0.40 - 0.75 which indicates good reliability of the measured indicators. Second-order CFA results' showed (CMIN= 2065.62, $\chi^2/df = 848$, CMIN/DF =2.44), which is an excellent result as it was less than 5. In addition, the results of the analysis of fit indicators showed that the (RMSEA= 0.07, NFI= 0.83, CFI= 0.89, IFI =0.89, TLI= 0.88, RMR= 0.04), which indicates the quality of the conceptual model fits to the study data. It is also evident from the results that the rated loadings ranged between 0.63 - 0.87. The value of the standard error was limited between 0.05 - 0.08, while the T-percentage exceeded 1.96 at the significance level of $\alpha = 0.05$, and that all the loadings are statistically significant, which indicates the existence of a correlation between the item and its factor. The R² ranged between 0.40-0.75, which indicates the reliability of the measured indicators.

- Third: the confirmatory factor analysis of the conceptual model



The researchers used CFA for the conceptual model of the study. The results of the fit of the structural model of the study indicated that (CMIN/df= 427.428, χ^2 df= 3139, CMIN/DF =2.05), and since the result did not exceed 5; it confirmed the acceptance of the actual model of the conceptual model. The results are shown in figure 1.

In terms of the results, the analyses showed that (RMSEA= 0.06, NFI= 0.76, CFI = 0.86, IFI = 0.86, TLI= 0.85, RMR= 0.05). The results also showed that the loadings ranged between the item and its factor exceeded 0.5, which suggests that the items were associated with its factor well, and the value of the loadings ranged between 0.61 - 0.91. The value of the standard error was limited between 0.05 - 0.09, as this result shows that the standard error is not very small or close to zero. These results indicated an excellent fit between the structural model and the data. The results also indicated that the T-ratio was greater than 1.96 at the level of significance ($\alpha= 0.05$), and that all loadings are statistically significant, indicating the existence of correlations between the items, and that they measure one item. R^2 was between zero and the correct one, and they ranged between 0.37 - 0.83, which indicates the reliability of the measured indicators.

- Convergent validity

Convergent validity as evidence of structural validity showed that the loading ratios ranged between 0.61 - 0.91, the results showed that the loading ratios of charisma ranged between 0.75 - 0.88, for the individual consideration, ranged between 0.61 - 0.88, the intellectual excitement ranged between 0.75 - 0.91, the inspirational motivation between 0.80 - 0.90, for the planning factor ranged between 0.74 - 0.86, the curriculum ratios ranged between 0.77 - 0.87, the evaluation ranged between 0.77 - 0.84, for professional growth between 0.61 - 0.67, the teaching methods range between 0.70 - 0.84. In sum, that the ratios of loading of the items of the structural model of the study indicate that there are ideal correlations between the factor and its items.

As for the results of the extracted contrast, the results showed that the values of the extracted variances for the factors are (charisma= 0.68, individual consideration= 0.64, intellectual excitement= 0.71, inspirational motivation= 0.72, planning= 0.68, curriculum= 0.67, evaluation= 0.65, professional growth= 0.61, teaching methods= 0.64). In this study, the extracted variances of all factors were higher than 0.50, which indicates the model's validity is excellent.

- Discriminant validity

The results of the matrix of correlation between the variable of supervisors' practices of transformational leadership with the variable of sustainable professional development showed that the correlation coefficient between two variables was $r=0.71$. In addition, the variable of supervisors' practice of transformational leadership correlated with itself to a greater extent than with others, $r=$

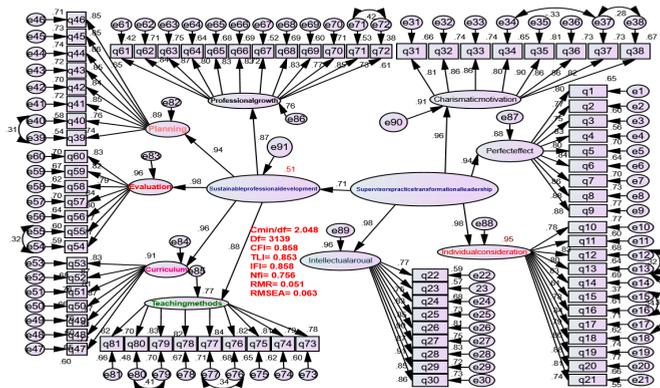
0.82, while it correlated with the variable of sustainable professional development $r = 0.71$. As well as the sustainable professional development variable, it correlated with itself greater than it correlated with others, as it correlated with itself $r = 0.80$.

Through the correlation matrix between the extracted variance and the covariance of the variables of the structural model for the study, we noted that the values of the extracted variance were higher than the covariance between the two variables, which indicates that the correlation between the items and their factors in the variable was higher than the correlation of the variables with each other. This is another evidence of discriminative validity.

The evidence of construct validity confirmed the fit between the structural model and the data, this is confirmed by the absence of evidence to contradict that, such as the absence of negative standard errors in the model, where all the standard error values were positive (Alazabi, 2012). Furthermore, all conformity indicators were high, exceeding the minimum for acceptance of this model, and the value of the most important indicator, the RMSEA = 0.06. Overall, the structural model fits well.

4.2 Results of question two

Does transformational leadership practices of educational supervisors impact the sustainable professional development of mathematics teachers?



The researchers used structural equation modeling to examine the impact and extent of the strength and trends of supervisors' practices of transformational leadership as an exogenous (independent) variable on sustainable professional development as an endogenous variable (dependent). The validity and quality of the extracted measurement models must be verified in a structural model that contains supervisors' scales of transformational leadership and sustainable professional development, according to Al Mahdi (2007). This stage was performed when verifying the validity of the measurement models by performing a confirmatory factor analysis for each scale, and at this stage, the structural equation modeling was used to ensure the fit of the model with study data. To improve the fitness of the structural model, the researchers linked standard errors between some items due to the strength of the relationships between them. Then we performed analysis again and all the results were satisfactory, and the structural model fit well with the data. As shown in figure 2, and confirms that there is no evidence to contradict this, such as the presence of negative standard errors in the model, and all the indicators' values were high and they exceeded the minimum for acceptance. The model, and the value of the most important indicators, which is the RMSEA index, was 0.06, which reveals the existence of an impact of transformational leadership practices for educational supervisors on the sustainable professional development of mathematics teachers.

The results also showed a good fit for the structural model of the study (CMIN= 6427.428, CMIN/DF= 2.048, $\chi^2/df= 3139$, CFI= 0.86, TLI= 0.85, IFI= 0.86, RMR= 0.05, RMSEA 0.06), which confirms that the model matches the study data to a large extent, and thus the model is accepted. These indicators also indicate the strength of the influence between the variables and factors of this model. The results showed the value of the standardized loadings ranged between 0.71 - 0.98, and the value of the standard error was limited between 0.05 - 0.08, explaining the extent of the impact of the sampling error on the assumed estimates from the population, and the multiple square correlation value ranged between 0.51-0.96. The results also indicated that the T-ratio between supervisors' practice of transformational leadership and sustainable professional development came to 11.41, surpassing 1.96 at the significance level of $\alpha=0.05$ and that all the loadings were statistically significant.

The results showed for multiple square correlation (R^2) between the variable supervisors' practice of transformational leadership and its four factors that the educational supervisors practice the transformational leadership dimensions in their supervisory work to a large extent. The value of the multiple square correlation (R^2) for individual consideration was 95%, intellectual arousal 96%, while charismatic motivation was 91% and charisma at 88%. The endogenous (dependent) variables were significantly affected by the corresponding exogenous (independent) variables, so the value of (R^2) for the sustainable professional development variable was 51%, meaning that the supervisors' practice of transformational leadership contributed 51% to the variation in sustainable professional development. For evaluation, the proportion was 96%, curriculum 92%, planning 89%, teaching methods 77%, professional growth 76%.

Through the results, it can be concluded that mathematics supervisors practice the transformational leadership dimensions in their supervisory work. The intellectual arousal is the most influential factor in increasing the degree of mathematics supervisors' practice of transformational leadership ($\beta= 0.99$, $t= 18.82$, $r= 0.96$), this indicates a positive relationship between the supervisors' practice of transformational leadership and intellectual arousal. The individual consideration was in the second place ($\beta= 0.97$, $t= 17.70$, $r= 0.98$), Inspirational motivation factor was in the third place ($\beta= 0.96$, $t= 17.74$, $r= 0.96$), the charisma was the least factor ($\beta =0.94$, $t =16.02$, $r=0.94$)

The results showed a positive impact of supervisors' practice of transformational leadership on sustainable professional development at a 0.05 significant level, where ($\beta = 0.71$, $t= 11.41$) which is greater than 1.96, and with a correlation coefficient $r= 0.71$. The evaluation factor was the most affected factor in sustainable professional development obtained by mathematics teachers ($\beta= 0.98$, $t= 14.46$, $r= 0.98$). The curriculum factor came in second place ($\beta= 0.96$, $t= 16.51$, $r= 0.96$). While the third place was for the planning factor ($\beta= 0.94$, $t= 16.02$, $r= 0.94$), while the teaching methods factor came in fourth place ($\beta= 0.88$, $t= 14.26$, $r= 0.88$). The last rank was for professional growth factor ($\beta =0.87$, $t= 14.67$, $r= 0.87$).

5. Discussion

According to the results obtained through the structural equation modeling analysis; it was found that the degree of educational supervisors' practice of transformational leadership factors on their supervisory work was largely achieved, and this result contradicts the result of the Alobaidaniya study (2020), which indicated that the degree of educational supervisors' practice of the transformational leadership dimensions was of a moderate degree. This finding is attributed to the role of the Ministry of Education on training new educational supervisors on sustainable professional development for educational supervisors and providing them with the necessary skills in practicing the educational supervision process, in addition to the role played by the Ministry of Education in enrolling educational supervisors in leadership training programs. Furthermore, there is an existence of a common vision between educational supervisors and mathematics teachers on the importance of transformational leadership in achieving the desired goals.

It is also evident from the results obtained through the analysis of structural equation modeling that there is a positive and statistically significant effect of supervisors' practice of transformative leadership on sustainable professional development for mathematics teachers in planning, curriculum, evaluation, professional development, and teaching methods. This result is consistent with the studies of (Alhajri, 2014; Alharmalia, 2015; Almutairi, 2019, Alruwaili, 2010; Shalash & Harz Allah, 2017), which showed that the degree of effectiveness of supervisory practices among the educational supervisors was high and moderate. It is also inconsistent with studies of (Albadri, 2014; Almarhobia, 2014; Alshahiya, 2010; Alshanfari, 2003; Alzuhairi & alsaed, 2005).

The researchers attributed the mathematics teachers' ability to plan to the educational supervisor's possession and enjoyment of leadership skills that enhance teachers' confidence on them and to benefit from their experiences in identifying and organizing educational methods and activities, taking into account the individual abilities of teachers, and keenness to clarify the goals they seek to achieve.

With regard to the curriculum, the educational supervisors' ability to analyze and plan the content of the curriculum, determine appropriate teaching methods, and their confidence in the teachers' abilities to achieve educational goals, had the effect of enabling the teachers to discuss the study plans and their relevance to the content and to overcome the challenges resulting from the implementation of the curriculum.

As for the mathematics teachers' ability to evaluate the skill, the researchers interpret this to the educational supervisor's ability to identify and choose assessment tools of all kinds, follow up on the extent to teachers employ evaluation tools, provide feedback to them individually, and provide them with all the developments of evaluation and train them on it.

The researchers believe that the educational supervisors are able to transform visions and ideas into work to activate the capabilities of teachers, accomplish tasks in a team spirit, and pay attention to training teachers according to the needs of each of them to improve their performance. The teachers are able to address their development priorities in cooperation with the supervisors, and take advantage of the training courses that meet the requirements of sustainable professional development.

As for the mathematics teachers' ability on teaching methods, the researchers attribute this to the charisma of the educational supervisors, through their abilities to persuade teachers of the necessity to learn about educational developments in the field of teaching methods, in addition to intellectual stimulation for innovation and encouragement of mathematics teachers to be innovative and to generate enthusiasm and challenge to bring about to change.

The results were interpreted as a result of the professional experience of the educational supervisors, as the Ministry of Education is currently applying new curricula (Cambridge) that require courses in curriculum content, methods, teaching methods, and evaluation methods, and this is the actual role of supervisors recently, in addition to the personal connection between supervisors and teachers after the role of the educational supervisor changed to be a guide for the teachers. Most educational supervisors have great supervisory experiences, and this deepens the communication between them and teachers. In addition, supervisors are capable of handling administrative responsibilities that require them to display some personal traits such as charisma, the ability to influence, and giving attention to psychological aspects, and this is reflect in their supervisory work.

The specialized center for the professional training for teachers plays a crucial role in developing supervision experts program, which is concerned with training educational supervisors in modern teaching methods, preparing and applying classroom situations, in addition to developing their supervisory skills, and supporting teachers in schools (Ministry of Education, 2018). In light of the new Cambridge Mathematics curriculum, training workshops were held for mathematics supervisors on how to prepare the semester plan and daily planning of educational situations, in addition to the methods of teaching sequences, assessment tools, and then transmitting the impact of training to mathematics teachers. Mathematics supervisors were also involved to a training program on formative assessment and evaluation tools, and the impact of training was transferred to teachers,

which had an impact on the evaluation being ranked first in sustainable professional development.

6. Conclusion

With reference to the contradicting findings of studies that investigated the impact of supervisions practices on sustainable development among teachers, this study adopted a conceptual model derived from the transformational theory. In the Omani context, this study is unique in the problem and statistical analysis. Nowadays ministry of education mostly considers the mathematics curriculum to improve Omani students' achievement, therefore, this study employed math teachers. The study examined the adopted conceptual framework using SEM, and results showed that the structural model fit with the study's data gathered from the Omani public schools. This means that to the extent to which Omani mathematic supervisors' practice is based on transformational leadership principles, they can affect positively the teachers' sustainable development. The study's findings will add more theoretically, due to the new environment that employed in, and practically because transformational leadership principles will add value to the role of principles that directed towards sustainable development of teachers who deal with new math curricula.

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