THE INFLUENCE OF HUMAN CAPITAL AS A NON-ECONOMIC DETERMINANT ON THE ECONOMIC GROWTH OF OMAN

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Abstract: In Oman, to reduce the dependence on oil for national income, economic activities have been pivoted to focus on non-oil sectors, and this is important for the country to be one of the most advanced countries economically. The present paper examines and measures the effectiveness of non-economic determinants of economic diversification on economic growth in Oman. The impacts of both human capital and the *Tanfeedh* programme and coupled with industrial development, on economic growth, are examined using data that is collected through a survey questionnaire. The preliminary analysis and PLS-SEM analysis indicate that the enablers of human capital to industrial development and the *Tanfeedh* Programme are the right strategic factors for Oman's progress. The findings of this study provide useful information for formulating strategies that will enhance Oman's economic diversification programme and the efficiency of human factors as the non-economic determinants. It will also provide further information on whether these results will contribute to the realignment of existing policies to promote a more favorable environment, and sustainable development in Oman.

Keywords: Human capital; Economic diversification; Economic growth; Industry development; Oman; *Tanfeedh* Programme.

1. Introduction

Volatility in oil prices has the greatest impact on the economies of exporting countries including Oman. The biggest challenge facing the Omani economy during the last period is the significant drop in global crude oil prices. The relationship between Oman's gross domestic product (GDP) growth rate is linked to oil prices and the contribution of oil to the economy. To address this total dependence on oil, the Omani government has established the National Programme for Economic Diversification to implement the economic programmes within the Ninth Five-Year Plan (2016-2020), which aims to focus on several sectors to help to divert the Omani local economy from focussing on oil and the continuous fluctuations in its prices. The implementation programme aims to raise the contribution of these sectors to the GDP of the Sultanate of Oman by benefiting from the outputs of these sectors, thus creating many job opportunities for the Omani workforce.

The quality of the *Tanfeedh* programme has been improved through the tenth five-year development plan (2021-2025), which is aimed to develop many agendas, represented in: (a) Promoting the development and sustainability of the human capital; (b) Stimulating the economic activity of the Sultanate; (c) Increasing opportunities for economic diversification; and (d) Developing the economic environment. This paper exerts that one of the best ways

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to stimulate economic growth is to expand the workforce, and development and increase in human capital is the ultimate method. This implies that workers can improve their skills, and productivity as a result of skills training, trial and error, or simply more practice (Prasetyo and Kistante, 2020). Non-economic determinants play a very important role in explaining the concept of economic diversification since economic diversification is the reflection of the economic concept.

The current and future needs of Omani youth in employment should be the focus of the Sultanate's attention under the strategy of rapid diversification of the economy, therefore, economic diversification strategies and industry development must include tens of thousands of annual jobs over the next several years. This will require labour-intensive projects to play an important role in economic diversification and development efforts (Man, 2020). This paper aims to examine the effects of one of the non-economic determinants of human capital under the agenda of economic diversification, implementation programme and industrial development, on the economic growth of the Sultanate of Oman.

2. Problem Statement

Oman is one of the GCC countries that is considered weak in the diversity of its economies, due to its almost total dependence on the production and sale of oil to other countries (Valeri, 2020). Oil boosted Oman's economy by 30.4% in September 2022 (NCSI, 2022), and with the potential of oil resources depleting, this single-source economy poses a major threat to Oman's economy. The Sultanate's complete dependence on oil has caused a major problem for the economy due to the recurring oil decline crisis, the latest of which was in 2020, which led to the exhaustion of both the domestic product and the Sultanate's financial balances. This simple dealing in the level of economic diversification can have a negative impact since the Sultanate's focus on its economic activities is linked to natural resources, and this will cause economic shocks due to the fluctuation of commodity prices and the depletion of resource stocks (Mohammed et al., 2020). In addition, Oman has established a comprehensive economic reform programme, however, this did not help development strategies achieve their overall objectives as the government budget suffered from near-chronic deficits (Hamad et al., 2021).

The Tanfeedh was established as a creative national business climate that helps Oman's economic diversification agenda. Accordingly, to improve the economic conditions of Oman, several sectors are considered as the main pillar consisting of fisheries, transport, manufacturing, tourism, mining, and logistics, and later added some other sectors during the inclusion of the *Tanfeedh* programme to Oman Vision 2040. However, their impact on promoting economic growth has not previously been objectively and officially measured by any agency. Nevertheless, there are only a few studies at present on the benefits of non-economic determinants through the *Tanfeedh* programme and its role in driving Oman's economic growth. The Sultanate of Oman is rich in a huge amount of natural, historical, and cultural treasures, in addition to the young generation, which constitutes a large percentage of its population pyramid, which makes it facing a promising future in terms of the human factor and its impact on its economy. Given the Sultanate's rich and diverse wealth of natural, historical, and cultural attractions in the Sultanate and its status as one of the safest

destinations in the MENA region, it is certainly possible for tourism and tourism jobs as part of industry development to account for 10-15 per cent of the country's GDP (Mohseni-Cheraghlou, 2020).

3. Literature Review

The literature review focuses on issues related to drivers of economic diversification that contribute to the sustainability of the country's economic growth especially in the context of Oman that are found to be scarce. Kasem and Alawin's (2019) study were limited to the enablers of the economic diversification agenda and their focus did not shift to the impact of the agenda on Oman's economic growth. Their findings found that trade, GDP per capita, and the development of industry and the workforce are the most important key enablers that can drive economic diversification. As a result of the lack of any alternative source of revenue when the price of oil falls, the Government of the Sultanate of Oman has decided to reduce its capital and current spending (Abouzzohour, 2021). According to Prasetyo and Kistanti (2020), economic growth can be in several ways, and one of them is by increasing the stock of the economy of physical capital goods, in addition to increasing the capital of the economy that tends to increase labour productivity.

Agosin et al. (2012) emphasised that countries with highly educated populations can benefit positively to promote economic diversification. Yusof's (2013) assessment of economic diversification conducted in Malaysia shows that the country used different strategies to achieve economic diversification, including a healthy business environment and an educated workforce with competitive wages. While several studies attempt to connect the impact of economic diversification on economic growth, the investigation of how other strategic factors like the *Tanfeedh* programme and industry development influence the economic growth of Oman was not clear. Kasim and Alwin (2019) point out in their study on the Diversification Index that human capital plays an essential role in the economic diversification of the GCC countries. Moreover, the non-economic determinants such as infrastructure, quality of the institution, and human capital are the ones that should be focused on as they may contribute significantly to the economic growth of the country.

The previous studies in countries outside Oman tend to support the relationship between human capital and economic diversification. Several empirical studies including Kasim and Alwin (2019) considered a negative correlation, as their empirical results showed that whenever there was an increase in human capital by 1%, there was a decrease in diversification by only 0.5399 units, an indicator indicating a more diversified economy. Their findings are consistent with those of Alameen (2016) that the main driver of economic diversification is human capital, which enhances business confidence and the growth of new business activities by creating an investment environment. Therefore, economic diversification requires increased employment opportunities in the private sector to contribute to economic prosperity. Considering the previous studies and in the context of Oman and other countries, the present study addresses the following matters;

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- The relationship between Human capital as a non-economic determinant and economic diversification
- The relationship between economic diversification and Industry development
- The relationship between economic diversification and the *Tanfeedh* programme
- The relationship between economic diversification and economic growth

4. Conceptual Framework

Figure 1 depicts the conceptual framework of the present study on the relationships between the driver of economic diversification, and economic growth.
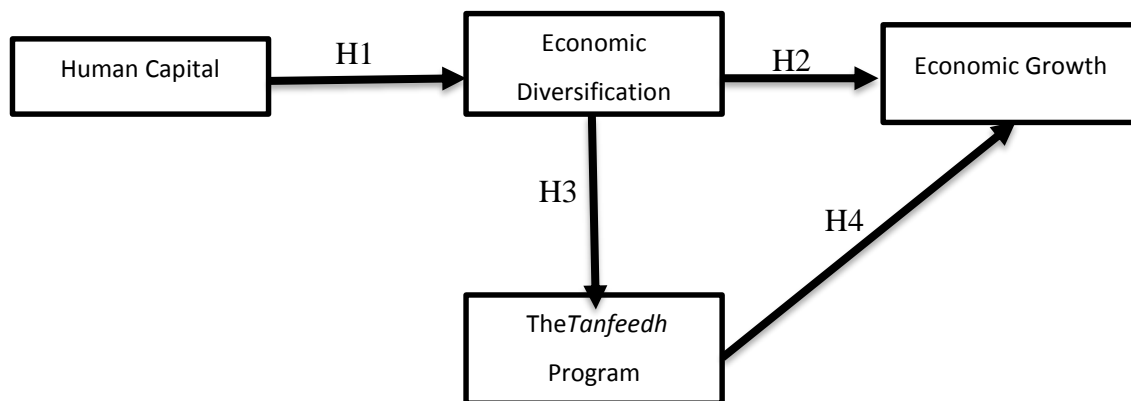

Figure 1. The Conceptual Framework of Human Capital as the determinant of Economic Growth

Based on the interrelationships between the variables or constructs in the conceptual framework in Figure 1, the following hypotheses statements are formulated.

H1: Human capital has a significant influence on economic diversification.
H2: Economic diversification has a significant influence on economic growth.
H3: Economic diversification has a significant influence on the *Tanfeedh* programme.
H4: The *Tanfeedh* programme significantly influences economic growth.

5. Method and Analysis

The main focus of this paper is to examine how the *Tanfeedh* programme mediates the influence of human capital as a non-economic determinant of economic diversification towards economic growth in Oman. Therefore, the sampling population of this study is personnel who are involved directly and have relevant knowledge and experience with the economic diversification agenda and the *Tanfeedh* programme. This research utilises an online survey to collect data that was performed during the period July 2020 and January 2021. The preliminary data analysis explains how the various data cleaning and descriptive statistics techniques work, and how they are applied to the instruments of the study. This analysis also includes Cronbach's alpha to maintain consistency. The data analysis for this pilot study was carried out by utilising SPSS software version 20.0.

Table 1 shows the structure of the questionnaire for this study. The questions are organised into five sections with four major constructs formulated based on the research objectives and the framework of this research. The analysis begins with a brief overview of the sample respondents and their responses. This is followed by diagnostic data analysis which involves checking for the normality of the data and the existence of potential outliers in the data. The summary statistics for each variable are presented and the reliability measurement of each of the variables is evaluated using Cronbach Alpha.

Table 1. Structure of Questionnaire

Part	Variables	Items
A	Demographic Profile	14
B	Drivers of Economic Diversification a) Human capital (Non-Economic Determinant)	24
C	Economic Diversification	12
D	*Tanfeedh* Programme	9
E	Economic Growth	6

5.1 Data Analysis

This study utilises Partial Least Squares (PLS) to measure the relationships between variables which is defined by the theoretical model (Hair et al., 2014). Moreover, all hypotheses between factors as well as other variables can be conducted by the same technique (Byrne, 2010). Descriptive analysis was conducted to determine the demographic information of respondents, and Cronbach alpha are conducted to determine the reliability of the instrument.

5.2 Demographic Analysis

Table 2 shows the summary of responses to the survey. A total of three hundred and eighty-five (385) questionnaires were distributed to employees from 51 different institutions comprising government agencies, and private companies. After verifying and checking all surveys, two hundred (200) which accounts for 51.9 per cent have been returned. Of the total of 200, 101 (50.5 per cent) respondents are from government agencies, and the remaining 90 (49.5 per cent) respondents are employees of private companies.

Table 2. Summary of Responses

	Total
Survey Distributed	385
Number of Responses	200
Survey Incomplete	0
Usable Surveys (Response Rate)	**200 (51.9%)**

The position, education level, managerial experience, involvement years in the *Tanfeedh* programme, types of organisations, and others are the profiles of the respondents. Table 3 shows the positions of respondents in the organisations comprising managers (44 per cent) whom they were directors, or executives, while 23 per cent of the respondents were either owners, founders, Chairman, or Chairman of companies. At the same time, 16% of respondents are general managers/senior managers. The least involved respondents in this study were those who worked as administrative/executive directors (4 per cent). This suggests that all respondents may be in a position with leadership skills to manage.

Table 3. Respondent's Position in the Organisation

Position	Percentage (%)
Manager / Executive	44.0
General/Senior Manager	16.0
Chief Executive Officer	8.5
Deputy Director/Vice President	4.5
Managing / Executive Director	4.0
Owner/Founder/Chairman/President	23.0

Regarding the length of service in the managerial position, Table 4 shows the length of the respondents' service in the managerial position. Nearly half of the respondents (54 per cent) served in less than 10 years in a managerial position in their respective organisations while there are about 17 per cent of respondents from a set of years of service with more than 21 years of managerial position. The length of service in a managerial position indicates that they may have a significant amount of experience in managing economic diversification.

Table 4. Respondents' Experience in the Managerial Position

Years of Experience	Percentage (%)
Less than 5 years	26.0
6-10 years	28.0
11-15 years	18.5
16-20 years	10.5
21 years or more	17.0

Regarding the years of experience in dealing with the National Economic Diversification Programme *Tanfeedh*, Table 5 shows that more than half of the respondents (52.3%) participated in the *Tanfeedh* programme for less than two years. While there is Approximately 42.2 per cent of respondents have dealt with the *Tanfeedh* programme for between 2 to 4 years, and 1.5 per cent have involved in the *Tanfeedh* programme for more than 4 years. This file indicates that all respondents are probably in a position to have experience in implementing, or monitoring the *Tanfeedh* programme.

Table 5. Respondents' Experience in the *Tanfeedh* Programme

Years of Experience	Percentage (%)
Less than 2 years	52.3
2 – 3 years	36.7
3 – 4 years	9.5
More than 4 years	1.5

Table 6 shows the types of organisations with which the respondents are affiliated. The results show that the majority of respondents are government employees (50.5%), while 23.5% of entrepreneurs are in Oman. There is only a small percentage of employees of state companies (9.5 per cent) and foreign companies (5.5 per cent). The place of work of the rest is not disclosed.

Table 6. Affiliation of Respondents

Types of Organisation	Percentage (%)
Government Agency	50.5
Small and Medium Enterprises (SMEs)	23.5
Government-linked Companies (GLCs)	9.5
Foreign Company	5.5
Others / Unspecified	11.0

Respondents were asked about the number of years the organisations that they are affiliated to operate. The results in Table 7 reveal that there is an equal proportion of organisations that were established in a period of 6 to 15 years and more than 25 years. The results also show that 14 per cent of the organisations were established for 16 to 25 years. Meanwhile, only a small percentage (3.5 per cent) of organisations have been in operation for less than 5 years.

Table 7. Organisations' Years of Operation

Years of Operation	Percentage (%)
Less than 3 years	3.5
3 - 5 years	3.0
6 - 15 years	22.5
16 - 25 years	14.0
More than 25 years	22.5
Others / Unspecified	34.5

The geographical location of organisations was determined by this study. Table 8 shows that the majority of organisations are located in the capital of Muscat (55 per cent). On the contrary, there is a small percentage (7 per cent) of organisations that are operated in smaller cities such as Salalah, Duqm, and Sohar. The rest of the geographical locations of the organisations are not mentioned.

Table 8. Location of Organisational Operation

Location	Percentage (%)
Muscat	55.0
Duqm	4.0
Salalah	2.0
Sohar	1.0
Others/Unspecified	38.0

The ownership structure of the organisations is divided into several types comprising organisations that are locally owned, foreign-owned, or established by local and foreign partners. Table 9 shows that almost half of the organisations (46.5 per cent) are wholly owned

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by the Omanis, while 15.5 per cent are jointly owned by the Omanis and foreign partners which accounted for only 2.5 per cent. The owners of 35.5 per cent of the remaining organisations have not been identified.

Table 9. Ownership Types of the Organisations

Ownership Types	Percentage (%)
Omanis	46.5
Non-Omanis	2.5
Both Omanis & Non-Omani	15.5
Others / Unspecified	35.5

Participants were also asked about the services and products that are offered by their organisations, their products or services, and the market in which their products/services are sold. As shown in Table 10, 26 per cent of respondents report that their organisation's products/services are localized and sold only in the local market. Conversely, organisations that targeted domestic and international markets with their products and services accounted for the largest proportion (38.5 per cent). While 35.5 per cent of respondents did not specify the direction of their product/service market.

Table 10. Products/Services Orientation

Products/Services and Market	Percentage (%)
Local / Domestic	26.0
Both Local & Export	38.5
Others / Unspecified	35.5

In terms of industry sectors, the organisations were classified into three main industries. As shown in Table 11, services sectors cover 40 per cent of the organisations and approximately 24 per cent of the organisations are in both the manufacturing and service sectors. A large part of the respondents (37%) did not specify the industrial sector their organisations belong.

Table 11. Industry Sectors

Sectors	Percentage (%)
Manufacturing	7.0
Services	39.5
Both Manufacturing & Services	16.5
Others/Unspecified	37.0

Table 12 shows that the majority of the respondents (63.8 per cent) indicated their organisations under unspecified industries. In addition, the results show that 21.6 per cent of respondents were employed in the manufacturing industry, while a small percentage of them were employed in other industries such as transportation, food, and agriculture.

Table 12. Types of Industry

Industries	Percentage (%)
Manufacturing	21.6
Transportation	4.0
Food	4.0
Agriculture	3.5
Energy	3.0
Others/Unspecified	63.8

5.3 Normality

This section presents the normality assessment results of the data. Hair et al. (2015) mentioned that the normality statistical values for skewness and kurtosis are between the value of ±3.00. Table 13 shows that the assessment of the normality of the metric variables in this study involves empirical measures of a distribution's shape characteristics (skewness and kurtosis). The standard tests of skewness and kurtosis values for all constructs are between ±3.00, which is within the acceptable range of normal distribution. Following this suggestion, the data appear to show sufficiently normal.

Table 13. Normality Assessment Result

Constructs	Skewness (±3)	Kurtosis (±3)	Normality Assumption
Human Capital	-1.849	2.999	Normal
Economic Diversification	-0.260	0.725	Normal
Tanfeedh Programme	-0.680	0.388	Normal
Economic Growth	-0.318	-0.230	Normal

5.4 PLS-SEM Analysis Results

In this study, Partial Least Squares (PLS) were used to test the model, and it provides a systematic assessment of the PLS-SEM results as recommended by Hair et al. (2019). Moreover, Henseler et al. (2016) suggest the use of SEM techniques to estimate some specific models because the techniques enable the testing of hypotheses related to the relationship of latent variables.

5.4.1 Evaluation of Reflective Measurement Model

Based on Ringle et al. (2015), a reflective measurement model is used to assess the extent to which a variable is loaded on its underlying construct. Therefore, it is recommended to use a reflective measurement model to confirm the underlying relationship of the variable with its factors (Byrne, 2010). The reflective measurement model can be validated using its reliability and validity analysis (Hair et al., 2019). The following section evaluates and examines the findings for each analysis that is used to calculate the reliability, and validity of the measurement model for this study.

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5.4.1.1 Internal Consistency Reliability

Reliability covers the dimensions of internal stability and consistency (Creswell, 2015) hence, reliability is an indicator of the measure's internal consistency, while consistency is key to understanding reliability (Zikmund et al., 2013). Composite reliability (CR) is used to measure internal consistency. The CR value ranges from 0 to 1, with a higher value indicating greater reliability. Hair et al. (2014) suggested that a CR value of 0.60 to 0.70 is considered acceptable, whereas a CR value of 0.70 and 0.90 is considered adequate. Table 14 shows that the CA values for all constructs are ranges between 0.857 and 0.892, which exceeds the 0.7 thresholds recommended by Hair et al (2014), while CR values are between 0.892 and 0.913, indicating that there is an adequate internal consistency which is greater than 0.7 as suggested by Gefen et al., (2000). As a result, the internal consistency reliability for the measurements is deemed acceptable and reliable.

Table 14. Internal Consistency Reliability Results of Initial Model

Constructs	Measurement Items	Cronbach's Alpha (CA)	Composite Reliability (CR)
Economic Diversification	C1 – C12	0.875	0.896
Tanfeedh Programme	E1 – E9	0.892	0.913
Economic Growth	F1 – F6	0.857	0.895
Non-Economic Determinants	B23 – B46	n.a.	n.a.

Note: Economic diversification, industry development, the *Tanfeedh* programme, and economic growth are 'reflective' constructs. Contrary, the non-economic determinants are 'formative' constructs (human capital). Therefore, the CA and CR are not relevant (n.a.) for this type of construct.

5.4.1.2 Indicator Reliability

The reliability indicator is determined by the magnitude of the outer loadings applied to the constructs. The value can be calculated by multiplying the square of the standardised outer loadings, also known as the communality of an item. All indicators' outer loadings should be statistically significant, with a common guideline of 0.05 level or greater than 0.707 (Chin, 1998). Table 15 presents the outer loadings, outer weights, and VIF of the human capital indicator as a formative construct or items in each of the indicators.

Table 15. Outer Loadings, Outer Weights, and Variance Inflation Factor (VIF)

Constructs	Items	Outer Loading	Outer Weight	VIF
Human Capital	B23	0.588	-0.178	4.189
	B24	0.511	0.261	1.207
	B25	0.749	0.656	2.082
	B26	0.728	0.821	3.533
	B27	0.571	0.296	4.974
	B28	0.656	-0.302	5.279
	B29	0.564	-0.169	2.730

5.4.1.3 Convergent Validity

The results of the convergent validity for the initial measurement model are shown in Table 16. The results indicate that all constructs had very high composite reliability, ranging from 0.892 to 0.913. The AVE values for all factors are greater than 0.5., and as a result, the overall item reliability, and convergent validity of the measurement items could be considered as sufficient.

Table 16. Convergent Validity Result for Measurement Model

Constructs	Measurement Items	Composite Reliability (CR[a])	AVE[b]
Economic Diversification	C1 – C12	0.922	0.704
Industry Development	D1 – D10	0.904	0.612
Tanfeedh Programme	E1 – E9	0.920	0.564
Economic Growth	F1 – F6	0.898	0.597
Non-Economic Determinants	B23 – B46	n.a.	n.a.

Note: [a] Composite Reliability: CR > 0.6 indicate adequate reliability
       [b] Average Variance Extracted: AVE ≥ 0.5 indicates convergent validity

5.4.1.4 Discriminant Validity

The discriminant validity assessment has the purpose of confirming that the reflective construct has the greatest relationship with its indicators in the PLS model (Hair et al., 2019). Table 17 describes the findings of the Fornell–Lacker criterion assessment and the correlation between constructs at the lower left triangle. The square roots of the AVE for the reflective constructs are economic diversification (0.729), the *Tanfeedh* programme (0.752), and economic growth (0.773). This finding has indicated that there exists a discriminant validity based on the Fornell-Larcker criterion.

Table 17. Fornell-Lacker Criterion Result

	Economic Diversification	Industry Development	*Tanfeedh* Programme	Economic Growth
Econ. Diversification	**0.729**			
Tanfeedh Programme	0.456	0.500	**0.752**	
Economic Growth	0.596	0.481	0.542	**0.773**

5.4.2 Evaluation of Formative Constructs (Human Capital)

This section evaluates the construct validity of the formative constructs under the categories of human capital as a non-economic determinant. The PLS-SEM algorithm estimates the outer weights of indicators, which indicate the contribution of each formative indicator to the latent variable's variance. Weights assigned to indicators are used to demonstrate construct validity. Hair et al. (2019) state that indicator weights are typically

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standardised between -1 and +1, but can be lower or higher than this, indicating an abnormal result (e.g., due to collinearity and/or small sample sizes). A relationship with a weight close to zero indicates a weak relationship, whereas relationships with a weight close to +1 (or -1) indicate strong positive (or negative) relationships. If the confidence interval for an indicator weight contains zero, then the indicator is not statistically significant and should be removed from the measurement model (Cenfetelli & Bassellier, 2009). Table 18 shows that for non-economic determinants, it can be seen that the human capital construct has only two significant indicators, which are B24 and B25. All of the VIF values are low, with none of them exceeding 5.0 (VIF < 5.0). Hence, it is self-evident that removing formative indicators with VIF values greater than 5.0 will aid in avoiding the multicollinearity issue among these indicators, which can limit serious problems in model parameter estimation.

Table 18. Outer Weights, Outer Loadings, and VIF of the Formative Construct

Constructs	Item	Outer Weight	Outer Loading	t-statistic	p-value	VIF
Human Capital	B23	-0.624	-0.188	2.276	.027**	3.004
	B24	0.589	0.663	2.450	.018**	1.078
	B25	0.858	0.589	2.644	.011**	1.719
	B26	0.115	-0.014	1.079	.286[NS]	2.357
	B29	-0.237	0.049	1.483	.144[NS]	2.799

5.4.3 Evaluation of Structural Model

Structural model assessment is used to determine whether the structural model's hypotheses are supported by the data in a particular study as suggested by Hair et al. (2017).

5.4.4 Coefficient of Determination (R)

According to Hair et al. (2014), the R^2 value ranges from 0 to 1, with higher values indicating a higher level of model predictive accuracy. However, the rules of thumb for an acceptable R^2 value are difficult to define as it is dependent on the model's complexity and the research field. Chin (1998) mentions that R^2 values of approximately 0.670, 0.333, and 0.190 for endogenous variables can be described as substantial, average, or weak, respectively. According to Hair et al. (2015), R^2 values of 0.75, 0.50, and 0.25 indicate substantial. These rules of thumb indicate that a higher R^2 value improves the structural model's predictive ability. Table 19 presents the values of R^2 and the adjusted R^2. The R^2 for economic growth was 0.446, indicating that 44.6 per cent of the variations in this construct were due to the variations in the three reflective constructs, namely economic diversification, industry development, *Tanfeedh* programme. Further, R^2 for economic diversification was 0.691, which was contributed by the variations in the formative construct namely as human capital. Meanwhile, R^2 for industry development was 0.319 and it was due to the variations in economic diversification. Finally, the R^2 value for the *Tanfeedh* programme was 0.152, contributing solely to the economic diversification.

Table 19. Coefficient of Determination (R2) Result

Constructs	R^2	Adjusted R_2
Economic Diversification	0.691	0.679
Tanfeedh Programme	0.152	0.148
Economic Growth	0.446	0.437

5.4.5 Effect Size (f ^{2})

In regards to effect size (f^2), Table 20 shows that economic diversification has a small effect size on economic growth, and a moderate effect size on the *Tanfeedh* programme of 0.131, and 0.179, respectively. Meanwhile, the effects size of industry development and the *Tanfeedh* programme on economic growth are small and moderate, respectively. In addition, for the formative construct, human capital has a moderate effect size on economic diversification.

Table 20 .Effect Sizes (f 2) Result

	Economic Diversification	Economic Growth	*Tanfeedh* Programme
Econ. Diversification		0.131	0.179
Tanfeedh Programme		0.174	
Human Capital	0.286		

5.4.6 Predictive Relevance (Q ^{2})

The Q^2 is a metric for determining the predictive relevance of the inner model and how well the model estimates missing data (Hair et al., 2019). As a result, Q^2 shows how well the empirical data can be reconstructed with the help of the model and the PLS parameters (Fornell & Cha, 1994). Finally, Table 21 reveals that the *Q^2* values for all constructs were larger than zero, indicating that economic diversification, the *Tanfeedh* programme, and economic growth have provided unequivocal support for the model's predictive relevance regarding the endogenous constructs.

Table 21. The Predictive Relevance (Q^2) Result

Constructs	SSO	SSE	Q^2 (= 1-SSE/SSO)
Economic Diversification	955.0	504.867	0.471 > 0
Economic Growth	1146.0	851.519	0.257 > 0
Industry Development	764.0	606.628	0.206 > 0
Tanfeedh Programme	1719.0	1584.821	0.078 > 0

5.4.7 Direct (Path Coefficient) Results

The path coefficients, which represent the hypothesised relationships linking the constructs, are estimated using the PLS-SEM algorithm. The values of path coefficients are standardised from -1 to +1, with coefficients closer to +1 indicating a strong positive relationship and coefficients closer to -1 indicating a strong negative relationship. Even though path coefficient values close to +1 or -1, they are statistically significant as shown in Table 22.

Table 22. The Path Coefficients of the Initial Structural Model

Hypotheses	Path Coeff.	t-stat	p-value
Human Capital → Economic Diversification	0.373	3.012	.003***
Economic Diversification → Economic Growth	0.332	5.504	.000***
Economic Diversification → Tanfeedh Programme	0.390	5.794	.000***
Tanfeedh Programme → Economic Growth	0.354	4.776	.000***

Note: *** denotes significance at 0.001 level; ** denotes significance at 0.05 level.

5.5 Analysis of Results

Table 23 reveals that the results of total effects depict that human capital as a non-economic determinant statistically significantly influences economic growth. In addition, economic diversification, and the *Tanfeedh* programme positively influence economic growth. Among these predictors, it shows that economic diversification has the strongest total effects on economic growth. The result also shows that the *Tanfeedh* programme is also an important national economic initiative by the Government of Oman in line with the economic diversification agenda. Concerning the government's aspiration, the results seem to confirm that the economic diversification agenda is the right economic strategy for the implementation of the *Tanfeedh* programme as this construct has the highest total effect on the *Tanfeedh* programme. The significant role of human capital was also evident as it creates the second-highest total effect on the *Tanfeedh* programme.

Table 23. Total Effects and Its Significance Value

Hypotheses	Total Effects	t-stat	p-value
Human Capital → Economic Growth	0.205	3.069	.002***
Economic Diversification → Economic Growth	0.549	9.969	.000***
Tanfeedh Programme → Economic Growth	0.354	4.776	.000***
Human Capital → Economic Diversification	0.373	3.012	.003***
Human Capital → Tanfeedh Programme	0.146	3.029	.003***
Economic Diversification → Tanfeedh Programme	0.390	5.794	.000***

Note: *** denotes significance at .001 level; ** denotes significance at .05 level; NS denotes not significant.

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Table 24 displays the items of the formative constructs that need to be addressed. The results clearly show that for the human capital construct, three items have been identified as the most influential. Items B25 '(abilities of individuals that help to expand their capability create a positive gain in human capital), B23 (under the economic diversification strategy, developing quality human capital is an important agenda), and B24 (Oman has a proper capital development that allows the economy to change from primary commodities towards more knowledge-intensive manufactured goods) are the most influential indicators that measure this formative construct. On the contrary, items B29 (ability to innovate new working practices/products enhances human capital) and B26 (knowledge is one of the most important factors in the development of human capital) are the least influential elements that measure the human capital construct.

Table 24. Identifying Items for Actionable Strategies for Economic Growth from Formative Constructs

Formative Constructs	Items	Loadings	Description
Human Capital ($\beta = 0.373^{**}$)	B25	0.858^{***}	− Abilities of individuals that help to expand their capability create a positive gain in human capital
	B24	0.589^{***}	− Oman has a proper capital development that allows the economy to change from primary commodities towards more knowledge-intensive manufactured goods.
	B23	-0.625^{***}	− Under the economic diversification strategy, developing quality human capital is an important agenda
	B26	0.119^{NS}	− Knowledge is one of the most important factors in the development of human capital
	B29	-0.240^{NS}	− Ability to innovate new working practices/products enhances human capital

Note: *** denotes significance at 0.001 level; ** denotes significance at 0.05 level; ^{NS} denotes not significant.

5.6 Hypotheses Testing

The path coefficients between constructs are measured to validate the proposed hypotheses which are aligned with the structural model. Hypothesis H_1 conjectures that human capital as a non-economic determinant has a significant influence on economic diversification in Oman. Next, economic diversification is predicted to significantly influence the economic growth in Oman (H_2), and the *Tanfeedh* programme (H_3) implemented by Oman's government. Results in Table 25 reveal that the economic diversification agenda in Oman positively and significantly influences its economic growth ($\beta = 0.332$, *t*-stat = 5.504, *p*-value < .05), and the *Tanfeedh* programme implementation ($\beta = 0.390$, *t*-stat = 5.794, *p*-value < .05), all are significant at 1 per cent level. These results lead to support the hypotheses H_2, H_3, and H_4. Further, this result of the path coefficient value indicates that the economic diversification agenda is the main enabler of industry development in Oman.

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Table 25. Hypotheses Testing Results

Hyp	Hypotheses Statement	Path Coefficient (β)	t-statistics	Decision
H₁	Human Capital → Economic Diversification	0.373	3.012***	Supported
H₂	Economic Diversification → Economic Growth	0.332	5.504***	Supported
H3	Economic Diversification → *Tanfeedh* Programme	0.390	5.794***	Supported
H₄	*Tanfeedh* programme → Economic Growth	0.354	4.776***	Supported

Note: *** denotes significance at .001 level; ** denotes significance at .05 level; NS denotes not significant.

6. Discussion and Conclusion

The main purpose of the current study is to identify the influence of human capital as a non-economic determinant of the economic diversification agenda, and subsequently formulate a comprehensive framework that relates several strategic factors (namely economic diversification, and the *Tanfeedh* programme) towards economic growth in Oman. The results of the influence of human capital as a non-economic determinant have a significant influence on the economic diversification agenda. Further, the result suggests that economic diversification positively influences the economic growth of Oman. The influence of economic diversification on economic growth in this study corroborates with the majority of past studies that found economic diversification is the primary driver of long-term economic growth (such as Azretbergenova & Syzdykova, 2020; Mania & Rieber, 2019). This result indicates that economic diversification presents benefits for the country such as creating employment opportunities, encouraging structural change, and nurturing economic development which finally enhances economic growth.

Human capital appears to be the most critical factor in enhancing the *Tanfeedh* programme, as it has the greatest cumulative effect on this government-led initiative. Hence, is critical for the administration of *Tanfeedh* to prioritise the development of high-quality human capital with enhanced capability and a knowledge-intensive mindset that enables the people to be innovative in manufacturing goods and services. Oman is recommended to develop and implement the National Skills System Frameworks to ensure that the skills gap is gradually reduced, which will give more opportunities to Omani unemployed youth to develop a clear career path. By constantly updating these standards and applying them in the training programmes, the requirements of supply and demand in the private sector will be linked more effectively for the graduates of educational and training institutions.

The findings of the study will be helpful for the Sultanate of Oman as a country as well as the Oman Vision 2040 Unit in reformulating the current policy that will improve the level of economic diversification of the country and the same time, delink the government revenues from oil and gas sector. To conclude, this study paves the way for future research into other economic diversification-related issues, not only in Oman but also in other GCC neighbouring countries. Given the study's success in empirically connecting all constructs, it can serve as a useful jumping-off point for further discussion using the proposed framework.

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Additionally, the study discussed the limitations encountered during the research process and made useful recommendations for future research.

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