

Business Students' Perception of Critical and Marketable Skills in Thriving Job Security

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[Abstract] The primary purpose of this research study is to report on business students' perceptions of critical and marketable skills as it relates to attaining job security in prosperous, innovative companies. The first phase of the study involved a case study considering a top-fifty company directed in several sections of a Management Information Systems course. A concise survey was developed and administered to students. In the second phase, responses to several open questions were solicited from students. Collected responses and data from both phases were analyzed. The findings of this study provide useful information for general business students and beyond.

[Keywords] marketable skills, job security, business students' perception, management information systems

Introduction

A brief general search on "Job Security" reveals that "Job Security is a complete myth" (Morgan, 2014). However, there seems to be a set of critical and marketable skills that can create job "stability"—that is, the ability to continue holding jobs in your field through various means (Clark, 2014). Morgan states that the secret to thriving in the future is "*learning to learn*. What you *know* doesn't matter nearly as much as your ability to learn new things and apply that learning to new scenarios and environments." There are many recommendations on ways to attain job security. For example, an online article on Salary.com by Dawn Dugan (2016) provides fourteen ways to stay indispensable: "Be noticeable, Be a team player, Develop a unique knowledge base or skill, Be positive, Cultivate a life outside of work, Learn more, Pay attention to the decisions you make, Take responsibility for your mistakes, Rewrite your job description, Network,

Share your knowledge and experience, Stick it out when the going gets tough, Say ‘yes’ to opportunities that come your way, and Always do your best, no matter what the task.” In a nutshell, as stated by Kroenke (2015), a marketable skill and the courage to use it is the only job security that can be counted on.

Subsequently, it is necessary to explore the term “marketable skills” and their achievement and maintenance. Robert Reich (1992), former Secretary of Labor, in “The Work of Nations,” postulates four main skills: (I) *Abstract Reasoning* – the ability, according to Kroenke (2015), “to make and manipulate models,” or alternatively from Logsdon (2016) “the ability to process ideas that involve complex visual or language.” (II) *System Thinking* – the ability to model the components of a system with the linkages and interactions between its components (Kroenke, 2015; Tate, 2009). (III) *Collaboration* – the ability to work with two or more persons to accomplish a mutual goal. (IV) *Ability to Experiment* – the ability to experiment with new opportunities without fear of failure or to take a chance with new potential alternative solutions to problems.

The Future of Jobs Report: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution at World Economic Forum (2016) reports the following top ten skills for 2020:

- Complex Problem Solving
- Critical Thinking
- Creativity
- People Management
- Coordinating with Others
- Emotional Intelligence
- Judgment and Decision Making
- Service Orientation
- Negotiation
- Cognitive Flexibility

In the list above, complex problem solving seems to be one of the core skills, aligning or being an element of each of Reich’s main four. In this study, our focus is on these skills.

Since the topic explored here is extremely broad and based on a case study provided in Kroenke’s (2015) textbook for students, the authors will use only one of the innovative companies in this study: namely, Amazon.com, Inc. Amazon.com or simply Amazon, is an American electronic commerce and cloud computing company, the largest Internet-based retailer in the world for total sales and market capitalization (for further common information, please refer to Amazon.com, Inc. on Wikipedia and other resources). Amazon offers 250 million products; compare to Walmart’ 4.2 million products just to illustrate the large variety of goods and services of Amazon (Gewritz, 2016). Since its inception, Amazon has become a dominant player in the online and technology industry. The development of the Marketplace, Kindle, Appstore, Web Services, and order fulfillment allows Amazon to prosper. Amazon is able to offer many services to other companies using these developments. Its effective collaboration, skillful tactics, and yearning drive push the company to advance at all times (Imran, 2014; D’Onfro, 2014; Palmquist, 2014; Freedman, 2016; Cusumano, & Yoffie, 2016; Gewritz, 2016; Johnson, 2016).

This research study is an effort to conduct a two-phase investigation of business students’ perceptions of critical and marketable skills in attaining job security in a prosperous innovative company such as

Amazon.com. The first phase of the study involved a case study considering a top fifty company, Amazon.com. Several open-questions were given and responded to by students in several sections of a Management Information Systems course, while in the second phase, a concise survey was developed and administered to students.

Research Methodology

Participants

The sample population consisted of students in several sections of a Management Information Systems course with an average of 40 students per course. In 2016-2019, approximately five hundred students completed the case study and one hundred eighty completed the survey. All respondents of the survey phase participated on a volunteer basis, and consent was offered to each student at the beginning of the survey. It must be noted that while the survey was administered as a volunteer option, surprisingly all of the hundred eighty students who volunteered entirely completed the survey.

Characteristics of Participants

Available demographic characteristics included gender (female or male), age, and educational level. The characteristics of participants who completed the case study and survey phases are as follows: 60 females, 64 males; a majority of students in the age range of 18-22, and 100% undergraduate classification. A detailed makeup of participants and breakdowns by age and major are shown in the results section.

Instruments

Both phases (open-questions and survey) consisted of four precise questions. The following questions were adopted verbatim from the Amazon Case Study section in Chapter One of Kroenke, 2015. The first question required responses to evidence of willingness and ability to collaborate at Amazon. The second question requested responses to evidence of willingness and ability to experiment at Amazon. The third question requested responses to ways employees at Amazon must be able to perform systems and abstract thinking. The fourth question requested responses to skills and abilities an employee needs to have to prosper at an organization like Amazon. In addition, simple demographic data, such as gender, race, age, educational level, and major, were included. Based on our prior experiences on conducting surveys in university environments, the survey was made intentionally simple and brief. This allowed for efficient administering and collecting of surveys during class sessions, thus facilitating more faculty permission to conduct surveys in their running class sessions in in-class and online formats. In addition, the simplicity and brevity of the survey encouraged more students to participate.

Procedure

Based on the prior case study and open-questions phases, the survey measured students' opinions on the ways Amazon, as a company, shows its willingness and ability to incorporate collaboration, abstraction, systematic thinking, and experimentation into its organization. The survey was designed and installed on the KSU-licensed Qualtrics software that provides anonymous responses. The link to the survey was distributed via D2L (Desire to Learn), a learning management system, to the Management Information Systems course sections. An online consent form was obtained from each participant prior to beginning the

research study. No personal identifiable information was collected from students. The collected data were subjected to a comprehensive and appropriate statistical analysis. Please note that the open-questions phase was administered online, and students responded and uploaded their answers via D2L. Highlighted responses of this phase were compiled and will be presented in sections that follow.

Results for Both Phases

The open-questions phase was conducted prior to the survey phase to improve the likelihood of participants responding more intelligently to the survey questions; nevertheless, it seems to be more logical to report the survey phase results first and then to complement with the results of the open-questions phase.

Survey Summary

There were 180 completed surveys. Of those, 124 were usable. The remaining 56 were missing too much data to be analyzed. The respondents were 60 females and 64 males. The breakdown by race is shown in Table 1-left. This breakdown is consistent with the makeup of the students in the courses surveyed. The breakdown by age is shown in Table 1-center. As would be expected of a college survey, the respondents skew fairly young. The survey included 70 juniors and 54 seniors. Finally, the breakdown by majors is given in Table 1-right. As shown, there is a wide variety of majors included in the analysis.

Table 1

Breakdowns of Participants Are Shown by Race (left), Age (center), and Major (right)

Race	#	Age	#	Major	#
White	86	18-22	69	Accounting	25
Black	16	23-27	29	Applied Computer Science	1
Hispanic	5	28-32	12	Construction Management	2
Chinese	1	33-37	7	Economics	1
Other	16	38-42	3	Entrepreneurship	2
		Over	4	Finance	13
		42		Information Security & Assurance	9
				Integrative Studies	1
				Information Systems	6
				International Business	5
				Management	36
				Marketing	20
				Professional Sales	3

The participants were asked, “In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?” They were given a list of ten characteristics that support the question and were asked to rank them from highest to lowest, where highest is ranked one and lowest is ranked ten. All participants were required to rank all ten characteristics; there was no requirement that this ranking be unique (in other words, participants could rank as many items as they believed to be important as a one or as many items as they believed to be unimportant as ten). Respondents were also asked, “In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?” They were again given a list of ten

characteristics that support the question and asked to rank them from highest to lowest, where highest is ranked one and lowest is ranked ten. All participants were required to rank all ten characteristics; there was no requirement that this ranking be unique. The results of the average ranking are shown in Table 2. Analysis of variance indicates a significant difference ($F=2.610$, $p=0.005$) between the rankings.

Table 2

Overall Average Ranking of Participants in Ascending Order

In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?	Average Ranking
Fulfillment facilities able to ship 15.6 million items on a single day.	4.22
Its enormous supporting of IT infrastructure.	4.44
Leasing come of its IT capacity to other companies.	4.71
Selling order fulfillment services.	4.79
Its role in the creation of cloud services.	4.85
Free shipping	5.15
Amazon Web Services (AWS).	5.25
Online customer reviews.	5.48
Other	5.48
Kindle books and devices.	5.73

The averages of ranking by gender are shown in Table 3. The only characteristic for which the average ranking was statistically different ($F=4.439$, $p=0.037$) between male and female was online customer reviews.

Table 3

Average Ranking by Gender

In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?	Average Male Ranking	Average Female Ranking
Fulfillment facilities able to ship 15.6 million items on a single day.	4.48	3.93
Its enormous supporting of IT infrastructure.	4.77	4.08
Leasing come of its IT capacity to other companies.	5.03	4.37
Its role in the creation of cloud services.	5.19	4.50
Selling order fulfillment services.	5.33	4.22
Online customer reviews.	6.08	4.83
Free shipping	5.41	4.87
Kindle books and devices.	5.97	5.48
Amazon Web Services (AWS).	5.58	4.97
Other	5.30	5.67

The rankings by race are shown in Table 4. For these results, one Chinese respondent was included in the "Other" category. Analysis of variance indicates a significant difference ($F=4.365$, $p=0.006$) in the average means.

Table 4

Average Ranking by Race

In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?	Average White Ranking	Average Black Ranking	Average Hispanic Ranking	Average Other Ranking
Fulfillment facilities able to ship 15.6M items on a single day.	4.00	5.75	2.60	4.35
Its enormous supporting of IT infrastructure	4.03	7.13	2.80	4.41
Leasing come of its IT capacity to other companies	4.49	6.13	3.00	5.00
Its role in the creation of cloud services	4.65	6.88	4.00	4.24
Selling order fulfillment services	4.42	6.75	4.00	5.06
Online customer reviews	5.44	6.50	4.60	4.94
Free shipping	4.91	6.50	4.00	5.41
Kindle books and devices	5.80	6.38	5.00	5.00
Amazon Web Services (AWS)	5.19	6.38	2.80	5.24
Other	5.70	3.94	6.00	5.65

All of the respondents were juniors or seniors. The differences in their responses are shown in Table 5. Analysis of variance indicates no significant differences between their responses.

Table 5

Average Ranking by Educational Classification

In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?	Average Junior Ranking	Average Senior Ranking
Fulfillment facilities able to ship 15.6 million items on a single day	4.46	3.91
Its enormous supporting of IT infrastructure	4.76	4.02
Leasing come of its IT capacity to other companies	5.03	4.30
Its role in the creation of cloud services	5.06	4.59
Selling order fulfillment services	4.73	4.87
Online customer reviews	5.83	5.02
Free shipping	5.53	4.65
Kindle books and devices	5.74	5.72
Amazon Web Services (AWS)	5.14	5.39
Other	5.46	5.50

Finally, the respondents were broken down by age. Those results are shown in Table 6. Analysis of variance indicates there is not a significant difference in the average means.

Table 6

Average Ranking by Age Breakdown

In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?	Average 18-22 Ranking	Average 23-27 Ranking	Average 28-32 Ranking	Average 33-37 Ranking	Average 38-42 Ranking	Average Over 42 Ranking
Fulfillment facilities able to ship 15.6 million items on a single day.	4.46	4.17	3.58	4.29	3.67	2.50
Its enormous supporting of IT infrastructure.	4.42	4.62	4.25	4.71	4.00	3.75
Leasing come of its IT capacity to other companies.	4.90	4.97	3.08	5.57	4.00	3.50
Its role in the creation of cloud services.	5.29	4.48	4.17	5.00	3.00	3.25
Selling order fulfillment services.	5.01	4.97	4.50	4.29	2.33	3.25
Online customer reviews.	5.67	5.62	5.33	5.43	2.67	3.75
Free shipping	5.10	5.28	6.00	4.71	3.67	4.25
Kindle books and devices.	5.97	5.76	6.00	4.71	2.33	5.00
Amazon Web Services (AWS).	5.59	5.07	4.42	5.00	3.67	4.75
Other	5.36	5.79	5.33	8.43	4.00	1.50

Respondents were also asked, “In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?” They were again given a list of ten characteristics that support the question and asked to rank them from highest to lowest, where highest is ranked one and lowest is ranked ten. All participants were required to rank all ten characteristics; there was no requirement that this ranking be unique. The results of average ranking are shown in Table 7. Analysis of variance indicates no significant difference between the rankings at alpha equals 0.05.

Table 7

Overall Average Ranking of Participants in Ascending Order

In what ways does Amazon, as a company, evidence the willingness and ability to experiment?	Average Ranking
Its 29+ product categories	4.49
Its role in the creation of cloud services	4.81
Selling order fulfillment services	4.86
Leasing come of its IT capacity to other companies	4.99
Amazon Web Services (AWS)	5.08
Online auctions	5.15
Free shipping	5.19
Kindle books and devices	5.24
Online customer reviews	5.37
Other	5.56

The averages of ranking by gender are shown in Table 8. There are four differences that are significant:

leasing ($F=6.156$, $p=0.014$), free shipping ($F=4.992$, $p=0.027$), Kindle books ($F=9.085$, $p=0.003$), and AWS ($F=6.045$, $p=0.015$).

Table 8

Average Ranking by Gender

In what ways does Amazon, as a company, evidence the willingness and ability to experiment?	Average Male Ranking	Average Female Ranking
Its 29+ product categories.	4.73	4.23
Leasing come of its IT capacity to other companies.	5.67	4.27
Its role in the creation of cloud services.	5.39	4.18
Selling order fulfillment services.	5.38	4.32
Online customer reviews.	5.84	4.87
Free shipping.	5.81	4.52
Online auctions.	5.55	4.73
Kindle books and devices.	6.09	4.33
Amazon Web Services (AWS).	5.78	4.33
Other.	5.70	5.42

The rankings by race are shown in Table 9. Analysis of variance indicates no significant differences between their responses.

Table 9

Average Ranking by Race

In what ways does Amazon, as a company, evidence the willingness and ability to experiment?	Average White Ranking	Average Black Ranking	Average Hispanic Ranking	Average Other Ranking
Its 29+ product categories.	4.35	6.13	2.80	3.81
Its role in the creation of cloud services.	4.91	6.44	3.60	4.13
Selling order fulfillment services.	4.64	6.38	4.00	4.06
Leasing come of its IT capacity to other companies.	4.62	6.50	3.20	4.75
Amazon Web Services (AWS).	5.30	5.88	5.40	4.94
Online auctions.	5.08	6.38	3.60	4.75
Free shipping.	4.99	6.75	3.80	4.75
Kindle books and devices.	5.20	6.69	4.20	4.13
Online customer reviews.	4.98	6.25	4.00	4.50
Other.	5.72	5.06	4.20	5.38

All of the respondents were juniors or seniors. The differences in their responses are shown in Table 10. Analysis of variance indicates no significant differences between their responses.

Table 10

Average Ranking by Educational Classification

In what ways does Amazon, as a company, evidence the willingness and ability to experiment?	Average Junior Ranking	Average Senior Ranking
Fulfillment facilities able to ship 15.6 million items on a single day.	4.53	4.44
Its enormous supporting of IT infrastructure.	5.10	4.85
Leasing come of its IT capacity to other companies.	4.87	4.72
Its role in the creation of cloud services.	4.97	4.72
Selling order fulfillment services.	5.81	4.80
Online customer reviews.	5.50	4.78
Free shipping	4.71	5.72
Kindle books and devices.	5.29	5.19
Amazon Web Services (AWS).	5.19	4.94
Other	5.51	5.63

Finally, the respondents were broken down by age. Those results are shown in Table 11. Analysis of variance indicates only one significant difference: Other ($F=2.480$, $p=0.038$).

Table 11

Average Ranking by Age Classification

In what ways does Amazon, as a company, evidence the willingness and ability to experiment?	Average 18-22 Ranking	Average 23-27 Ranking	Average 28-32 Ranking	Average 33-37 Ranking	Average 38-42 Ranking	Average Over 42 Ranking
Fulfillment facilities able to ship 15.6 million items on a single day.	4.65	5.38	2.75	3.71	2.33	3.50
Its enormous supporting IT of infrastructure.	5.06	5.34	4.00	5.71	4.67	3.25
Leasing come of its IT capacity to other companies.	5.14	4.93	3.33	4.86	3.67	3.25
Its role in the creation of cloud services.	5.12	5.03	3.92	4.86	3.00	3.50
Selling order fulfillment services.	5.81	5.41	3.75	5.57	2.67	4.00
Online customer reviews.	5.51	5.28	4.33	5.00	2.33	4.00
Free shipping	5.51	4.62	5.42	4.86	2.00	5.00
Kindle books and devices.	5.43	5.55	4.75	4.43	3.67	3.75
Amazon Web Services (AWS).	5.52	4.62	4.83	4.29	4.00	3.75
Other	5.04	6.28	7.08	8.00	4.67	1.25

The participants were asked, "In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?" They were given a list of four items that support the question and asked to rank them from highest to lowest. The results are shown in Table 12. While there was no consensus among three specific items, it was fairly clear that students did not feel that some other item was more important. Analysis of variance indicates a significant difference ($F=2.623$, $p=0.000$) between the rankings.

Table 12

Overall Average Ranking of Participants in Ascending Order

In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?	Average Ranking
Managing the IT system.	2.09
Developing new product categories.	2.15
Developing new business line ideas.	1.99
Other.	3.77

The averages of rankings by gender are shown in Table 13. None of the characteristic averages was statistically different at alpha equal to 0.05.

Table 13

Average Ranking by Gender Breakdown

In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?	Average Male Ranking	Average Female Ranking
Managing the IT system	2.16	2.02
Developing new product categories	2.20	2.10
Developing new business line ideas	1.84	2.15
Other	3.80	3.73

The rankings by race are shown in Table 14. Analysis of variance indicates only one significant difference: Other ($F=2.760$, $p=0.045$).

Table 14

Average Ranking by Race

In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?	Average White Ranking	Average Black Ranking	Average Hispanic Ranking	Average Other Ranking
Managing the IT system	2.15	1.88	2.40	1.94
Developing new product categories	2.09	2.13	2.00	2.44
Developing new business line ideas	1.95	2.06	1.60	2.19
Other	3.80	3.94	4.00	3.44

All of the respondents were juniors or seniors. The differences in their responses are shown in Table 10. Analysis of variance indicates no significant differences between their responses.

Table 15

Average Ranking by Educational Classification

In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?	Average Junior Ranking	Average Senior Ranking
Managing the IT system.	2.09	2.09
Developing new product categories.	2.19	2.11
Developing new business line ideas.	1.99	2.00
Other.	3.74	3.80

Finally, the respondents were broken down by age. Those results are shown in Table 16. Analysis of variance indicates none of the averages was statistically significant at alpha equal to 0.05.

Table 16

Average Ranking by Age Classification

In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?	Average 18-22 Ranking	Average 23-27 Ranking	Average 28-32 Ranking	Average 33-37 Ranking	Average 38-42 Ranking	Average Over 42 Ranking
Managing the IT system	2.10	2.07	1.83	2.29	2.00	2.50
Developing new product categories	2.04	2.41	2.08	1.86	2.67	2.50
Developing new business line ideas	1.99	1.97	2.33	2.00	1.33	1.75
Other	3.87	3.55	3.75	3.86	4.00	3.25

The participants were asked about the “importance in supporting order fulfillment” for five items. The results are shown in Table 17. Analysis of variance indicates a significant difference of ($F=4.965$, $p=0.001$) between the rankings.

Table 17

Overall Average Ranking of Participants in Ascending Order

Importance in supporting order fulfillment	Average Ranking
People	2.60
Software	2.92
Computers	2.94
Data	3.27
Procedures	3.27

The averages rankings by gender are shown in Table 18. None of the characteristic averages was statistically different at alpha equal to 0.05.

Table 18

Average Ranking by Gender Breakdown

Importance in supporting order fulfillment	Average Male Ranking	Average Female Ranking
Computers	2.95	2.92
Software	2.86	2.98
Data	3.23	3.30
Procedures	3.41	3.13
People	2.55	2.67

The rankings by race are shown in Table 19. None of the average differences was statistically significant at alpha equal to 0.05.

Table 19

Average Ranking by Race

Importance in supporting order fulfillment	Average White Ranking	Average Black Ranking	Average Hispanic Ranking	Average Other Ranking
Computers	2.99	2.69	2.40	3.00
Software	2.88	3.19	2.80	2.94
Data	3.40	2.75	3.20	3.25
Procedures	3.17	3.75	3.20	3.38
People	2.56	2.63	3.40	2.44

All of the respondents were juniors or seniors. The differences in their responses are shown in Table 20. Analysis of variance indicates only “People” ($F=4.198$, $p=0.043$) displayed a significant difference.

Table 20

Average Ranking by Educational Classification

Importance in supporting order fulfillment	Average Junior Ranking	Average Senior Ranking
Computers	2.97	2.89
Software	2.94	2.89
Data	3.31	3.20
Procedures	3.07	3.54
People	2.70	2.48

Finally, the respondents were broken down by age. Those results are shown in Table 21. Analysis of variance indicates none of the averages was statistically significant at alpha equal to 0.05.

Table 21

Average Ranking by Age Classification

Importance in supporting order fulfillment	Average 18-22 Ranking	Average 23-27 Ranking	Average 28-32 Ranking	Average 33-37 Ranking	Average 38-42 Ranking	Average Over 42 Ranking
Computers	2.72	3.24	3.33	2.86	2.33	3.75
Software	2.80	3.10	2.67	3.71	2.67	3.25
Data	3.22	3.17	3.33	4.00	4.00	2.75
Procedures	3.49	2.97	3.25	2.29	3.67	3.25
People	2.77	2.52	2.42	2.14	2.33	2.00

The participants were asked, “What skills and abilities an employee needs to have to prosper at an organization like Amazon.” The results are shown in Table 22. Analysis of variance indicates a statistically significant difference ($F=2.055$, $p=0.025$) between the rankings.

Table 22

Overall Average Ranking of Participants in Ascending Order

What skills and abilities an employee needs to have to prosper at an organization like Amazon?	Average Ranking
Systems and Abstract Thinking	4.40
Problem Solving	4.56
Collaborative Ability	4.65
Creativity	4.65
Ability to Experiment	4.76
Critical Thinking	4.78
Decision Making	4.94
Service Orientation	5.05
Emotional Intelligence	5.56
Other	5.60
Negotiation	5.69

The averages rankings by gender are shown in Table 23. Analysis of variance indicates only “Creativity” ($F=7.503$, $p=0.0073$) showed a significant difference.

Table 23

Average Ranking by Gender Breakdown

What skills and abilities an employee needs to have to prosper at an organization like Amazon?	Average Male Ranking	Average Female Ranking
Problem Solving	5.03	4.07
Collaborative Ability	5.20	4.07
Decision Making	5.47	4.37
Service Orientation	5.34	4.73
Systems and Abstract Thinking	5.00	3.75
Critical Thinking	5.28	4.25
Creativity	5.11	4.15

Ability to Experiment	5.53	3.93
Negotiation	5.80	5.58
Emotional Intelligence	5.63	5.48
Other	5.77	5.43

The rankings by race are shown in Table 24. None of the average differences was statistically significant at alpha equal to 0.05.

Table 24

Average Ranking by Race

What skills and abilities an employee needs to have to prosper at an organization like Amazon?	Average White Ranking	Average Black Ranking	Average Hispanic Ranking	Average Other Ranking
Problem Solving	4.29	6.38	2.80	4.44
Collaborative Ability	4.48	6.19	3.40	4.13
Decision Making	4.78	6.13	3.80	4.63
Service Orientation	5.10	5.69	3.60	4.25
Systems and Abstract Thinking	4.08	6.25	3.40	4.19
Critical Thinking	4.65	6.38	3.00	4.13
Creativity	4.43	6.38	4.00	3.94
Ability to Experiment	4.52	6.31	4.20	4.31
Negotiation	5.85	5.69	4.60	4.94
Emotional Intelligence	5.77	5.19	4.20	4.94
Other	5.73	5.56	3.60	5.31

All of the respondents were juniors or seniors. The differences in their responses are shown in Table 25. None of the average differences was statistically significant at alpha equal to 0.05.

Table 25

Average Ranking by Educational Classification

What skills and abilities an employee needs to have to prosper at an organization like Amazon?	Average Junior Ranking	Average Senior Ranking
Problem Solving	4.41	4.76
Collaborative Ability	4.56	4.78
Decision Making	5.03	4.81
Service Orientation	5.07	5.02
Systems and Abstract Thinking	4.49	4.28
Critical Thinking	4.73	4.85
Creativity	4.84	4.39
Ability to Experiment	4.83	4.67
Negotiation	5.96	5.35
Emotional Intelligence	5.69	5.39
Other	5.74	5.43

Finally, the respondents were broken down by age. Those results are shown in Table 26. Analysis of

variance indicates only “Other” (F=2.573, p=0.030) displayed a statistically significant difference.

Table 26
Average Ranking by Age Classification

What skills and abilities an employee needs to have to prosper at an organization like Amazon?	Average 18-22 Ranking	Average 23-27 Ranking	Average 28-32 Ranking	Average 33-37 Ranking	Average 38-42 Ranking	Average Over 42 Ranking
Problem Solving	4.70	4.69	4.08	4.29	4.00	3.75
Collaborative Ability	4.83	4.86	4.17	3.86	3.67	3.75
Decision Making	5.16	4.79	4.92	5.43	1.67	3.75
Service Orientation	5.17	4.90	5.92	5.29	2.67	2.75
Systems and Abstract Thinking	4.68	4.62	3.08	4.00	3.00	3.50
Critical Thinking	5.00	5.21	4.00	4.00	2.67	3.25
Creativity	5.10	4.72	3.25	3.71	2.00	4.00
Ability to Experiment	5.00	5.07	3.58	4.29	3.33	3.75
Negotiation	5.77	5.93	6.25	6.29	1.33	3.25
Emotional Intelligence	5.65	6.07	6.00	5.57	1.00	2.25
Other	5.03	6.31	6.50	8.86	6.33	1.50

Open-Questions Summary

In this section, due to page limitations, only a limited, randomly selected set of responses to open-questions is presented in the Table 27. A full coverage of this phase will be compiled and disseminated in future publication. However, it must be noted that Table 1 essentially represents the overall responses of all students who participated in this phase.

Table 27
A Limited, Randomly Selected Collection of Responses to Open-Questions Section Showing Business Students’ Perceived Required Skills to Thrive in A Company Like Amazon.

Business students’ perceived required skills to thrive in a company like Amazon		
<ul style="list-style-type: none"> • Understanding new technology • Abstract thinker • Dedicating long hours 	<ul style="list-style-type: none"> • Computer Skills • System thinking • Work ethic • Collaboration • Not complaining • Contribute to solution • Hard working • General desire to learn • Learning on his/her own • Work hard • No complain about long hours 	<ul style="list-style-type: none"> • Creativity • Innovation • Continuous learning
<ul style="list-style-type: none"> • Collaboration • Problem solving • Creative thinking • Ability to think outside the box • Work long periods of time • Background in Information Systems • Open to ever changing procedures 	<ul style="list-style-type: none"> • Problem solving • Abstract thinking • Thinking outside of the box • Working hard • Be innovative • Self-directed • Driven and creative 	
<ul style="list-style-type: none"> • Critical thinking 	<ul style="list-style-type: none"> • Think outside of the box 	<ul style="list-style-type: none"> • Desire to succeed

• Problem solving	• Abstract thinking	• Desire to innovate
• Ability to learn quickly and efficiently	• Brave enough to share ideas	• Enthusiastic attitude
• Good work habit and ethic	• Resilient	• Creative problem solving
	• Be able to move forward	
	• No fear of failure	
• Experimental approach	• Eager to learn new things	• Initiative
• Innovative skill	• Think critically	• Creativity
• Creativity	• Be efficient while being safe.	• Organizational skills
• Well-rounded individual	• Collaboration	• Creativity
• Tolerate high pressure situation	• Communication	• Innovation
• Cognitive skills	• Abstract thinking	• Out of box thinking
• Take calculated risk	• Information systems	• Risk taker
	• Team work	
• Ambitious	• Open to learn new things	• killer instinct
• Resilient	• Knowledge of Information Systems	• Very strong desire to succeed
• Adaptable		
• Grow and learn new skills	• hard working and diligent	• Innovate

Conclusions and Discussions

Concisely, this research study was an effort to conduct a two-phase investigation of business students' perceptions of critical and marketable skills in attaining job security in a prosperous, innovative company such as Amazon.com. In the first phase, open-questions were conducted after over approximately five hundred students completed case study assignments, and in the second phase, a survey was administered.

Survey Phase

In regards to the collaboration, ANOVA shows there were statistically significant differences ($F=2.610$, $p=0.005$) between the means on the ten factors showing evidence of their willingness and ability to collaborate. Those means also show that there was not a strong consensus among the students completing the survey. The items were ranked from 1-10 with one being the strongest. The range of averages was only 4.22 to 5.48.

The average score on the ten factors related to systems and abstract thinking by employees had an even tighter clustering, ranging only from 4.49 to 5.56, with ANOVA showing the averages' differences not being statistically significant ($F=0.999$, $p=0.439$). As with the prior question, this shows that there was no consensus among the students completing the survey on the relative importance of the factors.

The average scores on the four factors regarding systems and abstract thinking were statistically different ($F=123.782$, $p=0.000$) and ranged from 1.99 to 3.77. However, the 3.77 was for "Other." The three remaining factors only ranged from 1.99 to 2.15, and ANOVA showed the three averages to have an insignificant difference ($F=1.021$, $p=0.361$) when "Other" is removed from consideration.

The average scores on the five factors regarding importance in supporting order fulfillment ranged from 2.60 to 3.25, and ANOVA showed the differences to be statistically significant ($F=4.965$, $p=0.001$). The average scores on the eleven factors regarding skills and abilities an employee needs to have to prosper at an organization like Amazon ranged from 4.40 to 5.60, and ANOVA showed them to be statistically significant ($F=2.055$, $p=0.025$).

The conclusion above was strictly reported based on the statistical analysis, but the authors believe that these conclusions are not providing anything specific. In summary, if there was any real consensus among the students on these questions, then some of the items would have average rankings closer to one because most ranked them higher, while others would have average rankings closer to ten (or five). That did not happen. The rankings were consistently clustered together. That reveals a possible perception that the factors are equally important. Simply put, the main take of this paper is the rank orders of factors that are important to business students' perception of critical and marketable skills in job security (See Tables 2, 7, 12, 17, and 22 – showing overall average ranking of items within each question by participants in ascending orders.) It must be noted that ranking of skills by students (Table 22) moderately correlated with top 10 skills for 2020 as reported in The Future of Jobs Report: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution at World Economic Forum (2016) (See list of skills on page 2.)

Open-Questions Phase

Reviewing randomly selected responses reveals that business students perceived a set of collective skills to be useful in thriving at a company like Amazon. These common core skills are (I) Abstract thinking; (II) Thinking outside the box; (III) Creativity and Innovation; (IV) Learning and understanding new technologies; (V) Problem solving; (VI) Working hard and being diligent; and (VII) Collaboration (see Table 27).

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References

- Amazon.com, Inc. Retrieved from <https://en.wikipedia.org/wiki/Amazon.com>
- Clark, D. (2014). *Job security is dead, and here's why that's awesome*. Retrieved from <http://www.forbes.com/sites/dorieclark/2014/09/18/job-security-is-dead-and-heres-why-thats-awesome/#2abad6cb5909>
- Cusumano, M.A., & Yoffie, D.B. (2016). Extrapolating from Moore's Law. *Communications of The ACM*, 59(1), 33-35.
- D'Onfro, J. (2014). 14 Quirky things you didn't know about Amazon. Retrieved from <http://www.businessinsider.com/amazon-jeff-bezos-facts-story-history-2014-5?op=1/#amazon-wasnt-the-companys-original-name-1>
- Dugan, D. (2016). Is your job secure? 14 ways to stay indispensable. Retrieved from <http://www.salary.com/is-your-job-secure-14-ways-to-stay-indispensable/>
- Freedman, A. (2016). Amazon coins: What they are and how to use them. Retrieved from <http://www.laptopmag.com/articles/amazon-coins-faq>
- The Future of Jobs Report: Employment, skills and workforce strategy for the

- fourth industrial revolution. World Economic Forum. (2016). Global Challenge Insight Report. Retrieved from http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf
- Gewritz, D. (2016). Why Amazon is the king of innovation: Online retail mastery, Retrieved from <http://www.zdnet.com/article/why-amazon-is-the-king-of-innovation-the-store-stars/>
- Imran, A. A. (2014). A study on amazon: information systems, business strategies and E-CRM. Retrieved from https://www.researchgate.net/publication/261440748_A_Study_On_Amazon_Information_Systems_Business_Strategies_And_E-Crm
- Johnson, L. (2016). 9 things you need to know about the Amazon Prime Air drone delivery service. Retrieved from <http://www.digitalspy.com/tech/feature/a775701/9-things-you-need-to-know-about-the-amazon-prime-air-drone-delivery-service/>
- Kroenke, D. (2015). *Using MIS* (7th Edition), Prentice Hall.
- Logsdon, A. (2016). *Why children need to use abstract reasoning in school*. Retrieved from <https://www.verywell.com/what-is-abstract-reasoning-2162162>
- Morgan, J. (2014). *The future of work: attract new talent, build better leaders, and create a competitive organization*. John Wiley & Sons, New York, N.Y.
- Palmquist, M. (2014). The Amazon model: If you can't beat 'Em, work with 'Em. Retrieved from <http://www.strategy-business.com/blog/The-Amazon-Model-If-You-Cant-Beat-Em-Work-with-Em?gko=d33d3>
- Reich, R. (1992). *The work of nations*. Vintage Press, New York City.
- Tate, W. (2009). *The search for leadership: An organizational perspective*, Triarchy Press.