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ASSESSMENT OF THE GRADUATES' SKILLS ENVIRONMENT FOR JOB PERFORMANCE: STRUCTURAL EQUATION MODELING

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Abstract: All students need a set of skills and attributes to prepare them for both jobs and further learning. Environmental skills (ES) for graduates are the secret that graduates think makes a good worker. Unique qualities and main skills that contribute to overall employability include loyalty, dedication, authenticity and integrity, enthusiasm, personal appearance, inspiration, adaptability and ability to cope with pressure. Employability skills are the "core skills and personal qualities that you need to join, function and succeed in a new world of work." These are the transferable skills that we carry from one job situation to another. Key skills include communication, collaboration, problem-solving, initiative and enterprise, organizing and planning, self-management, technical skills and technology. There is some controversy about the extent at which college students improve their skills and the degree to which higher education institutions are successful in preparing their students to meet the requirements of the labour force. This study therefore explores the expectations of the employability skills of students of the College of Business Administration (CBA) in the United States and how they have developed those skills. Using the Likert-scale survey, 303 student-participants self-reported their skill levels in different environmental skills areas. Structural equation modelling approaches used to analyses and quantify the skills that undergraduate students need for jobs. Our research has shown that, higher education institutions must be able to discuss the problem of employability after graduation and to find innovative and better ways of improving Skills for their students, such as their ability to conceptualize; creativity, innovation and change; leadership and influence; interpersonal relations and motivation-

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Personal qualities that have had the greatest impact on jobs.

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1. INTRODUCTION

Many countries in the world are beset by the increasingly unpredictable changes brought on by globalization. The effect of technology will go beyond modern equipment and quick communication, as work and skills will be redefined and reorganized. The present age has generated opportunities along with challenges and uncertainties that affect two of our sectors: education and jobs. Lasan [1] argued that both had a lot to do with human capital that could compete effectively in a global economy. The human resource will be graduates of higher learning institutions whose educational background will be consistent with current and potential labor market criteria. The relationship and mutual activities of these two industries are therefore highly imperative. With globalization, higher education has been concerned with the growth of the individual, as well as the awareness, abilities and skills that any educated person can expect to have at graduation. It also aims to encourage and empower individuals to improve their capacities at the highest potential levels throughout their lives in such a way that they grow intellectually, contribute effectively to society, achieve personal satisfaction and are well prepared for work.

It is now becoming necessary for higher education institutions to provide opportunities for graduates to learn those general skills and attributes that will make them fully compatible with the real demands of the world of work of [2, 3]. Bailey [2] said that teaching and developing these standardized skills was aligned with the changing needs of a high-performance global economy. In response, universities and governments have developed employability programs to train undergraduates and unemployed graduates in a range of skills that are popular across a variety of professions [4].

This paper aims to explore and measure life skills that are applicable to undergraduate business students attending a CBA program. As such, this research used a quantitative method by administering Likert-scale surveys to undergraduate business students at the college. The overall

objective of this research is to determine how students perceive their skills relative to the labor market's employability requirements—in both the local and the global labor market contexts. Therefore, we intend to add to the existing literature on the importance of developing undergraduate students' employability skills by focusing on the context of the youth unemployment problem.

2. RESULTS AND ANALYSIS

Data have been obtained using the survey questions on environment skills and where such skills were gained (CBA program, non-program, or a combination of both) using a Likert scale in which participants choose one out of five options. Participants indicated whether they gained specific environment skills, where Competence was Developed, almost exclusively from the educational program, mostly from the educational program, equally from the educational program and a non-program, mostly from a non-program, or almost exclusively from a non-program.

Important demographics/background data were also collected, such as gender, age, school, major, internships, extracurricular activities/organizations, GPA, work experience, location, and others. A total of 303 surveys were returned and the sample represents students at universities from across the United States. This sample size fulfills the necessary condition of required sample size i.e., 205 respondents by considering 99% confidence level, standard deviation of 0.5, and ±1% margin of error. Therefore, our sample of 303 meets the required minimum sample size for sampling adequacy [5].

Table 1: Respondent's profile

Demographic characteristic	N	Mean	Std. Deviation
How old are you?	303	21.0594	3.67601
How many HOURS of internship have you COMPLETED?	303	109.3465	232.81783
How many student organizations are you a member of?	303	2.5446	1.93191
How many total MONTHS of work experience?	303	18.0099	18.47721
What is your current, overall GPA (tick one)?	303	1.81	0.923

Table 2: Respondent's profile

Demographic profile	Items	Frequency	Percent
What is your enrolment status?	Freshman	84	27.7
	Sophomore	89	29.4
	Junior	82	27.1
	Senior	48	15.8
What is you Gender?	Male	97	32.0
	Female	203	67.0
	Other	3	1.0
Are you currently employed?	Yes	227	74.9
	No	76	25.1
Is your university a public or private institution?	Public	232	76.6
	Private	45	14.9
	Not sure	26	8.6

The demographic profile of the respondents was given by Tables 1 and 2. When data are collected through self-report surveys, and independent and dependent variables are obedient from the same person, the common method variance should also be examined [6]. So, as mentioned in the literature, we have adopted multiple remedies to this problem. First, this study used different cover for each measurement scale to achieve psychological separation among respondents. Second, data were analyzed using Partial Least Squared-Structural Equation Modeling (PLS-SEM) technique to determine the underlying latent factors from the observed variables. The Partial Last Squares (PLS) were evaluated using SmartPLS 3.2.8 Software. We have validated the measuring model and then studied the structural model [7]. A bootstrapping procedure (1000 resamples) was used for checking the importance of the route coefficients and loadings [7]. Since simulation of structural equations model (SEM) calls on data not to violate the normality assumptions. Therefore, a PLS based SEM was used for this study. PLS is a well-established technique for estimating path coefficients in structural models and has been widely used in several research studies, see Figure 1 for assessment measurement models for graduates' environment. Due to its ability to model latent constructions under conditions of non-normality and small sample sizes, the PLS technique has become more widely common in marketing and management research in the last decade [7].

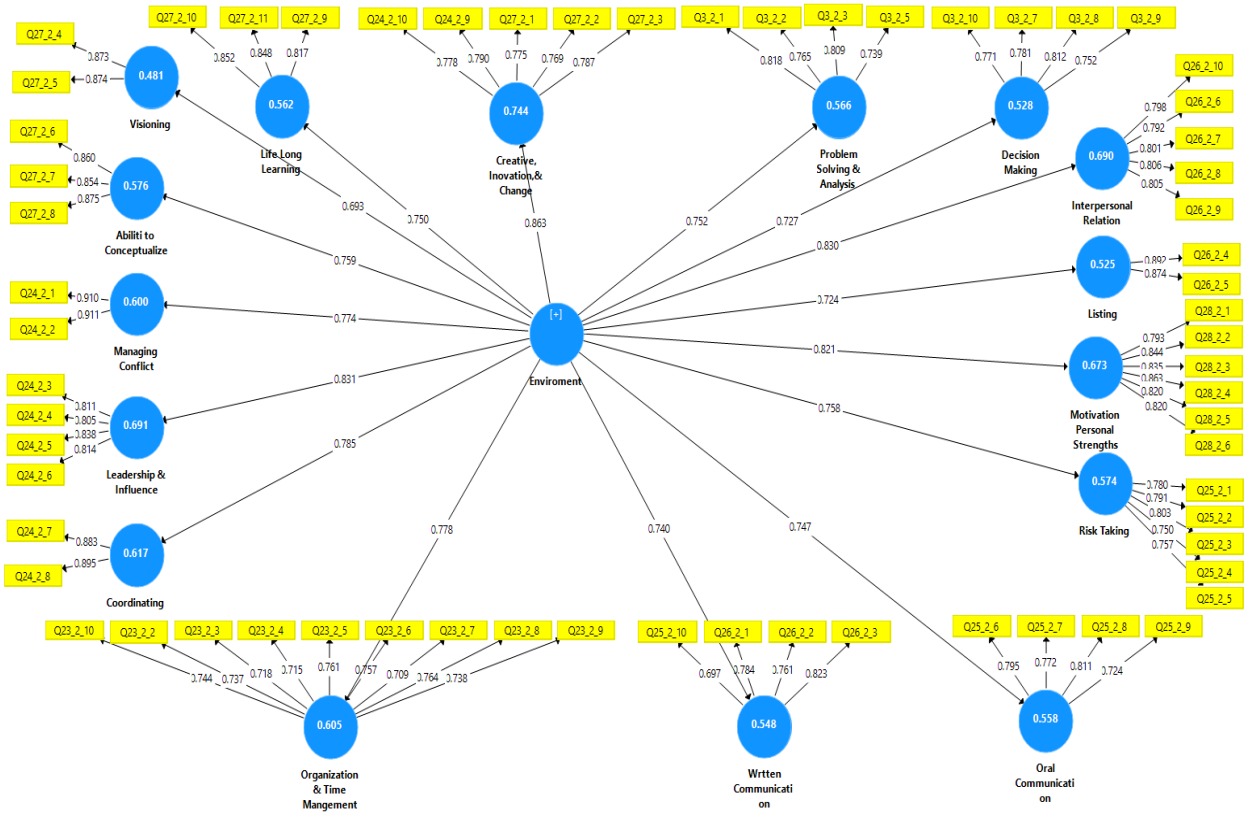

Figure 1: Assessment of Measurement Model for Graduates' Environment model

2.1 Measurement model

The measurement model has been tested for convergent validity and Construction Reliability. This was assessed as in Table 3 by outer loadings, composite reliability (CR), and average variance extracted (AVE). This table shows that all factor loading of items reached the minimum value of 0.7 [8]. Composite reliability values, which reflect the degree to which the latent construct is indicated by the build indicators, exceeded the recommended 0.7. While the extracted average variance, which represents the overall variance in the indicators accounted for it by the latent variables, surpassed the recommended value of 0.5 [7].

The next step was to determine the discriminating validity, referring to the degree to which the indicators are not a representation of any other variables; this is demonstrated by the weak correlations between the measure of interest and the measurements of other constructs. Table 4 shows that the square root of every other construct 's AVE (diagonal values) is greater than its corresponding coefficients of correlation pointing to sufficient discriminant validity [9].

Table 3: Results of Measurements Model – Validity and Reliability for constructs

Codes	Environment Competence Developed	Loading Factors	Composite Reliability	Average Variance Extracted
	Problem Solving and Analytics		**0.864**	**0.614**
Q3_2_1	1. Identifying problems	0.818		
Q3_2_2	2. Prioritizing problems	0.765		
Q3_2_3	3. Solving problems	0.809		
Q3_2_5	5. Identifying essential components of the problem	0.739		
	Decision-Making		**0.86**	**0.607**
Q3_2_7	7. Making decisions in a short period	0.781		
Q3_2_8	8. Assessing long-term effects of decisions	0.812		
Q3_2_9	9. Making decisions on the basis of thorough analysis of the situation	0.752		
Q3_2_10	10. Identifying political implications of the decision to be made	0.771		
	Organization and Time Management		**0.915**	**0.545**
Q23_2_2	12. Recognizing the effects of decisions to be made	0.737		
Q23_2_3	13. Establishing critical events to be completed	0.718		
Q23_2_4	14. Assigning/delegating responsibility	0.715		
Q23_2_5	15. Monitoring progress against plans	0.761		
Q23_2_6	16. Integrating strategic considerations in plans made	0.757		
Q23_2_7	17. Revising plans to include new information	0.709		
Q23_2_8	18. Setting priorities	0.764		
Q23_2_9	19. Allocating time efficiently	0.738		
Q23_2_10	20. Managing/overseeing several tasks at once	0.744		
	Risk Taking		**0.884**	**0.603**
Q25_2_1	21. Meeting deadlines	0.78		
Q25_2_2	22. Taking reasonable job-related risks	0.791		
Q25_2_3	23. Identifying potential negative outcomes when considering a risky venture	0.803		
Q25_2_4	24. Monitoring progress toward objectives in risky ventures	0.75		
Q25_2_5	25. Recognizing alternative routes in meeting	0.757		

	objectives			
	Oral Communication		**0.858**	**0.603**
Q25_2_6	26. Conveying information one-to-one	0.795		
Q25_2_7	27. Communicating ideas verbally to groups	0.772		
Q25_2_8	28. Making effective business presentations	0.811		
Q25_2_9	29. Making impromptu presentations	0.724		
	Written Communication		**0.851**	**0.589**
Q26_2_1	31. Writing external business communication	0.784		
Q26_2_2	32. Writing internal business communication	0.761		
Q26_2_3	33. Using proper grammar, spelling, and punctuation	0.823		
Q25_2_10	30. Writing reports	0.697		
	Listening		**0.876**	**0.78**
Q26_2_4	34. Listening attentively	0.892		
Q26_2_5	35. Responding to others' comments during a conversation	0.874		
	Interpersonal Relations		**0.899**	**0.641**
Q26_2_6	36. Working well with fellow employees	0.792		
Q26_2_7	37. Relating well to supervisors	0.801		
Q26_2_8	38. Establishing a good rapport with subordinates	0.806		
Q26_2_9	39. Empathizing with others	0.805		
Q26_2_10	40. Understanding the needs of others	0.798		
	Managing Conflict		**0.907**	**0.829**
Q24_2_1	41. Identifying sources of conflict among people	0.910		
Q24_2_2	42. Resolving conflicts	0.911		
	Leadership and Influence		**0.889**	**0.668**
Q24_2_3	43. Supervising the work of others	0.811		
Q24_2_4	44. Giving direction and guidance to others	0.805		
Q24_2_5	45. Delegating work to peers	0.838		
Q24_2_6	46. Delegating work to subordinates	0.814		
	Coordinating		**0.883**	**0.79**
Q24_2_7	47. Coordinating the work of peers	0.883		
Q24_2_8	48. Coordinating the work of subordinates	0.895		
	Creativity, Innovation, and Change		**0.886**	**0.608**
Q24_2_9	49. Providing novel solutions to problems	0.790 0.778		

Q24_2_10	50. Adapting to situations of change	0.778		
Q27_2_1	51. Initiating change to enhance productivity	0.775		
Q27_2_2	52. Keeping up-to-date with external realities related to your company's success	0.769		
Q27_2_3	53. Reconceptualizing your role in response to changing corporate realities	0.787		
	Visioning		**0.866**	**0.763**
Q27_2_4	54. Conceptualizing a future for the company	0.873		
Q27_2_5	55. Providing innovative paths for the company to follow for future development	0.874		
	Ability to Conceptualize		**0.897**	**0.745**
Q27_2_6	56. Combining relevant information from a number of sources	0.86		
Q27_2_7	57. Applying information to new or broader contexts	0.854		
Q27_2_8	58. Integrating information into more general contexts	0.875		
	Lifelong Learning		**0.877**	**0.704**
Q27_2_9	59. Keeping up-to-date on developments in the field	0.817 0.852		
Q27_2_10	60. Gaining new knowledge in areas outside the immediate job	0.852		
Q27_2_11	61. Gaining new knowledge from everyday experiences	0.848		
	Motivation-Personal Strengths		**0.93**	**0.688**
Q28_2_1	62. Maintaining a high energy level	0.793		
Q28_2_2	63. Functioning at an optimal level of performance	0.844		
Q28_2_3	64. Responding positively to constructive criticism	0.835		
Q28_2_4	65. Maintaining a positive attitude	0.863		
Q28_2_5	66. Functioning well in stressful situations	0.82		
Q28_2_6	67. Ability to work independently	0.82		

Table 4: Latent Variance Correlations (Root square of AVE)

Constructs	Abiliti to Conceptualize	Coordinating	Creative, Inovation, & Change	Decision Making	Interpersonal Relation	Leadership & Influence	Life Long Learning	Listing	Managing Conflict	Motivation Personal Strengths	Oral Communication	Organization & Time Mangement	Problem Solving & Analysis	Risk Taking	Visioning	Wrtten Communication
Abiliti to Conceptualize	**0.863**															
Coordinating	0.618	**0.889**														
Creative, Inovation,& Change	0.749	0.712	**0.78**													
Decision Making__	0.458	0.501	0.509	**0.779**												
Interpersonal Relation	0.517	0.651	0.699	0.54	**0.8**											
Leadership & Influence	0.6	0.757	0.713	0.54	0.701	**0.817**										
Life Long Learning	0.749	0.563	0.751	0.436	0.553	0.583	**0.839**									
Listing	0.498	0.573	0.597	0.422	0.769	0.587	0.493	**0.883**								
Managing Conflict	0.53	0.643	0.693	0.464	0.652	0.74	0.552	0.556	**0.911**							
Motivation Personal Strengths	0.556	0.612	0.686	0.519	0.695	0.659	0.559	0.577	0.647	**0.829**						
Oral Communication	0.576	0.543	0.601	0.49	0.551	0.571	0.584	0.538	0.517	0.532	**0.776**					
Organization & Time Mangement	0.476	0.527	0.531	0.696	0.569	0.562	0.443	0.468	0.528	0.576	0.577	**0.738**				
Problem Solving & Analysis	0.464	0.528	0.548	0.775	0.562	0.559	0.47	0.456	0.512	0.584	0.516	0.691	**0.783**			
Risk Taking	0.568	0.572	0.594	0.61	0.562	0.59	0.532	0.5	0.555	0.552	0.743	0.656	0.539	**0.777**		
Visioning	0.747	0.555	0.723	0.46	0.485	0.558	0.679	0.433	0.485	0.477	0.495	0.406	0.403	0.542	**0.874**	
Wrtten Communication	0.542	0.507	0.609	0.536	0.652	0.572	0.532	0.618	0.542	0.532	0.584	0.567	0.534	0.585	0.552	**0.768**

2.2 Structural model

Hair [7] suggested using a bootstrapping method with a resample of 1000 to evaluate the structural model to look at the R^2, beta, and corresponding t-values. In addition to these basic steps, they also suggested that researchers should report on the predictive significance (Q^2) and the effect sizes (f^2).

Table 5: Structural estimates of the Research Hypotheses

Relationship Between Environment and	**Standard Beta**	**Standard Deviation**	**T Statistics**	**P Value**	**Decision**
Ability to Conceptualize	0.759	0.029	25.829	0.0001	**Supported**
Coordinating	0.785	0.022	35.224	0.0001	**Supported**
Creative, Innovation&Change	0.863	0.018	47.046	0.0001	**Supported**
Decision Making	0.727	0.034	21.673	0.0001	**Supported**
Interpersonal Relation	0.83	0.027	31.096	0.0001	**Supported**
Leadership & Influence	0.831	0.022	37.962	0.0001	**Supported**
Lifelong Learning	0.75	0.029	25.437	0.0001	**Supported**
Listing	0.724	0.03	24.074	0.0001	**Supported**
Managing Conflict	0.774	0.024	32.204	0.0001	**Supported**
Motivation Personal Strengths	0.821	0.023	34.961	0.0001	**Supported**
Oral Communication	0.747	0.037	20.416	0.0001	**Supported**
Organization & Time	0.778	0.038	20.657	0.0001	**Supported**
Problem Solving & Analysis	0.752	0.031	24.283	0.0001	**Supported**
Risk Taking	0.758	0.034	22.12	0.0001	**Supported**
Visioning	0.693	0.034	20.666	0.0001	**Supported**
Written Communication	0.74	0.035	20.953	0.0001	**Supported**

First, we looked at Path Coefficient- Hypotheses Test. We used p value to test if the relation between coefficient of latent variables is significant or not. This mean that, we accept the association if 95% of the time this relation is works. In different words, 5% of the time this relation might not works. From Table 5, we found that the relationship for all factors is high significant with competence at 99.9%. Thus, all factors were supported.

Second, Coefficient of Determination R^2. The acceptable level of R^2 value depends on the research

context [7] and Falk and Miller [10] proposed an R-squared value of 0.10 as minimum acceptable level. Meanwhile, Chin [11] suggests that the R-squared value of 0.67, 0.33, and 0.19 in PLS-SEM can be considered as substantial, moderate, and weak, respectively. The R^2 values of all factors, in Table 5, are higher than the 0.67 value that Chin [11] suggests would indicate a substantial model.

Table 6: R^2 of the Endogenous Latent variable and its effect size $\mathbf{f^2}$ for Structural Model

Constructs Relationship	**R^2 value**	**Results**	**f^2 value**	**Effect Size**
Ability to Conceptualize	0.576	substantial	1.359	High
Coordinating	0.617	substantial	1.608	High
Creative, Innovation& Change	0.744	substantial	2.913	High
Decision Making__	0.528	substantial	1.119	High
Interpersonal Relation	0.69	substantial	2.223	High
Leadership & Influence	0.691	substantial	2.232	High
Lifelong Learning	0.562	substantial	1.283	High
Listing	0.525	substantial	1.104	High
Managing Conflict	0.6	substantial	1.499	High
Motivation Personal Strengths	0.673	substantial	2.062	High
Oral Communication	0.558	substantial	1.264	High
Organization & Time Management	0.605	substantial	1.531	High
Problem Solving & Analysis	0.566	substantial	1.303	High
Risk Taking	0.574	substantial	1.348	High
Visioning	0.481	substantial	0.926	High
Written Communication	0.548	substantial	1.213	High

Table 7: Predictive Relevancy Q^2 for Structural Model

Constructs Relationship	**SSO**	**SSE**	**Q^2 (=1-SSE/SSO)**	**Predictive Relevancy**
Ability to Conceptualize	909	539.872	0.406	acceptable
Coordinating	606	322.476	0.468	acceptable
Creative, Innovation& Change	1,515.00	873.416	0.423	acceptable
Decision Making	1,212.00	845.46	0.302	acceptable
Interpersonal Relation	1,515.00	887.421	0.414	acceptable
Leadership & Influence	1,212.00	684.375	0.435	acceptable
Lifelong Learning	909	569.155	0.374	acceptable
Listing	606	368.948	0.391	acceptable
Managing Conflict	606	317.394	0.476	acceptable
Motivation Personal Strengths	1,818.00	1,034.56	0.431	acceptable
Oral Communication	1,212.00	829.38	0.316	acceptable
Organization & Time	2,727.00	1,890.30	0.307	acceptable
Problem Solving & Analysis	1,212.00	817.549	0.325	acceptable
Risk Taking	1,515.00	1,022.19	0.325	acceptable
Visioning	606	392.625	0.352	acceptable
Written Communication	1,212.00	847.683	0.301	acceptable

Third, Effect Size f^2 indicates the relative influence of dependent latent variable on endogenous latent variable(s) by R-squared changes [11]. It is measured as the increase of the latent variable to which the direction is related in R-squared, relative to the proportion of unexplained variance in the latent variable [11]. According to [12], the effect size value above 0.35 can be considered to be high effect size, while f^2 in the range of 0.15 to 0.35 is medium effect size, and it will be small if it is in the range of 0.02 to 0.15. If the f^2 value is less than 0.02, then we take NO effect size into consideration. Table 6 shows that both relations were greatly affected in the case of R^2 and f^2 sizes.

Forth, Predictive Relevancy Q^2 using PLS for prediction purposes requires a measure of predictive capability. The suggested approach to test predictive relevance is called the Blindfolding procedure. The procedure will remove data from the data set based on a pre-determined distance value called D. The D can be any number from 5- 10 [11]. The only requirement is that the sample size n divided by D should be a round number. For this study, Q^2 was obtained using cross-validated redundancy procedures. A Q^2 above zero indicates the model has predictive significance, while a Q^2 below zero indicates the model loses predictive relevance. As shown in Table 7, Q^2 suggests appropriate predictive relevance for all endogenous variables.

3. CONCLUSION

More young people are attending higher education institutions than ever before. So, the labor market has become increasingly competitive for college graduates. In the past, a college degree was typically all that a young person needed to enter the working world; however, today, a college degree simply does not hold as much weight in most labor markets. Adding to this concern is that, in the United States, higher education has become more expensive and students are graduating with considerable debt. Therefore, higher education institutions must be willing to address the issue of employability after graduation and find new and improved ways to develop their students' environmental and an employability skills, such that, Ability to Conceptualize; Creative, Innovation& Change; Visioning; Lifelong Learning; Leadership & Influence; Managing Conflict; Coordinating; Organization & Time Management; Decision Making; Problem Solving & Analysis; Listening and understanding; Interpersonal Relation; Motivation Personal Strengths; Risk Taking; Oral Communication and Written Communication.

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CONFLICT OF INTERESTS

The author(s) declare that there is no conflict of interests.

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