

The impact of higher education outcomes on labor market requirements under the vision of Saudi Arabia 2030



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ABSTRACT

This study investigates the link between the qualities of the higher education outputs on the labor market requirements. From this perspective, we discussed the requirements of the labor market in line with the outputs of higher education in the universities of the Kingdom of Saudi Arabia. Indeed, vision (2030) emphasizes the harmony of education between educational institutions (colleges and deanships) with the various concerns of society and the labor market. The study performs the structural equation method to analysis the relationship between the independent variables quality of higher education outputs on the dependents variables labor market requirements explained by educational attainment and qualification, the quality of the programs offered, course development, opportunities to communicate and cooperate with the labor market, diversity of scientific disciplines, and training. An electronic questionnaire survey sent to 26 universities Saudi was performed, which we subsequently had 24 usable questionnaires. A descriptive analysis based on an exploratory and confirmatory data analysis indicates that there is an overall consensus that labor market requirements are an essential factor in accomplishing the quality of higher education outputs. The latter is explained by variables such as educational attainment, qualifications, the quality of the programs offered, the development of the training course, opportunities for communication and cooperation with the labor market, the diversity of scientific disciplines, and training. Especially, the quality of higher education outputs has associated with the quality of qualification, the appropriation of higher education outputs with labor market requirements, and improving the quality of higher education outcomes.

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1. Introduction

To develop the national economy, the government encourages the promotion of the development of high skills, creative and productive human resources, the access to programs and projects that promote investment opportunities and the generation of employment opportunities. The vision of the Kingdom of Saudi Arabia (2030) aims to transform the Saudi economy into a balanced and investment-based model. It focuses on common foundations to establish a relationship between the Kingdom of Saudi Arabia and the countries of the

world in the educational, economic, and medical fields.

According to Vision (2030), improvement and progress relate to the learning environment. This vision encompasses many of the most vital aspects of which are the establishment of a prominent education system. It symbolizes the formation of a joint association between the government and various companies to overcome the difficulties of communication worldwide. It has become clear that the importance of higher education institutions in the development of all aspects of social, economic, and political has become a crucial role in these institutions in advancing the development process in its comprehensive sense.

The low dependence of the state on oil revenues has caused the restructuring of the country's economy from an oil-based economy to an economy dependent on other non-oil resources. Saudi Arabia has staked the global economy by building an educated and multi-skilled workforce. From this

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standpoint, the Saudi government has put in place many measures that are reflected in Vision (2030) announced by His Royal Highness Prince Mohammed bin Salman. The vision of the Kingdom of Saudi Arabia (2030) is one of the important measures that led to a major economic transformation.

After the establishment of Saudi Arabia in 1932, the Vision 2030 aims to transform the challenges in the education system to ensure effective educational opportunities and to ensure the quality of higher education following international standards. As a result, higher education institutions are pursuing the goals of national transformation in parallel with the educational goals of vision. Universities have restructured the mainstream curriculum based on this vision. Through this research, the study aimed to analyze the determinants of education in achieving the goals of the vision (2030). This is done by focusing on the requirements of the labor market and its suitability for higher education outcomes in Saudi universities. We will outline the proposals that will guide us in our contribution and based on the objectives of the educational vision for educational development that stimulates positive change by building qualified human resources to meet the requirements of the labor market.

2. Literature review

Theoretical studies and realistic experiences of developed and developing countries alike point to the leading role that knowledge and education play in raising economic growth rates and thus achieving the major economic and social goals such as employment, fighting poverty, and equitable distribution of wealth. In this regard, the World Bank reports indicate the role of educational investment in human resources development in general and in increasing economic growth rates in particular.

Several other studies have also pointed to the effective role of education in driving development in both developed and developing countries. Yusuf (2017) touched upon qualitative research design to evaluate the changes required in the curricula of Saudi universities to meet the requirements of Vision 2030. Yusuf's (2017) findings also revealed that some barriers might adversely affect the implementation of Vision 2030 in Saudi Arabia. The researcher recommended vigorous attention to this topic in future research studies and their application in various other educational fields. Pavan (2016) attempted to answer three questions about the challenges posed by Saudi society through recent developments in higher education policies in the Kingdom. Pavan (2016) addressed several questions that concern the reality of higher education in line with religious values and heritage in Saudi Arabia. The researcher was also interested in the possibility of the vision (2030) for education to be compatible with globalization and respect for traditions, culture, and beliefs. Pavan (2016) examined the impact of the current rapid development of higher education in Saudi Arabia on social change in the country.

The results of the Pavan (2016) study showed that higher education in Saudi Arabia is part of the development strategy adopted by Saudi Arabia according to religious values and heritage. The results also showed that the Kingdom is making tremendous efforts to improve the professional competence of Saudi youth and their ability to engage internationally, demonstrating that the nation can and must do more in terms of economic and human development. For the study of Alsharari (2019), the author aims to explore the challenges and achievements of the development and vision reforms (2030) in the higher education system in Saudi Arabia in the field of technological progress. The study of Alyami (2014) focused on the need to study the development of study programs on the basis that they are an innovation of educational policy. The researcher studies the impact of educational policy development on practice within schools. Pavan (2016) proposed a new perspective in the Search for education in Saudi Arabia and presented some facts and figures about new developments in the Saudi higher education system.

Alsharari (2019) mentioned, in particular, the current experiences of higher education students and technical staff in the Kingdom. The study confirmed that transformational initiatives in higher education are an opportunity for the Saudi community to achieve achievement for all students regardless of gender, social or economic status, or regional affiliations and to maintain fair distribution resources dedicated to improving all Saudi students in higher education. Besides, Pavan (2016) explained how past, current, and future policies in education in Saudi Arabia Education as a matter of paramount importance. Pavan (2016) concluded that Saudi society is rapidly becoming a knowledge society.

Alamri (2011) provided an overview of higher education in Saudi Arabia. And the author addresses the strengths and weaknesses of the higher education system in Saudi Arabia. The implications for faculty, in general, are also discussed.

In the same context, Smith and Abouammoh (2013) focused on the Saudi higher education system from a critical perspective. This study provides an overview of the development of the system, challenges, education requirements, and response to these challenges, and it provides many suggestions that stimulate the development of higher education. The researchers condemned the global and common challenges faced by higher education imposed by social and economic factors. And they reported three challenges: limiting places, depleting resources, and quality measures. Alshuwaikhat et al. (2016) interested in an assessment of different public sector universities of Saudi Arabia based on five components. But, Aldiab et al. (2017) focused on higher education in Saudi Arabia, in particular, the advantages and advances which are occurring in this country in terms of eLearning.

For the international context, we cite the study of Yang et al. (2016), de Matas et al. (2016), Bird and Allen (1989), Greitzer et al. (2010), Mumuni et al.

(2016), Parpala and Lindblom-Ylänne (2007), Kember (1997), Chaves et al. (2016), and Al-Tabbaa and Ankrah (2016).

Yang et al. (2016) highlighted the importance of training programs for graduates, as essential tools for competition and survival in the workplace and labor market. Similarly, de Matas et al. (2016) stressed that training programs play a critical role in polishing graduates' talents and preparing them for the competitive job market. Enhancing practical skills through workshops, training programs, as well as through the university curriculum can make positive changes in the quality of the graduates and effectively contribute to the development of the human resources required for social development and the marketplace. Universities are some of the most important institutions in society. They are the primary source of knowledge and expertise, primarily embedded in the resources of faculty (Bird and Allen, 1989).

Greitzer et al. (2010) provided the consulting services through a wide range of methods, including research cooperation, partnerships, joint projects, formal networking, business contracts, and the mobility and exchange of researchers between academia and public and private organizations.

For Mumuni et al. (2016), this curriculum has to be selected and prepared by highly trained professionals and experts who have flexibility in the selection of contemporary knowledge. This requires educational institutions to consider the cultural differentiation and appreciation between the different social groups to spread the benefits to all social and economic sectors. Innovative sets of concepts, creative ideas, practical skills, as well as social capital and inquiry value chains can effectively strengthen the educational outcomes and align it with the real requirements for social and economic development.

The scientific project is represented by the commitment of the concerned academic institution (academic department, research unit, or research lab) in an in-depth study for the sake of explaining a certain phenomenon and benefitting from it using a clear plan in all steps of the research. Parpala and Lindblom-Ylänne (2007) saw high-quality education as a matter of the interaction between research and teaching efforts represented by scientific projects reflecting the commitment of the concerned academic institution (academic department, research unit or research lab).

Also, Kember (1997) characterized research efforts as teacher-centered/content-oriented and student-centered/learning-oriented, which both are integrated into one pool reflecting innovative efforts that are related to measures of the quality of student learning and higher educational outcome.

Finally, for Al-Tabbaa and Ankrah (2016), Conferences and seminars were important tools in providing knowledge exchange and reducing differences between sciences and research results (Chaves et al., 2016). They create the most suitable

atmosphere for discussions on issues that cannot be handled solely in the university.

3. Empirical analysis

3.1. Data and methodology

We conducted a field investigation, adopting the technique of investigation based on an electronic questionnaire. We surveyed a sample of 26 universities in Saudi Arabia through an exploratory pre-survey, we excluded from our basic sample 2 questionnaires, and we have 24 questionnaires. In total, the response rate was 92.31%.

3.2. Research model

Our research model is composed of the different causal relationships between labor market needs and the quality of higher education output.

Variables in the research model are seven in number:

- Educational attainment and qualification
- The quality of the programs offered
- Courses development
- Opportunities to communicate and cooperate with the labor market
- Diversity of scientific disciplines
- Training
- Quality of higher education output

These variables can be operationalized with various items formulated as questions. They have collected on a Likert scale 5 points (ranging from "disagree" to "strongly agree"). The quality of the measurement scales used is provided by two successive optimizations. First, a factor analysis of type PCA (Principal Component Analysis) was performed to verify the validity of the scales and thus confirm the sought after factors.

The second phase of optimization scales is a confirmatory structural analysis performed with the AMOS software. Structural equation modeling is used to test the research proposal.

Finally, we detailed the results of the fit of the structural model with the empirical data, based on the indices of modifications suggested by the AMOS software.

In this context, three steps are necessary to adjust the measurement models confirmatory factor analysis, reliability test, and estimation of the validity of the measurements. During the exploratory phase, the reliability of the measurement scales was tested using the Cronbach Alpha Index.

3.3. Sample and data collection

The sample of this research is composed of 26 Saudi universities (Table 1). Subsequently, the data are collected through a pre-established electronic

questionnaire and sent to 26 universities located in Saudi Arabia.

3.4. Overview of the Saudi Arabia universities

The statistics presented in tables disclose the descriptive number of students in Saudi universities. These statistics are collected during the year 2018 from the website department of education in Saudi Arabia.

In fact, since 2018, we have a total of (2.239.085) students in all the Saudi universities (public, private,

and other institutions), which are composed of three categories; Graduates, actives, and new entrants.

The data displayed in [Table 1](#) show that we have (1.847.978) students in public universities. This last is delimited by (212.981) graduates students in 2018, (1.385.620) actives, and (249.377) new entrants students. Also, we note the significant weight of public universities compared to other private institutions. The average level of the public universities is (82.53%) while the average of the private universities and colleges and other higher education institutions (17.47%).

Table 1: Number of students in Saudi universities (2018)

Universities	Graduates	Active	New Entrants	Total
Public universities	212981	1385620	249377	1847978
Private Universities and Colleges	10209	78579	13284	102072
Other higher education institutions	33173	156292	99570	289035
Total	256363	1620491	362231	2239085

As for the data in [Table 2](#), we remark a total of graduates in 2018 equal to (212981) with a percentage of (86.66%) for the bachelor's degree, (9.31%) for the intermediate diploma, and (4.03%) for the postgraduate.

Table 2: Number of student's graduates in public universities (2018)

School Grade	Intermediate Diploma	Bachelor	Postgraduate	Total
Student Number	19823	184569	8589	212981
Percent age	9.31%	86.66%	4.03%	

[Table 3](#) shows the number of students in Saudi universities by field of study in public universities. The results advanced a high percentage for the field of study: Business, Management and Law with a percentage (28.617%), Arts and Humanities (24.388%), Education (9.759%), Natural sciences, mathematics and statistics (8.959%), and Agriculture, forestry, fisheries and veterinary (7.549%) The others field of study are with a low percentage such as information and Communication Technology (3.016%) and Health and well-being (0.520%).

Table 3: Number of students in Saudi universities by field of study in public universities

Field of study	Students	Percentage
Education	180335	9.759%
Arts and Humanities	450691	24.388%
Social Sciences, Journalism and Media	103	0.006%
Business, Management, and Law	528838	28.617%
Natural sciences, mathematics, and statistics	165558	8.959%
Information and Communication Technology	55741	3.016%
Engineering, manufacturing, and construction	6332	0.343%
Agriculture, forestry, fisheries and veterinary	139495	7.549%
Health and well-being	9604	0.520%
Services	2206	0.119%
Total	1847978	100%

4. Results and discussion

This section of the study aimed at investigating the nature of the relationships between quality of higher education outputs as an independent variable and the six dependent variables of labor market requirements (Educational attainment and qualification, the quality of the programs offered, course development, opportunities to communicate and cooperate with the labor market, diversity of scientific disciplines, and training) at the Saudi universities. To examine the determinants of education in achieving the goals of the vision (2030), we perform the model of structural equation (SEM).

4.1. Descriptive statistics

The results of the descriptive statistics of the variable quality of higher education outputs are in

[Table 4](#). The results of the analysis showed that all respondents strongly agreed on all axes in calculating the lack of variance at average rates. Also, the results show high quality, with the center-weighted for each axis = or > 3. On the same side, the results indicated that the third axis; Improving the quality of higher education outcomes, manifested the highest quality among the rest of the axes, reaching the arithmetic mean weighted of (4.06) and a coefficient of variation of (25.91). For the first axis; Quality of qualification had an arithmetic mean of (2.97) and a coefficient of variation of (30.46). Finally, the second axis, with a mean of (3.010) and a weighted coefficient of variation (33.91).

4.2. Confirmatory analysis results

The estimation was performed iteratively using the method of maximum likelihood, which is

advocated by default as the best of the methods tested. The level of fit of the model was evaluated by the chi-square statistic (χ^2), which is considered adequate when the p-value associated with (χ^2) is

greater than 5%. This condition was satisfied with our model measure; the p-value associated with (χ^2) obtained was equal to (0,065).

Table 4: Results of descriptive statistics

Quality of higher education outputs	Mean	Standard deviation	Coefficient of variation	T-Test
Quality of qualification	2.97	0.92	30.46	3.47
Appropriate higher education outputs with labor market requirements	3.01	1.02	33.91	1.69
Improving the quality of higher education outcomes	4.06	0.90	25.91	-0.81

The χ^2 is often supplemented by various ad hoc fit indices that are more practical and robust to indicate how well the model explains the data. In this perspective, the authors can use statistical indicators GFI (Goodness of Fit), the RMR (Root Mean Square Residual), as well as other comparators such as AIC (Akaike Information Criterion) Correlation analysis results.

After testing the model using structural equations, it appeared that the conditions tested model to fit the data is generally observed: The associated p-value equals (0.056), which is greater than (0.005). GFI coefficient is higher than the norm (0.9), the GFI=0.983. This value reflects a good "fit" between model and data. At this level, our two research hypotheses and our overall hypothesis can

be broadly adopted. Besides, the RMR index (in terms of residual variance, that is to say, unexplained variance) is shallow, and it is equal to 0.035. Side indices to judge the quality of fit of the model, such as the CFI is equal to 0.993. The RMSEA is equal to 0.045; AIC is equal to (120,047) strictly less than the saturated model (139,014). The values of χ^2 (137,083) and CFI (0.993) estimated by AMOS indicate that the level of overall fit of the model is very high, confirming the unidimensionality of alignment and performance. We can, therefore, conclude that the fit of the proposed model is acceptable according to the results, indices assessment used. The results are provided in [Table 5](#).

Table 5: Structural equation results

The goodness of fit index	Acceptability threshold	Value found
χ^2 (p-value associated)	p must be > 0.05 do not reject the model	34.064
χ^2 / DDL		P=0.053
GFI	>0.9	0.978
TLI	>0.9	0.997
CFI	>0.9	0.993
RMR	<0.08	0.045
RMSEA	<0.08 and possibly <0.06	0.053
CAIC model tested		137.083
CAIC saturated model	CAIC model tested must be lower than the saturated model/independence ²	139.014

The results in [Table 5](#) indicate that there is a positive relationship between quality of higher education outputs and the labor market requirements (Educational attainment and qualification, the quality of the programs offered, course development, opportunities to communicate and cooperate with the labor market, diversity of scientific disciplines, and training) at the Saudi universities. The output states of AMOS show that all the coefficients' regression is significant; the student's test (R.C.) is greater than 1.96 for all the variables of the model. This confirms that the overall model is acceptable.

Through the results of the analysis demonstrated the importance of the quality of higher education in the public and business development and the role of innovation as a determinant of it.

The results of the structural and principal component analyses indicate the existence of a positive relationship between innovation and higher education quality indicators. In a broader sense, these results confirm that innovation is an essential factor in interpreting the quality of higher education. This is clear from the finding of this study. The

results of the study can be summarized as follows: There is full agreement in the views of respondents (Faculty) about the quality of higher education outputs, the appropriate outputs of higher education to the labor market, and the role of improving the quality of higher education outputs for achieving the vision 2030 objectives.

5. Conclusion

A descriptive analysis based on exploratory and confirmatory data analysis of (24) Saudi universities among (26) universities. The objective of the study is the evaluation of the influence of the quality of the higher education output on the labor market requirements.

The results have revealed that educational attainment and qualification, the quality of the programs offered, course development, opportunities to communicate and cooperate with the labor market, diversity of scientific disciplines, and training play a role in improving the quality of higher education in Saudi Arabia. The qualification of

the graduate's students exerts a positive relationship with the labor market requirements. A structural equations analysis with indices of structural adjustment and parsimonies supports the overall finding, based on the parallelisms in the analyses of the results of the training programs, educational attainment and qualification, the quality of the programs offered, course development, opportunities to communicate and cooperate with the labor market, diversity of scientific disciplines.

However, the study also shows that the labor market requirements are explained and associated with the quality of qualification, appropriate higher education outputs with labor market requirements, and improving the quality of higher education outcomes.

This last, interact positively and simultaneously with the objective of the vision (2030).

Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

References

- Alamri M (2011). Higher education in Saudi Arabia. *Journal of Higher Education Theory and Practice*, 11(4): 88-91.
- Aldiab A, Chowdhury H, Kootsookos A, and Alam F (2017). Prospect of eLearning in higher education sectors of Saudi Arabia: A review. *Energy Procedia*, 110: 574-580. <https://doi.org/10.1016/j.egypro.2017.03.187>
- Alsharari A (2019). Achieving the 2030 vision tatweer higher education policies in the Kingdom of Saudi Arabia: Challenges and accomplishments in the higher education information technology infrastructure. Ph.D. Dissertation, Clark Atlanta University, Atlanta, Georgia, USA.
- Alshuwaikhat HM, Adenle YA, and Saghir B (2016). Sustainability assessment of higher education institutions in Saudi Arabia. *Sustainability*, 8(8): 750. <https://doi.org/10.3390/su8080750>
- Al-Tabbaa O and Ankrah S (2016). Social capital to facilitate 'engineered' university-industry collaboration for technology transfer: A dynamic perspective. *Technological Forecasting and Social Change*, 104: 1-15. <https://doi.org/10.1016/j.techfore.2015.11.027>
- Alyami RH (2014). Educational reform in the Kingdom of Saudi Arabia: Tatweer schools as a unit of development. *Literacy Information and Computer Education Journal*, 5(2): 1424-1433. <https://doi.org/10.20533/licej.2040.2589.2014.0202>
- Bird BJ and Allen DN (1989). Faculty entrepreneurship in research university environments. *The Journal of Higher Education*, 60(5): 583-596. <https://doi.org/10.1080/00221546.1989.11775064>
- Chaves CV, RAPInI MS, Suzigan W, Fernandes AC, Domingues E, and Martins Carvalho SS (2016). The contribution of universities and research institutes to Brazilian innovation system. *Innovation and Development*, 6(1): 31-50. <https://doi.org/10.1080/2157930X.2015.1056401>
- de Matas M, De Beer T, Folestad S, Ketolainen J, Lindén H, Lopes JA, and Rantanen J (2016). Strategic framework for education and training in quality by design (QbD) and process analytical technology (PAT). *European Journal of Pharmaceutical Sciences*, 90: 2-7. <https://doi.org/10.1016/j.ejps.2016.04.024> PMID:27112991
- Greitzer EM, Pertuze JA, Calder ES, and Lucas WA (2010). Best practices for industry-university collaboration. *MIT Sloan Management Review*, 51(4): 83-90.
- Kember D (1997). A reconceptualisation of the research into university academics' conceptions of teaching. *Learning and Instruction*, 7(3): 255-275. [https://doi.org/10.1016/S0959-4752\(96\)00028-X](https://doi.org/10.1016/S0959-4752(96)00028-X)
- Mumuni E, Kaliannan M, and O'Reilly P (2016). Approaches for scientific collaboration and interactions in complex research projects under disciplinary influence. *The Journal of Developing Areas*, 50(5): 383-391. <https://doi.org/10.1353/jda.2016.0064>
- Parpala A and Lindblom-Ylänne S (2007). University teachers' conceptions of good teaching in the units of high-quality education. *Studies in Educational Evaluation*, 33(3-4): 355-370. <https://doi.org/10.1016/j.stueduc.2007.07.009>
- Pavan A (2016). Higher education in Saudi Arabia: Rooted in heritage and values, aspiring to progress. *International Research in Higher Education*, 1(1): 91-100. <https://doi.org/10.5430/irhe.v1n1p91>
- Smith L and Abouammoh A (2013). Higher education in Saudi Arabia: Conclusions. In: Smith L and Abouammoh A (eds.), *Higher education in Saudi Arabia*: 181-190. Springer, Dordrecht, Netherlands. <https://doi.org/10.1007/978-94-007-6321-0>
- Yang R, Liu X, Wang R, Zhu H, and Du Y (2016). Research on core competence training of command type graduates. In the *International Conference on Man-Machine-Environment System Engineering*, Springer, Xi'an, China: 61-71. https://doi.org/10.1007/978-981-10-2323-1_8
- Yusuf N (2017). Changes required in Saudi universities curriculum to meet the demands of 2030 vision. *International Journal of Economics and Finance*, 9(9): 111-116. <https://doi.org/10.5539/ijef.v9n9p111>