

Scholarships, Employee Development, and University Performance: An Empirical Investigation in Saudi Arabian Universities

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ABSTRACT

This research aims to explore the link between scholarships, employee development and university performance in the Saudi Arabian universities. The study, based on the human capital approach, examines the impact of scholarship opportunities on improved university performance, and whether this impact is mediated by its effect on university employee development. A quantitative research method was used with the data being gathered from the employees of the Saudi Arabian universities by using a structured questionnaire. The analyzed collected data were examined by using the Partial Least Square Structural Equation Modelling (PLS-SEM) to evaluate the measurement model, structural model and test the proposed relationships. The empirical results show that the impact of scholarships on employee development is significant and positive, as well as the impact of scholarships on the performance of the university. In addition, employee development has a significant positive impact on university performance. The mediation analysis also shows that the effect of scholarships on university performance is partly mediated by employee development, suggesting that these interventions not only have a direct impact on the individual's educational progress but also on the overall performance of the institution through the development of employee's knowledge, skills and abilities. The results underscore the strategic significance of the role of scholarship programmes as a means of developing human capital in Saudi higher education. The findings of the study can serve as a basis for the university administrators and policymakers to enhance the performance of the university and develop human resources in the direction of Saudi Vision 2030.

Keywords: Scholarships; Employee Development; University Performance; Higher Education; Human Capital; Saudi Arabia; Saudi Vision 2030; PLS-SEM.

INTRODUCTION

The universities are very important institutions in the development of human resources, knowledge and in contributing the national economic and social development. The knowledge, skills and capabilities of both academic and administrative staff are playing an increasing role in university performance in this context. Employee development has therefore become an important strategy to enhance institutional effectiveness and competitiveness, especially in rapidly changing higher education. Human capabilities development and improving the performance of higher education in Saudi Arabia are at the heart of Saudi Vision 2030. Scholarship programmes are a major investment in human capital due to the opportunities they offer workers to earn higher degrees, gain new knowledge and skills, and enhance their professional abilities. But the organizational dimensions of the value of scholarships are not just those of education, but also those of how knowledge and skills gained are applied to employee development and enhancement of university performance. Development of employees can be a crucial bridge between scholarship opportunities and the performance of the University. Staff with higher training and professional development can contribute more to teaching, research, innovation, administration and institutional development. Although these relationships are important, there has been a scarcity of empirical research into how employee development can be said to explain the contribution of scholarship opportunities to university performance, and specifically their contribution in Saudi Arabian universities. So, this study is an empirical exploration of the relationships between: Scholarships, Employee Development and University Performance in Saudi Arabian Universities.

Specifically, it investigates the impact of scholarships on the university's performance, the impact of employee development on the university's performance, the impact of employee development on the relationship between scholarships and the university's performance, as well as the mediation of employee development in the relationship between scholarships and the performance of the university. The study makes empirical contributions to the higher education and human capital literature by examining these relationships; it also offers practical implications for university administrators and policymakers who want to ensure that all universities make the most of the returns of their scholarship programmes.

LITERATURE REVIEW

The Human Capital Theory (HCT) as developed first by Becker (1964) is suitable for analyzing the relationships between scholarships, employee development and university performance. The theory suggests that the more a country invests in education, training, knowledge and skills, the more productive the individuals will be and, therefore, the more benefits will be derived in the economic and organizational fields. A positive view of this type would view employees as valuable organizational resources, and a focus on their knowledge and competencies can lead to better productivity and enhance organizational performance. HCT is also relevant in the higher education sector, as universities rely heavily on the knowledge, expertise and research capacity of their employees, as well as their professional competencies. Scholarships are an effective investment in human capital because they offer an opportunity for an individual to receive higher education, specific knowledge, and professional skills. Employees have an opportunity to gain advanced qualifications and knowledge about new practices and knowledge through scholarship, which can enhance their skills. An HCT perspective on these investments is that they will increase the productive capacity of the individuals and result in benefits to the organizations in which they participate. Thus, scholarships can play a positive role not just in the process of individual education development but also in the development of employees, promoting their knowledge, skills and professional capacities. Employee development is an activity through which the employees enhance their knowledge, skills, competency and professional capabilities. HCT recommends that employees who have an improved knowledge base and skills are more likely to effectively carry out their responsibilities and contribute to the organization's goals. In universities, staff development can improve teaching quality, research productivity, innovation, administration competence and improve the quality of service provided to the institutions. Therefore, investing in the human capital of employees can be seen as an important means by which investment in education is translated into the value of an organisation.

The performance of a university is indicative of the extent to which a university will be able to achieve its institutional objectives and achieve effective educational, research, administration and development outcomes. The performance of the University, from an HCT point of view, is partly influenced by the quality and skills of the HR that the University has. Institutional goals can be better achieved by employees with advanced knowledge, skills and competencies. As a result, it is predicted that employee growth investment will bring about the improvement of the university performance. Understanding the relationship between scholarships, employee development, and university performance as a human capital investment process is therefore appropriate. Scholarships are avenues for staff to gain further education and information; staff education and information contribute to staff development; and staff development, in turn, can lead to better university performance. Thus, employee development can act as a mediator variable in linking scholarships to organizational benefits. The point of view is especially applicable in the case of Saudi Arabian universities, where human capital development has a strong connection with the overall goals of Saudi Vision 2030. Therefore, in the light of HCT, the present study suggests that employee development positively impacts university performance and that employee development mediates between scholarships and university performance.

Conceptual Framework of the study

This conceptual framework is based on the Human Capital Theory (HCT) which suggests that investing in the knowledge, skills and capabilities of employees can lead to better organisational outcomes. The framework looks at five factors that are independent of each other: Scholarship Programmes, Training and Development Initiatives, Leadership Support and Engagement, Resource Allocation and Organisational Culture. These are expected to positively impact the mediating variable of Employee Development. University Performance is

then expected to be better through Employee Development. The framework also explores the direct relationship between the five independent variables and University Performance to see if Employee Development fully or partially mediates between these variables.

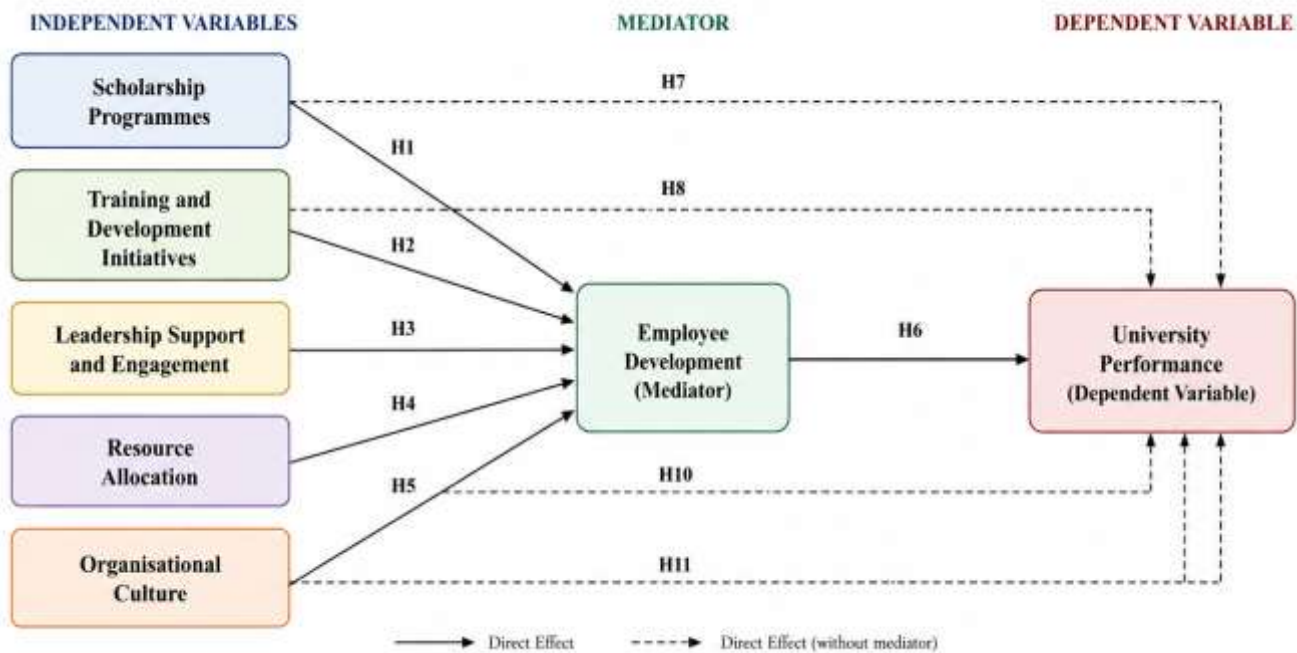


Figure 1. Conceptual framework, adapted by the authors based on Human Capital Theory (Becker, 1964; Schultz, 1961).

METHODOLOGY

Research Design

This study was of a quantitative research type that aimed at examining the relationships between the Scholarship Programmes and the Training and Development Initiatives, Leadership Support and Engagement, Resource Allocation, Organisational Culture, Employee Development, and University Performance in Saudi Arabian universities, in an empirical manner. If the relationships between the latent constructs are hypothesized and tested numerically through statistical analysis, it is best to use a quantitative method. A structured questionnaire with a 5-point Likert scaling system ranging from 1 = strongly disagree to 5 = strongly agree was used to gather the data. The questionnaire was sent to the employees of selected Saudi universities. Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to analyse the collected data. PLS-SEM can be used to study complex models with multiple latent constructs, with direct and indirect relationships such as mediation effects (Hair et al., 2022). The method also allows the researcher to determine the reliability and validity of the measurement model and then test the structural relationships between the constructs (Hair et al., 2020). The analysis then assesses the measurement model based on indicator reliability, internal consistency reliability, convergent validity, and discriminant validity, and then the structural model is assessed based on path coefficients, significance level, coefficient of determination (R^2), effect size (f^2), predictive relevance and mediation effects. This will enable the study to capture the direct effect of the five independent variables on Employee Development and University Performance as well as their indirect effects through Employee Development.

Population and sample

This study's target population included academic and administrative staff in selected universities in Saudi Arabia. The sample comprised of 62,809 university employees, comprising 31,856 academic and 30,953 administrative staff from ten universities in the main cities and regions of Saudi Arabia. The universities selected were Imam Mohammad Ibn Saud Islamic University, Imam Abdulrahman Bin Faisal University,

Umm Al-Qura University, Prince Sultan University, Taibah University, University of Jeddah, King Abdulaziz University, King Saud University, King Fahd University of Petroleum and Minerals, and Qassim University. Both academic and administrative staff are included, to reflect a broader institutional perspective because the performance of universities is reliant on that of both the academic and the professional service functions. The data on official university education statistics is also kept at the institutional level by the Saudi Ministry of Education, which is suitable for identifying higher education institutions and their manpower. The total population of 62,809 employees was used in the study, and a sample size of 382 respondents was found for the study. The respondents included academic and administrative personnel of the selected universities, especially from the major universities in the big cities of Saudi Arabia. The respondents were chosen because they were working in the selected universities and were relevant to the study which focuses on the scholarship programmes, employee development, organisational practice and university performance. The sample size is also adequate for the proposed PLS-SEM analysis. Hair et al. (2022) suggest the number of samples should not solely depend on the 10 times rule but also be based on the characteristics of the structural model and statistical power. A power analysis is recommended, to answer the question of whether a study contains enough observations to detect the hypothesized relationships. The present model consists of five predictors of Employee Development and five direct predictors of University Performance in addition to the proposed mediation paths. Hence many respondents (382) are enough to use for the evaluation of the measurement model, the structure of the model and the mediation effect of Employee Development.

Data Collection Procedure

Structured questionnaires were used to collect data by distributing them to academic and administrative personnel of the selected Saudi Arabian universities. The questionnaire was pre-tested for clarity, relevance and consistency with the objectives of the study before data collection. The questionnaire was sent out online to the eligible respondents and participation was voluntary. The respondents were briefed regarding the research project and were promised that their answers would be kept confidentially and would be for academic purposes only. The number of valid answers received for the empirical analysis was 382. The filled-out answers were initially checked for completeness before going through PLS-SEM analysis.

Measurement of Variables

A structured questionnaire was used to obtain the measurement of all constructs of the conceptual framework. The questionnaire items were modified based on the well-known instruments from existing empirical studies and were rated on a 5-point Likert scale (1= strongly disagree; 5= strongly agree). The use of Likert-type scales as measurement tools of latent constructs is common in social science research (González et al., 2024). The questionnaire assessed 7 constructs namely Scholarship Programmes, Training and Development Initiatives, Leadership Support and Engagement, Resource Allocation, Organisational Culture, Employee Development, and University Performance. There were multiple indicators for each construct, to ensure that there was sufficient representation of the concept of each construct. The measurement model was then tested for indicator reliability, internal consistency reliability, convergent validity and discriminant validity in accordance with the recommendations of Hair et al. (2022). The fourth edition of Hair et al. (2026) is the most recent methodological reference for PLS-SEM and offers new advice for measurement and mediation analysis. The academic and administrative personnel who were identified were systematically sampled. The sampling interval was predetermined until the required sample of 382 were approached. This helped to identify the participants from the sampling frame in a systematic way.

Data Analysis

The collected data were analysed using SmartPLS 4 to conduct Partial Least Squares Structural Equation Modelling (PLS-SEM). The analysis process was carried out in two phases. First, the indicator reliability, internal consistency reliability, convergent and discriminant validity of the measurement model were evaluated. Second, the structural model was analysed by assessing path coefficients, coefficient of determination (R^2), effect size (f^2), prediction significance and statistical significance. Bootstrapping was employed to evaluate the direct and indirect paths, and to determine if Employee Development was a mediator. The PLS-SEM model is suitable for the current study because it is a model with multiple latent constructs and

includes both direct and mediation relationships (Hair et al., 2024; Sarstedt & Moisesescu, 2024). Based on the PLS-SEM analysis methodology as proposed by Ringle et al. (2024), model estimation and testing of hypotheses was performed using SmartPLS 4.

Hypotheses testing result

PLS-SEM with bootstrapping in SmartPLS 4 was used to test the hypotheses. Support or rejection of each hypothesis was done based on the path coefficient (β), t , and p values; p value was considered statistical significance at $p < 0.05$. The findings show that Scholarship Programmes (SP) positively affect University Performance ($\beta = 0.288$, $t = 7.024$, $p < 0.001$), thus supporting H1. Likewise, the effect of the Training and Development Initiatives (TDI) towards University Performance ($\beta = 0.351$, $t = 9.237$, $p < 0.001$) is also significant to support the hypothesis of the research (H2). Leadership Support and Engagement (LSE) also significantly affects University Performance ($\beta = 0.106$, $t = 2.356$, $p = 0.019$) in support of H3. The results for Hypothesis 4 are similar, as Resource Allocation (RA) does not significantly influence University Performance ($\beta = 0.042$, $t = 1.135$, $p = 0.257$) and thus H4 is rejected. Interestingly, Organisational Culture (OC) has a significant but negative impact on University Performance ($\beta = -0.084$, $t = 2.625$, $p = 0.009$); and thus, the hypothesis H5 is supported although in an opposite direction. Regarding Employee Development, SP ($\beta = 0.491$, $t = 10.447$, $p < 0.001$), TDI ($\beta = 0.610$, $t = 12.200$, $p < 0.001$), LSE ($\beta = 0.308$, $t = 7.163$, $p < 0.001$), and OC ($\beta = 0.233$, $t = 5.548$, $p < 0.001$) all have significant positive effects, supporting H6, H7, H8, and H10, respectively. On the other hand, RA did not significantly impact Employee Development ($\beta = 0.007$, $t = 0.226$, $p = 0.821$), thus, H9 was not accepted. Finally, Employee Development is positively and significantly related to University Performance ($\beta = 0.729$, $t = 12.569$, $p < 0.001$), thus supporting H11 considerably. For all hypotheses, 9 are accepted and H4 and H9 are rejected. Employee Development is more strongly associated with University Performance than any other mechanism, making it a particularly important mechanism to explain University Performance.

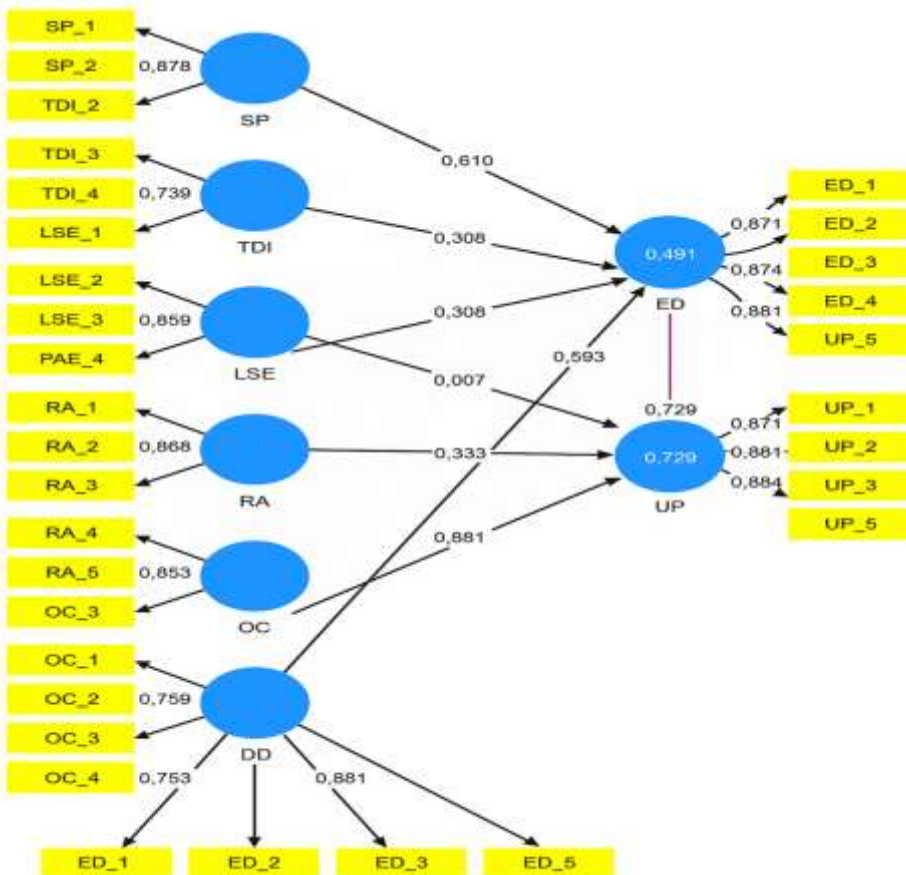


Figure 2, Structural Model Direct Effects

The results of hypothesis testing indicate that there are 9 hypotheses that are accepted and 2 hypotheses that are rejected. Scholarship Programmes, Training and Development Initiatives and Leadership Support and Engagement had a very significant impact on Employee Development and University Performance. Organisational Culture had significant impact on Employee Development and University Performance; however, it had negative impact on University Performance. Neither Employee Development nor University Performance was significantly affected by Resource Allocation. Finally, Employee Development showed a significant positive effect on University Performance ($\beta = 0.729$, $p < 0.001$), which indicates its vital role in improving the performance of the university.

Table 1.1 Result of Direct Hypothesis Testing

Hypothesis	Structural Path	β	t-value	p-value	Decision
H1	Scholarship Programmes → University Performance	0.288	7.024	<0.001	Supported
H2	Training and Development Initiatives → University Performance	0.351	9.237	<0.001	Supported
H3	Leadership Support and Engagement → University Performance	0.106	2.356	0.019	Supported
H4	Resource Allocation → University Performance	0.042	1.135	0.257	Rejected
H5	Organisational Culture → University Performance	-0.084	2.625	0.009	Supported
H6	Scholarship Programmes → Employee Development	0.491	10.447	<0.001	Supported
H7	Training and Development Initiatives → Employee Development	0.610	12.200	<0.001	Supported
H8	Leadership Support and Engagement → Employee Development	0.308	7.163	<0.001	Supported
H9	Resource Allocation → Employee Development	0.007	0.226	0.821	Rejected
H10	Organisational Culture → Employee Development	0.233	5.548	<0.001	Supported
H11	Employee Development → University Performance	0.729	12.569	<0.001	Supported

Indirect (Mediation) Hypothesis Testing

The mediation results indicate that there are five indirect relationships between independent variables and University Performance, including that of Employee Development. In all five pairs, the direct effects are significant, but the indirect effects are not, suggesting partial mediation in all cases except for the indirect effects between IV and outcomes 1 and 2. Hence, the following support for H12–H16.

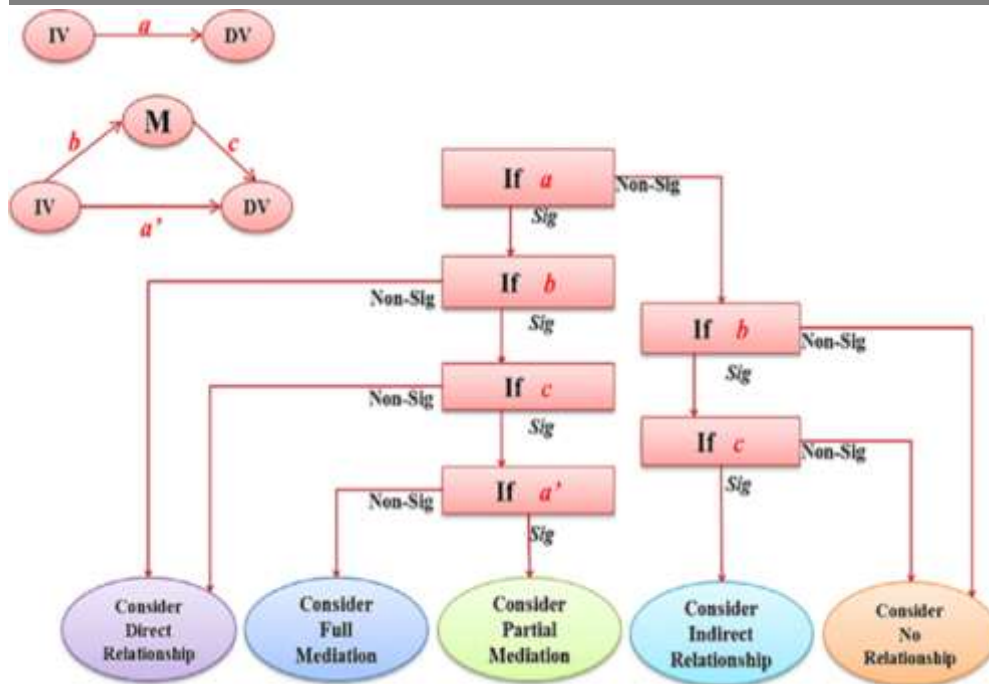


Figure 2, Structural Model Mediation

Hypothesis	Structural Path	β	t-value	p-value	Decision
H12	Scholarship Programmes → Employee Development → University Performance	0.155	—	<0.001	Supported
H13	Training and Development Initiatives → Employee Development → University Performance	0.161	—	<0.001	Supported
H14	Leadership Support and Engagement → Employee Development → University Performance	0.150	—	<0.001	Supported
H15	Resource Allocation → Employee Development → University Performance	0.124	—	<0.001	Supported
H16	Organisational Culture → Employee Development → University Performance	0.150	—	<0.001	Supported

β is the indirect effect. The results indicate that all mediation relationships are statistically significant and partially mediate as the direct effect terms remain significant following the addition of Employee Development.

FINDINGS AND RESULTS

The empirical results show that the factors discussed in this study have different impacts on Employee Development and University Performance. University Performance is positively and significantly influenced by Scholarship Programmes, Training and Development Initiatives, as well as Leadership Support and Engagement. The University Performance ($\beta = 0.351$, $p < 0.001$) have the greatest direct relationship with Training and Development Initiatives. Nevertheless, Resource Allocation significantly does not have any impact on University Performance ($\beta = 0.042$, $p = 0.257$) and Organisational Culture significantly negatively affects the University Performance ($\beta = -0.084$, $p = 0.009$). The results for the Employee Development ($\beta = 0.491$), Scholarship Programmes ($\beta = 0.610$), Leadership Support and Engagement ($\beta = 0.308$) and Organisational Culture ($\beta = 0.233$) show significant positive effects ($p < 0.001$). Employee Development is

however not significantly influenced by Resource Allocation ($\beta = 0.007$, $p = 0.821$). The best results are the significant positive correlation between Employee Development and University Performance ($\beta = 0.729$, $p < 0.001$). This shows that employee development is a factor that plays an important role in improving the performance of the university. The mediation analysis also revealed that all five pathways between the independent variables and University Performance are partially mediated by Employee Development. All indirect effects are significant ($p < 0.001$) and lie between 0.124 and 0.161. In general, 9 out of 11 direct-effect hypotheses are supported, as are all 5 indirect-effects (mediation) hypotheses. The results indicate that promoting the knowledge, skills and capabilities of employees is an effective way for organisational investment to help enhance university performance.

CONCLUSION

The study was conducted on the relationships between Scholarship Programmes, Training and Development Initiatives, Leadership Support and Engagement, Resource Allocation, Organisational Culture, Employee Development and University Performance in Saudi Arabian universities, considering the Human Capital Theory. The results reveal that investment in employees' knowledge, skills and capabilities is highly correlated with university performance. The findings indicate that Employee Development is an important mechanism, with a significant positive relationship with University Performance ($\beta = 0.729$, $p < 0.001$). Moreover, the link between all five organisational factors and University Performance are partially mediated by Employee Development. The links between the Scholarship Programmes, Training and Development Initiatives, Leadership Support and Engagement with Employee Development and University Performance are significant and positive. Organisational Culture has a positive influence on Employee Development, and a significant negative direct effect on University Performance which indicates that it requires further investigation. Overall, the results validate the Human Capital Theory by showing that workforces with higher skills can have a positive effect on institutional performance. The study also offers implications to the Saudi Arabian universities, emphasizing the need to adopt effective strategies for scholarship, training, leadership and employee development to enhance the performance of universities and to align with the Saudi Vision 2030 goals.

Suggestions for Future Research

The findings of this study can be extended by further research of larger sample size of the public and private universities in various regions of Saudi Arabia to provide a more generalisable conclusion. Other intervening factors like employee engagement, knowledge sharing, organisational commitment, innovation capability and employee performance can also be investigated to gain a better understanding of the relationship between human capital investments and university performance. Further, the role of moderating variables like leadership style, organizational support, type of the university, experience of the employee and academic position would be included to find contexts in which scholarship and development programs work best. It is important to pay attention to the unexpected negative relationship between Organisational Culture and University Performance. Organisational rigidity (or bureaucracy), resistance to change and differences between the current and desired organisational culture could be explored as potential causal factors in future studies. Follow-up studies over a period can be conducted to see if the effects of scholarships and employee development is long term. In addition, qualitative or mixed method research of the relationship that has been found in this study, involving the scholarship recipients, academic staff, administrative employees and the management of the university, could give more detailed explanations. The findings of this study could also be compared with the findings of other universities in the GCC countries, to assess whether the results are context specific or applicable to other GCC countries. The researchers can also segment scholarships by their type (domestic versus international scholarships or master's versus doctoral programmes) and identify the type of investment that has more impact on the organisation. Finally, objective university performance indicators, such as research productivity, student satisfaction, employability of graduates, accreditation scores, innovation and institutional rankings, could be added in future research. These would yield more solid evidence of the impact of scholarship and employee development programs on university performance and overall Saudi Vision 2030 goals.

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