Research and Trends in Global Accounting Education: A Prediction Model for Ranking to Universities

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Abstract

The main purpose of this study is measure score for ranking universities globally. The study has proceeded for data collection through relevant websites. The study is based on 322 universities in the area of accounting and finance from 51 countries across the world for a period of two years 2021 and 2022. Certain criteria like institution's international reputation (academic and employer) and research impact were identified to measure the score. The data were examined using descriptive statistical methods and regression analysis. Neural network technique has been used for prediction purpose.

The study aims to know the impact of quality of research and institution reputation on the score and the ranking of a university at global level. The main objective of the study is to predict a most suitable model to rank the universities. To find the most suitable weighted proportionate, 5 models have been applied. It is found that model 2 is the best with highest explanation capacity where weightage of variables has been taken in academic reputation= 40%, employer reputation=40% and citation=10%.

Keywords: Accounting education, global universities, professional bodies, trend and prediction.

Introduction

Accounting education holds a unique position as the foundation of economic units and the reflective mirror of financial and economic performance. The majority of developing nations' educational systems including higher education system in accounting faces numerous difficulties in today's world of accelerated scientific and technical advancement.[1] Accounting is a crucial field that has grown in significance throughout time, not just for professionals but also for other players in the economy including teachers, regulators, students and many more. The financial sector is evolving at such a rapid pace that it is crucial for accounting education to keep up. It has been vital to give these students with the necessary current information and education tailored to needs of the financial sector because graduate students with accounting professions are one of the key resources of jobs related to accounting area.

Professional bodies in the area of accounting at global: Chartered accountants were the first accountants to form a professional accounting body, initially established in Scotland in 1854. They also offer opportunities for professional networking, career and business development. Chartered Accountants Worldwide comprises of 15 institutes with over 1.8 million Chartered Accountants and students in 190 nations.

Accounting journals and research in the area of accounting: Chart 2 shows the list of ranking of 183 Scopus based accounting journals. The journals have been ranked on the basis of their citation and documents during the year 2018-21.

Chart 1: Chartered Accountants across the world
(Source https://charteredaccountantsworldwide.com)

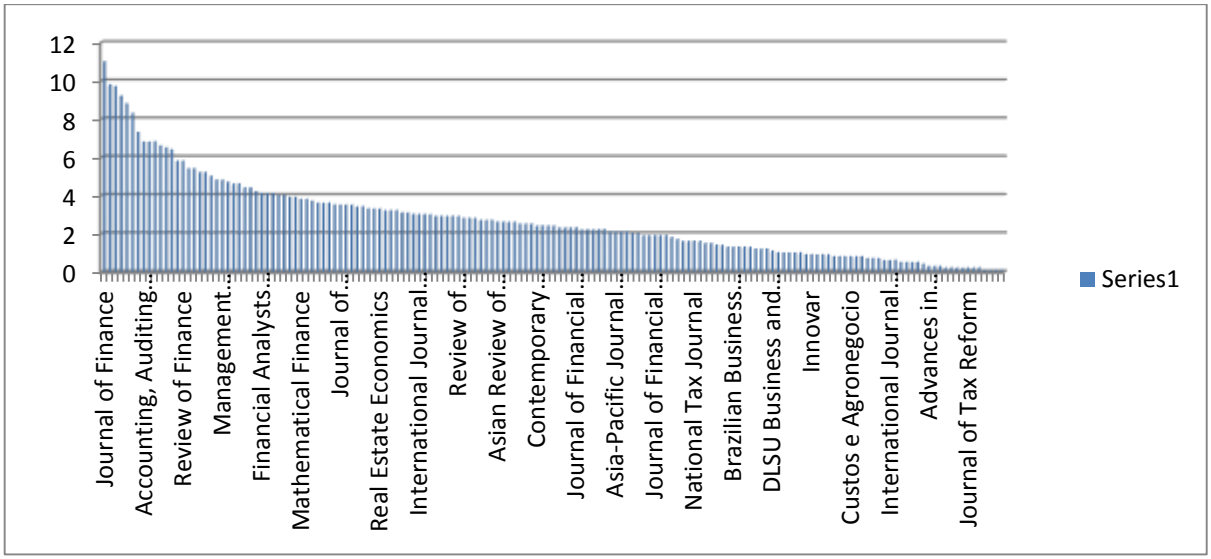

Chart 2: High quality journals in the area of accounting at Global level (Source- own prepared on the data based on scopus.com)

Journal of Finance, Review of Financial Studies, Journal of Financial Economics, Journal of Technology Transfer, International Journal of Accounting Information Systems, Journal of Accounting and Economics, British Accounting Review, Accounting, Auditing and Accountability Journal, Journal of Accounting Research, Work, Employment and Society are in the list of top 10 ranking of accounting journals with score of 11, 9.8, 9.7, 9.2, 8.8, 8.3, 7.3, 6.8, 6.8 and 6.8 respectively.

Review of Literature

The review of literature was done for finding research gap. Research papers published in international journals, books, magazines have been studied for knowing the existing work done.

Review regarding accounting education and system:

The study focused on accounting education and examined how International Education Standards are perceived and valued by member bodies and academics in three counties: Australia, Japan and Sri Lanka. It investigated IES awareness levels, factors impacting IES adoption and drivers of IES compliance, convergence and non-compliance. The study produced thorough case studies of the accounting education systems in Australia, Japan and Sri Lanka. This model is suggested as a means to let interested parties quickly identify their own distinctive system of professional accounting education in any country.[16]

This main objective is to present a contextual examination of South Africa's (SA) professional accounting education system before comparing it to analogous case studies from Australia, Japan and Sri Lanka. Using data triangulation, information regarding the SA accounting education system is contextualised from many sources. The use of the Global Model of Accounting Education highlights the distinctiveness of the SA accounting education system and identifies commonalities throughout the global accounting landscape. The development of an accounting education system that adheres to the International Education Standards is demonstrated by this study.[8]

This study aims to map the existing accounting ethics education literature and pays more attention to the early stages of dealing with the waves of de-stressing and the recurrent financial scandals in the Covid-19 setting. In order to prevent making the same mistakes again, the study's findings serve to paint a comprehensive picture of accounting ethics education patterns and trends. Additionally, by offering fruitful and essential paths for future research in the post-pandemic environment, these results indicate prospective future routes to fill the current literature gap. Additionally, it offers comprehensive and multifaceted suggestions for revising the teaching of accounting ethics.[9]

This study explores the responses to it in accounting education across 45 different nations, a collection of individual perspectives from 66 contributors on the influence of COVID-19. There are many positive outcomes such as the opportunity to realign learning and teaching strategies away from the comfort of traditional formats, but many more that are negative, primarily related to the impact on faculty and student health and well-being and the accompanying stress. It also reveals a commonality of issues and variability in responses. It identifies problems that must be solved during the crisis management's recovery and redesign phases and establishes a new study agenda for accounting education studies.[12]

R**eview regarding Accounting literature:** Many eminent academics have asserted that research presented in the leading accounting publications has plateaued. These writers point out that the fact that much of the study is related to a small number of themes, employs comparable research techniques and is generally based on the same underlying

theories is indicative of research stagnation. We present some recommendations for resolving this issue and advancing the literature, as well as data from the literature to demonstrate that accounting education research has stalled.

The research analyses the fundamental evolution of Russian higher accounting education from 1917 to 2014, drawing on the literature on institutional logics. Three significant additions to the accounting literature are made by this study.

In the context of a post-communist nation, the study defines westernisation as the spread of professional and market logics into a sector that has historically been dominated by the state. By describing how institutional logics change in light of the macro changes in the institutional substances, the study adds to the body of institutional research on the development of accounting education and the profession. In the last, research describes the roles that discourses, rhetorical defences and institutional vocabularies had in the transformation in accounting education.[6]

Review regarding Classroom teaching: The main goal of accounting education is to impart knowledge to students. This study explores the potential benefits of student engagement in classroom activities for the advancement of accounting education. It specifically examines the hypothesis that effective learning occurs when students actively participate in board game activities in basic accounting courses. Several important findings were made. First, students' perceptions of accounting tend to shift favourably more actively when they engage in the game. Second, the effects of accounting education are greater, the more positively they are perceived. These findings suggest that active student participation is necessary for accounting education programmes to have an impact and that a positive attitude serves as a mediator for learning outcomes.[11]

In this study, it is aimed to integrate managerial capability to the setting of the school community in order to provide revision feedback to a model for the study of classroom instruction. The quality of economic and accounting education can be estimated, predicted, or explained using the structural equation model of managerial capability, which includes managing schools and carrying out management functions, managing human resources and educational personnel and managing the learning process. The standard of economics and accounting education in schools is significantly impacted by managerial aptitude. These findings allow for the adjustment to add management competence.[13]

The effectiveness of learning may be impacted by these educational technologies, according to prior research on serious games (SGs). Although there is currently a lack of empirical support, these learning-based games are infrequently employed in undergraduate courses and even less frequently in accounting courses when compared to other business disciplines. This study employs the Delphi approach to investigate how accounting academics view the utility of SGs in the classroom and any potential obstacles to their implementation using a pre-existing digital game and a sample of accounting lecturers. The findings indicate that there is no longer a problem with regard to technological funding or knowledge. Despite the perceived advantages of using new teaching aids (such as SGs), incentives for lecturers to become more knowledgeable and motivated are limited.[2]

Review regarding challenges facing accounting education: The corporate environment has undergone significant changes as a result of the quick adoption and spread of globalisation and the massive advances in information technology. These modifications have created new difficulties for both business and business education. To close the skills gap between their graduates' acquired talents and those needed by the global markets, business schools that train future managers in many disciplines are accountable. This essay addresses the difficulties in educating students in accounting so that they have the information and abilities to enhance their competency level. These difficulties call for raising the proficiency level of accountants. Current accounting education and accountant skill levels fall short of what is needed.[10]

Review regarding sustainable development issues in accounting: In relation to the adequacy of accounting education for contemporary market need, the study assesses the perceptions of academicians who teach accounting in the Universities in Karnataka. Additionally, it evaluates how well accounting education aligns with the demands of the market at the institutions in the State of Karnataka.

Results showed that the average accounting education offered in Karnataka State Universities was 43 percent suitable for the needs of the industry. More academicians and universities are required to improve the accounting education system in order to help graduates find employment.[14]

This study aims to investigate how undergraduate accounting students perceive and comprehend the idea of sustainable development. In addition, this study attempts to investigate how Saudi Arabian students view the inclusion of sustainable development concerns in accounting education.

The study's conclusions showed that although the majority of students had heard of the idea of sustainable development from the media and understood its significance for society, they had a limited understanding of it because Saudi Universities seemed to struggle to incorporate sustainable development concerns into their accounting curricula. The learning about sustainable development that Saudi Universities gave left students disappointed. Additionally, they demonstrated a favourable attitude toward incorporating sustainable development.[4]

Review regarding research quality: Some authors presented their study to maintain quality of accounting education. Accounting education research is often considered not to be of comparable quality to other accounting research, thereby providing secondary careers for those researching within the niche sub-discipline.

We present several factors that have influenced this perception, with the most notable being the various journal quality guides where specialist accounting education journals typically do not rank well. We also explore possible explanations for why specialist accounting education journals do not rank highly.[15]

Empirical accounting research frequently makes use of data sets with a time-series and a cross-sectional dimension. The literature review indicates that South African researchers infrequently allow for heterogeneity between firms when using panel data and the empirical example shows that regression results that allow for firm heterogeneity, are materially different from regression results that assume homogeneity among firms. The econometric analysis of panel data has advanced significantly in recent years and accounting researchers should benefit from those improvements.[3]

Identification of Research Gap: After reviewing the literature, it is found that certain topics in education are still untouched. The research questions are:

- Does the quality of research affect the ranking of a university at global level?
- Does the institutions' international reputation affect the ranking of a university at global level?
- Does the location of a university affect the ranking of an educational institute at global level?
- Answering these questions is the central focus of this study.

Research Methodology

Sample Size: Research work is based on secondary data. The websites of Scopus, Times Higher Education and QS's global surveys for top universities were used to gather the data. The ranking of 2367 universities in various topic areas was presented in "The QS World University Rankings." The study is based on 322 universities in the area of accounting and finance from 51 countries across the world for a period of two years 2021 and 2022 out of the available data of 2367 universities.

Research Objectives:

- To know the impact of quality of research affects the ranking of a university at global level.
- To know the impact of institutions' international reputation affects the ranking of a university at global level.
- To know the extend of location of a university affect the ranking of an educational institute at global level.
- To prepare the best model for measuring score to rank the global university.

Hypotheses:

H01: There is significant impact of academic reputation on ranking of university.
H02: There is significant impact of employer reputation on ranking of university.
H03: There is significant impact of research reputation on ranking of university.
H04: All the models are equally important in measuring score to rank the global university.

Variable used for measuring score to rank universities: Four sources are used to construct the score for rankings (via the global surveys conducted by QS). Academic reputation and employer reputation are the first two of these and they are used to evaluate an institution's international reputation in each discipline.

Based on the number of research citations per manuscript and the H-index for the pertinent field, the second two indicators evaluate the effect of research. These are sourced from Elsevier's Scopus database, the world's most comprehensive research citations database. Table 1 presents the list of variables used in this study.

Table 1
Variable used for measuring score to rank universities

Variable	Assessment
Dependent Variables	
Score	Weighted impact of Independent and control Variables
Independent Variables	
Academic	institutions' international reputation
Employer	institutions' international reputation
Citation	Research impact
H-index	Research impact

- **Academic reputation:** More than 130,000 academics from around the world responded to the QS World University Rankings by Subject. In QS's global survey of academics, respondents are asked to name up to 10 domestic and 30 international institutions that excluding their own university, they believe are exceptional for research in the specified subject.

- **Employer reputation:** Scores have been constructed on the basis of universities' or employers' employability, which has been proven to be excellent for hiring graduates. (Global QS survey)

- **Research citations per paper:** Scores are determined by the papers' publication and citation. Elsevier Scopus is the source for all citation information.

- **H-index:** The QS World University Rankings by Subject now includes a score based on the "h-index." The productivity and effect of a scientist's or scholar's published work are both gauged by the h-index. The academic's most frequently cited articles and the number of times they have been cited in other works form the basis of the index.

- **Weightings:** The academic reputation is given a weighting of 50% in the QS World University Rankings followed by employer reputation at 30%, citations at 10% and H-index at 10%.

Results and Discussion

Global Universities in the area of Accounting and Finance: There are high ranking 2367 universities available in different subjects. The study is based on 322 top universities in accounting and finance from 51 countries across the world for a period of two years i.e. 2021 and 2022.

Chart 3 shows the most suitable and ranked top 10 universities: with score of 100, 94.3, 93.2, 91.1, 90.4, 88.8, 88.6, 88.2, 87 and 86.9 respectively as per weightage allotted by QS raking to (1) Harvard University, (2) Stanford University, (3) Massachusetts Institute of Technology, (4) University of Oxford, (5) University of Chicago, (6) University of Cambridge, (7) The London School of Economics, (8) University of Pennsylvania, (9) University of California Berkeley and (10) Newyork University.

Table 2 and chart 4 show the high ranking top 10 universities as per their location. Most of the European countries are high ranked other than United States of America with highest position. It presents the country-wise distribution of sample.

It is found that maximum number is from United States of America i.e. 73 and it represents 22.67% of total sample of 322 universities. Among other countries, UK constituted 12.73%, Australia 5.59%, Canada 4.96% and India with1.24% at 22nd rank.

It is found that academics ranged between 100% and 49.4%. This shows a wide variation in the values of academic which is further evident by the value of C. V. of 106.162%.

However, mean value of academics is 66.17%. Regarding the employer, it is found that environmental disclosure has a mean value of 66.76% with maximum score of 100 and minimum of 44.[5] This has value of C. V. as high as 85.92%, but C V became high with citation and H –index 158.45 and 151.63 respectively.[7]

Hence, the dataset had a lighter tail than the normal distribution. Since the Kurtosis of the variables was below three, it meant that its distribution was platykurtic.

Correlation Matrix: Correlation matrix has been used to find out independent variables. Table 4 presents the correlation matrix among variables under study. It can be observed that all the variables have positive correlation with each other, but in all the cases institutions' international reputation i.e. academic and employer reputation are moderately correlated at the same time, correlation is highly moderate between academic with research variables citation and H-index. But this relationship is very low with employer. Citation has moderate degree positive correlation with H-index.

To prove the hypothesis, regression analysis technique has been used.

Academic and employer reputation are moderately correlated, at the same time correlation is highly moderate between academic with research variables citation and H-index. Table 5 depicts that academic reputation is the most significant in explaining ranking of university (0.917), employer reputation (0.59), citation (0.344) and H-index (0.305).

Thus H_{01}, $H_{02,}$ H_{03} could not be rejected at 5% level of significance for ranking a university. It shows all the selected variables are significant and have power to explain the variable.

After finding the explained capacity of individual variable, it is important to know the various possible combinations of all the variables in certain weighted proportionate. For this purpose, 5 Models with different combination have been selected. Also various models have been tasted for applying to find the best model used to put weightage of selected independent variables.

Table 7 presents the coffeicient values of all independent variables. On the basis of adjusted R^2, model 1 and model 3 are not found realistic to apply and model 2 having the highest R2 (0.951), was found the best model in comparision to model 4 (0.821) and model 5(0.728). Model 2 can also be justified on the p value.

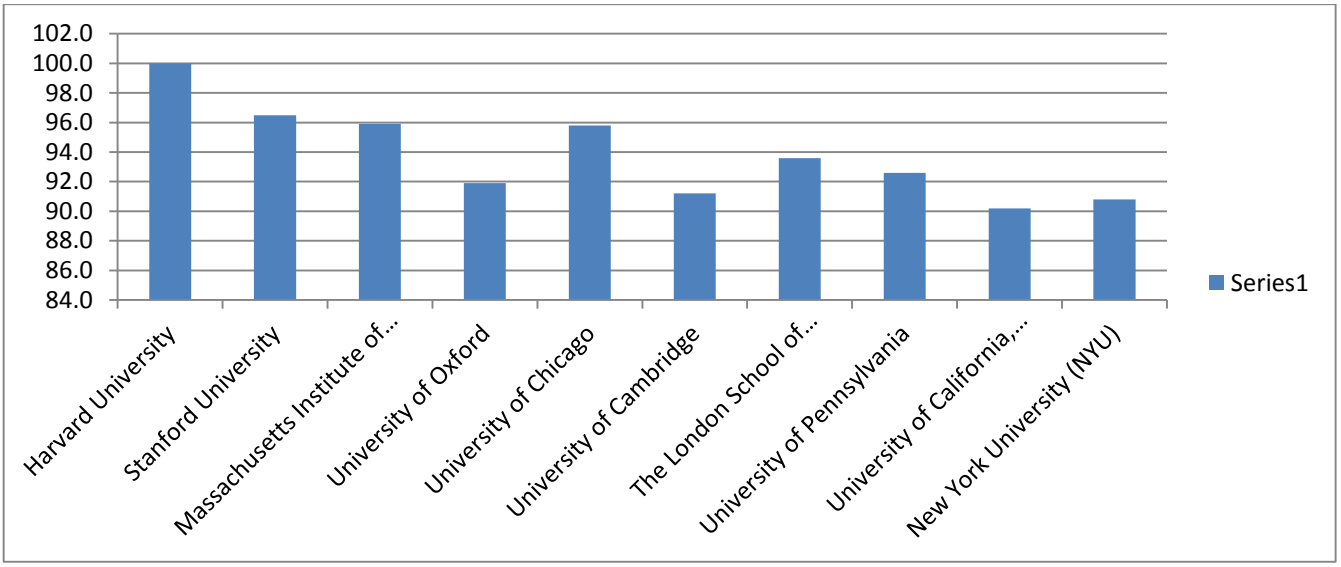

Chart 3: top 10 ranking universities in the area of accounting at Global level
(Source: Own prepared on the data based on https://www.topuniversities.com)

Table 2
Showing Number of universities in top ranking

Name of Countries	No. of universities in top ranking	%
United States	73	22.67081
United Kingdom	41	12.73292
Australia	18	5.590062
Canada	16	4.968944
China (Mainland)	12	3.726708
France	11	3.416149
Spain	9	2.795031
Germany	9	2.795031
Italy	9	2.795031
Netherlands	8	2.484472

Source- own compilation on the data basis of https://www.topuniversities.com

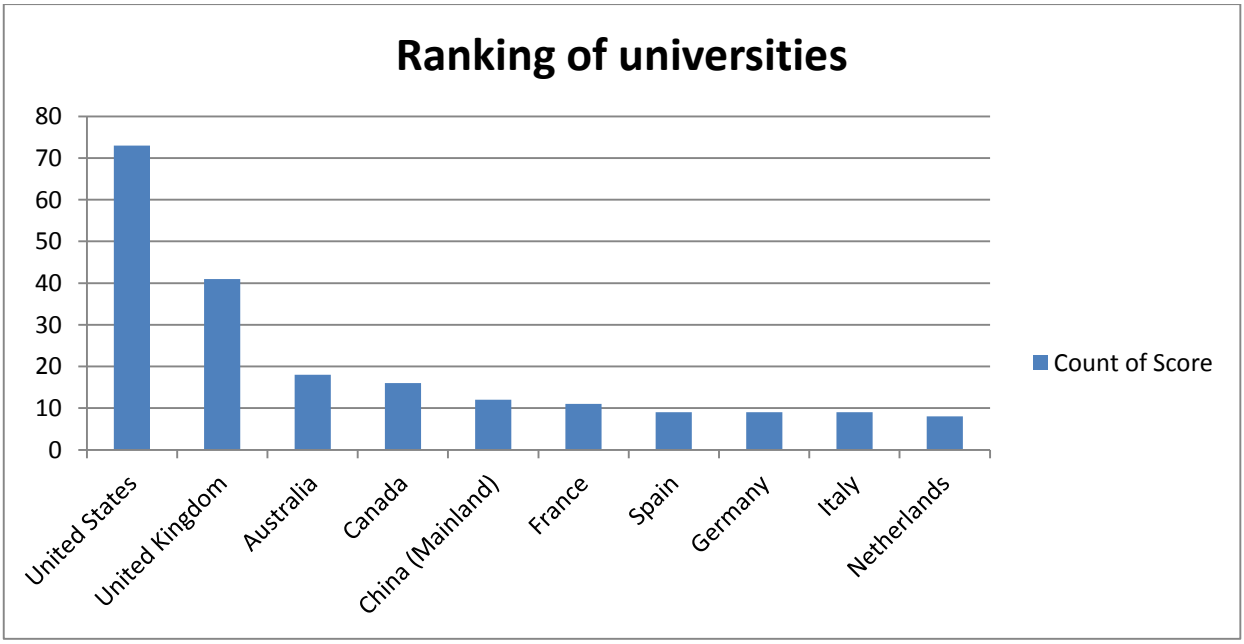

Chart 4: Location wise in the area of accounting at Global level
(Source: Own prepared on the data based on https://www.topuniversities.com)

Table 3
Descriptive Statistics

Variables	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis
Academic	49.40	100.00	66.1717	10.30349	106.162	.887	.295
Employer	44.00	100.00	66.7568	9.25161	85.592	.496	.580
Citation	35.80	100.00	73.1022	12.58778	158.452	-.692	-.240
H index	26.20	100.00	70.5258	12.31385	151.631	-.561	.223
M1	51.28	97.08	68.6042	8.27985	68.556	.691	.245
M2	44.42	96.38	67.8340	10.57650	111.862	.019	-.758
M3	33.79	98.56	71.9428	12.23189	149.619	-.659	-.152
M4	22.75	94.95	63.4202	17.12549	293.282	-.308	-1.216
M5	25.64	97.79	58.4912	22.45079	504.038	-.328	-1.623

Table 4
Correlation Matrix

	academic	employer	citation	H index
Academic	1	.687**	.456**	.404**
Employer	.687**	1	.090	.082
Citation	.456**	.090	1	.925**
H index	.404**	.082	.925**	1
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 5
Regression analysis

Variables (if only one variable is used)	Adj R^2	p-value
Academic	.917	.000
Employer	.590	.000
Citation	.344	.000
H-index	.305	.000

Table 6
Showing weightage of independent variables

Model 1	AC= 30%, EM=30%, CT=20%, H=20%
Model 2	AC= 40%, EM=40%, CT=10%, H=10%
Model 3	AC= 30%, EM=30%, CT=15%, H=15%
Model 4	AC= 50%, EM=30%, CT=10%, H=10%
Model 5	AC= 50%, EM=50%, CT=0%, H=0%

where AC= academic, EM = employer, CT = citation and H = H-index

Table 7
Best Fit Regression Model

Variables	Weighted Average Score of Global Universities with different Models									
	Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Basis for Weight	AC= 30%, EM=30%, CT=20%, H=20%		AC= 40%, EM=40%, CT=10%, H=10%		AC= 30%, EM=30%, CT=15%, H=15%		AC= 50%, EM=30%, CT=10%, H=10%		AC= 50%, EM=50%, CT=0%, H=0%	
	coefficient	**p-value**	**coefficient**	**p-value**	**coefficient**	**p-value**	**coefficient**	**p-value**	**coefficient**	**p-value**
Constant	-9.331E-14	nil	-19.608	.000	4.892E-16	nil	-60.784	.000	-98.039	.000
academic	.300	nil	.155	.000	-3.022E-16	nil	.510	.000	.925	.000
employer	.300	nil	.509	.000	1.923E-16	nil	.408	.000	.696	.000
citation	.200	nil	.501	.000	.550	nil	.374	.000	.606	.000
H-index	.200	nil	.093	.001	.450	nil	.508	.000	.065	.643
Adj R^2	1		0.951		1		0.821		0.728	
remarks	not realistic		highest R2 (I)		not realistic		(II)		(III)	

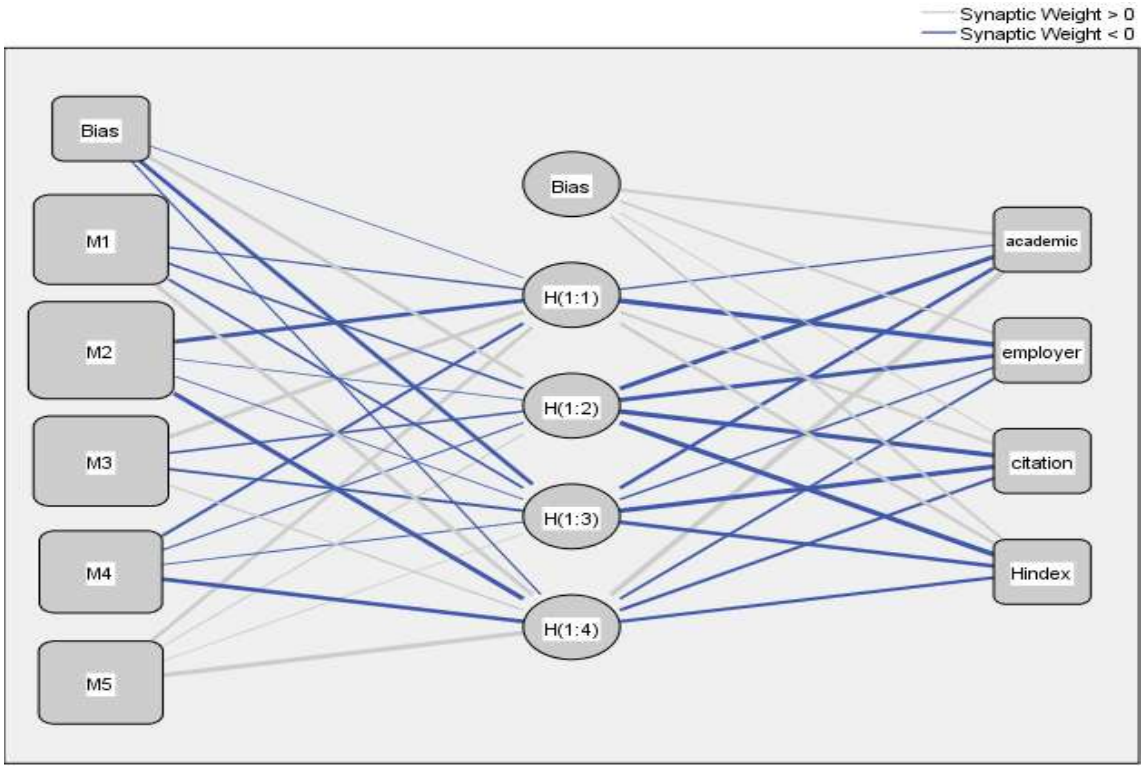

Chart 5: Showing Input, hidden and output layer
(Hidden layer activation function: Hyperbolic tangent
Output layer activation function: Identity)

Table 8
Independent Variables Importance

	Importance	Normalized Importance
M1	.205	88.7%
M2	.231	100.0%
M3	.206	89.3%
M4	.177	76.8%
M5	.180	78.1%

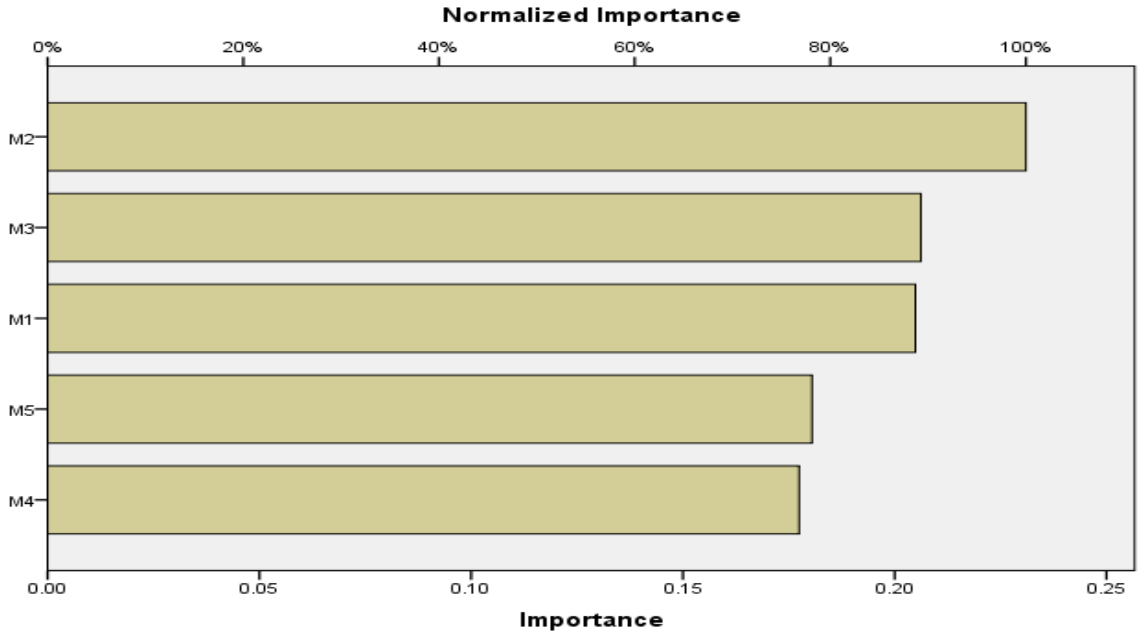

Chart 6: Independent Variables Importance

P value is less than .05 for all the dependent values. It shows there is high impact of all the selcted variables on measuring scores for rating global universities.

Chart 5 gives the network information. It describes the process of working. It works into three layers: input layer, hidden layer and output layer. It is a complete connected graph of input, hidden layer and output respectively. These layers are describing the entire factor which components have more weight or more important.

It is found in table 8 and chart 6 that importance on how the network classifies the prospective applicants. So, statistical models will help in this situation. The highest importance is showing application of model 2 in comparison to other models. Fitness of regression model is proved with analysis, result and prediction of neural network.

Conclusion

Accounting education should continually evolve in order to better prepare future professionals for the ever-changing needs. Present study attempts to know the impact of quality of research and institution reputation on the score and the ranking of a university at global level. The main objective is to predict a most suitable model to rank the universities. For this purpose, scores and ranking data of global universities were obtained from "The QS World University Rankings." The study is based on 322 universities in the area of accounting and finance from 51 countries across the world for a period of two years 2021 and 2022. Data represented two different sets namely independent variables (Academic reputation, employer reputation, research citations per manuscript and the h-index) and dependent variable (score of universities for ranking). Regression technique was used to analyze the data and for prediction purpose, neural network technique has been used.

It is found that academic and employer reputations are moderately correlated, at the same time correlation was high moderate between academic with research variables citation and H-index. It was found that academic reputation is very significant in explaining ranking of university employer reputation on second highest. The highest importance is showing with application of model 2 in comparison to other models. Model 2 is having the highest R2 (0.951) and is found the best model in comparision to model 4 (0.821) and model 5(0.728). Model 2 can also be justified on the p value. P value is less than .05 for all the dependent values.

Fitness of regression model is proved with analysis, result and prediction of neural network. Same result has been found with this technique. Model 2 is found good to score universities for ranking purpose.

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