Employers' Perceptions of Online University Degrees and Their Relationship with the Recruitment and Selection Practices: The Case of Chile

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Abstract

The emergence of online university degree programs is an opportunity for Chile, struggling with low tertiary education attainment rates and a skills gap in the labor market. However, little attention has been dedicated to whether the employers in Chile perceive online and on-campus university education as equivalent. This study investigated the perceptions of a convenient sample of 38 employers from different industries, using Likert scale questions and a hypothetical hiring scenario. The survey results were then consulted with three experts who provided their interpretations. The findings indicated that the investigated sample generally does not perceive online and on-campus university education as equivalent but would not discard an online degree graduate only due to their academic background. However, when given a choice between a 100% online, 100% on-campus, and a hybrid degree holder, none of them would choose a 100% online degree graduate. Instead, 57% would hire a hybrid degree graduate and 43% a 100% on-campus graduate. There is a significant, positive correlation between the perceived equivalence in rigor, learning experience, and learning content and the willingness to hire an online degree graduate. The university's reputation is a crucial factor influencing hiring decisions in Chile. The degree's relevance may be insignificant compared to other factors considered by the hiring managers.

Introduction

The following research is built around employers' perceptions of online university degrees and the impact these perceptions have on their hiring practices. The first part of this research reviews current literature on employers' perceptions, online degrees, and hiring practices in Chile. The second part is an empirical study conducted to obtain primary data and explore the topic in the Chilean market context.

The data analyzed in this research have been collected through a survey during the peak of the pandemic and lockdown in Chile in June and July 2020. Moreover, before the COVID-19 pandemic erupted, Chile had been experiencing a similar-to-lockdown situation caused by the general social unrest and resulting

violence and state of emergency. These two occurrences had familiarized the Chilean society with distance working, teaching, and learning and the use of technologies enabling them to function under extraordinary circumstances. On the one hand, this context may have influenced the results of the research in a significant way; on the other, it has contributed significantly to the topic's relevance.

According to a study conducted by Navitas Ventures (2017, 4), about 50% of university leaders and 55% of the students expect the traditional university model to be disrupted by 2025. Global Center for Digital Business Transformation ranked Education in the 7th position of all industries regarding the potential for digital disruption (Fundacion Orange 2016, 6).

While these developments bring about some enormous benefits for the communities, including more accessible and cheaper access to education, and thus a contribution to creating a more inclusive society (IDC 2016, 6), there are still many controversies around them, especially concerning the supposedly lower quality of the content, lack of student-teacher and student-student interaction or one-size-fits-all approach used by the online education providers (The Department of Philosophy, San Jose State University 2013, 2). The perceptions of academics and students have been heavily investigated in that area.

Despite these drawbacks, emerging markets are expected to influence the global growth of the eLearning market. Considering a population of more than 600 million people and a generally low-performing system with significant issues in accessibility and inclusiveness, Latin America is a promising opportunity for ed-tech players (Docebo 2016, 42). Nevertheless, in Latin America, there are very few fully online universities. In most of the countries in the region, this is caused by the traditionally restrictive policies that have only recently become relatively loosened (Rama 2014, 37). The expansion of the virtual educational mode could be observed in Latin America in recent years, despite the resistance caused by the prevailing views on the educational dynamics (Rama 2014, 33).

Still, the region is internationally recognized for its economic and social inequalities. The social crisis that started in Chile in November 2019 is proof that the country has not escaped these problems. Since the 60s of the twentieth century, education has been the main driver for reducing these differences (IDC 2016, 4). Since then, regional, national and local strategies have been developed to increase the population's access to educational training at all levels. More than half a century from this, the need for the educational offer - especially at a higher level - remains

wide since, on average, 85% of young Latin Americans do not have this level of preparation, and where universities face significant challenges in growing their infrastructure and student population, as well as the reduction of their budgets (IDC 2016, 4). In this context, information technologies are critical tools to help the education sector solve some regional challenges. However, most universities have been excluded from technological integration and its benefits (IDC 2016, 4).

With the described background in view and framed by this context, this research attempts to explore online education from an angle that has often been omitted. The necessary assumption that grants relevance to the investigated questions is that, at least partially, a degree's value is determined by the employers' decisions on the labor market. This is an oversimplification, but, as demonstrated by some recent studies, for many students, a university degree is a way of enhancing their careers (Gallagher 2018, 4). For that to happen, however, the degree must be recognized by the employer, and its value reflected in the paycheck or responsibility placed on a graduate.

Separately, each element of this research topic has been thoroughly investigated in recent years. However, this particular combination of concepts has not yet been explored enough. Without a doubt, there is a substantial lack of research that aims to study the perceptions of online degrees as a credible credential among people making hiring decisions and the impact of these perceptions on their recruiting practices in Chile in the context of the global pandemic. Several scientific papers cited it as a recommendation for further research and indicated Latin America as a relatively poorly explored region in this context. The following research questions are, therefore, the focus of this paper:

1. How do employers in Chile perceive online university degrees and online degree graduates?

2. How do the Chilean employers' perceptions of online university degrees correlate with their willingness to hire an online university graduate?

According to positivist technological determinism theory which established a theoretical framework for analyzing the connection between online education and labor market prospects (Bahir 2014, 18) technology widens and facilitates access to education and consequently enables a rise on the social ladder. However, some more recent studies contradicted this theory by finding out that there is a substantial bias against online degree graduates when compared to the on-campus degree holders and suggesting that, among the employers, the general attitudes toward

online degrees are distrustful and somewhat antagonistic (Fogle & Elliott 2013, 24; Erden & Tekarslan 2014, 37; The Chronicle of Higher Education 2012, 13-14).

The lack of any scientific findings regarding this topic in Chile or Latin America is the reason for this study's explorative and descriptive nature. The available literature exploring the topic in the chosen context is insufficient to formulate viable hypotheses. The research questions have been based on similar studies in different contexts (Platt et al., 2014; Bahir, 2014; Erden & Tekarslan, 2014; Fogle & Elliott, 2013), and the hypotheses are developed as a result of this study.

The data collection method is a survey. Respondents are managers, executives, and professionals with hiring responsibilities working in Chile, and they have been reached through convenience sampling. The questionnaire for this research has been developed based on other similar studies (Platt, Raile, & Yu 2014, 494; Fogle & Elliott 2013, 4-5) and literature (Ertl et al. 2008, 69; Nehari & Bender1 978, 1; Velasco 2012, 13; Columbaro & Monaghan 2008, 4-5) suggesting the relevance of exploring certain specific matters related with the topic. Apart from descriptive statistics, comparison of means, paired t-tests, and correlation analysis are used to analyze and present the results.

Furthermore, expert interviews were conducted with three experts in HR management, digitalization in higher education, and innovation management who provided their interpretation of the survey results. In summary, descriptive statistics, correlation analysis, and expert interviews are combined to develop hypotheses that may serve as a basis for future research.

Empirical Analysis

Methodological framework

This is mixed-method exploratory research. To investigate the research questions, a survey is applied to a convenient sample of 38 employers representing different industries from Chile. Furthermore, survey results are consulted in three in-depth interviews with three other experts in the areas of HR management, academic research on digitalization in higher education, and innovation management to interpret the findings. Using expertise in their specialties and in-depth knowledge of the Chilean context, the interviewees provided their interpretation of the results. The overall methodological framework of this study is illustrated in

Figure 1. Since there is not much available research, and more importantly, no research investigating this topic in the Chilean context, the study takes an exploratory form. The outcome of this study is the development of hypotheses that may serve as the basis for further research. To explore research question 1, descriptive statistics is used. For each Likert question, the median, the mean, 95% confidence interval, standard deviation and standard error is calculated.

Furthermore, a histogram presents the exact distribution of responses visually. This, together with the standard deviation, gives additional insights into whether the mean and median result from very heterogenous views represent both extremes or homogenous responses, which would mean that all the respondents have very similar perceptions. Descriptive statistics indicators are provided for both independent and dependent variables.

The underlying assumption for the research question 2 is that there is a relationship between university degrees and labor market benefits. Following this logic, if the Chilean employers value traditional university degrees and are willing to hire university graduates, then they would also be willing to hire an online university graduate, as long as they perceive an online university degree to be generally equivalent to the traditional one.

Figure 1
Methodological framework
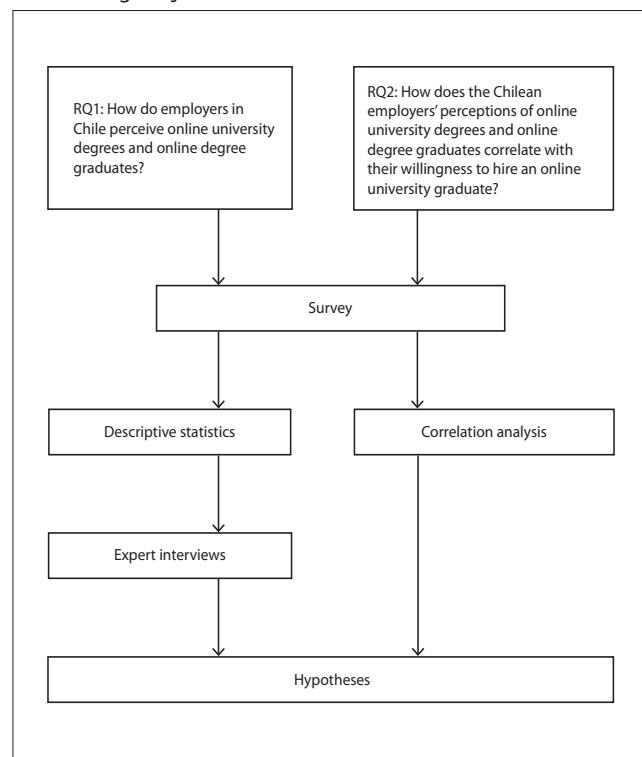
Source: Own research

To explore this question a correlation analysis is performed. It is done by conducting Spearman correlation test to calculate the correlation coefficient and a paired t-test to compute the p-value and thus validate the significance of the results. As illustrated, the analysis explores the relationship between the independent variables reflecting the respondents' attitudes towards online degrees and the dependent variables reflecting the respondents' impartiality in hiring considerations between an applicant with an online and a traditional degree, and the degree of the eventual willingness to hire a candidate with an online degree.

All calculations and graphs have been computed using Microsoft Excel, R programming language, and R Studio as an integrated development environment.

Questionnaire design

Due to the high degree of similitude in research purpose and design of this study to the study conducted by Fogle & Elliott (2013) in the US, the data analysis methods here are based on the ones used in the mentioned study. As this research is limited to only two research questions, it only adopts a part of the questionnaire used by Fogle & Elliott (2013), which is relevant for answering them, excluding the parts aimed at answering other research questions that are not so relevant for the topic of this research. Although the questionnaire design has in some ways been inspired by this study, each question has found its validation in the scientific literature on the topic. Table 1 shows the theoretical support for the use of each question exploring the attitude of the respondents.

The main independent variable measured by the survey is the respondents' attitude towards online education and the main dependent variable is the respondents' willingness to hire. Table 2 lists the variables in the survey used for analysis and their level of measure.

Attitude measuring questions are formulated as statements and each attitude is measured by the respondent's degree of agreement with these statements. The respondents should choose the attitude towards the statement which corresponds with his or her perceptions. For that purpose, a Likert scale is provided, with the following labels assigned to each value.

Table 1

Questionnaire design and rationale

Question	Rationale
Q1. I believe online and traditional universities' degrees are equal in rigor.	Studies measuring students' perceptions of online degrees used the perceived equivalence in rigor as one of the independent variables, having impact on the perceived value of a degree (Platt et al., 2014) Content analysis in the study conducted by (Adams 2008, 582) pointed out at academic rigor as one of the crucial factors for acceptability of online courses and degrees.
Q2. I would consider a degree from online and traditional universities the same in hiring decisions.	The question tries to determine the existence and the degree of any bias towards a candidate with an online degree on the application sorting stage of the selection process. Question adapted from: (Fogle & Elliott 2013, 5)
Q3. I would hire someone with an online degree for a position.	This straightforward question measures the respondent's attitude towards hiring an online degree graduate. Question adapted from: (Fogle & Elliott 2013, 5)
Q4. In my perception, graduates with online degrees have been mostly unsuccessful in my industry.	Career success of graduates is used as a key indicator to measure the quality of higher education (Teichler, 2009)
Q5. In my perception, online and traditional courses offer the same flexibility in terms of time.	Studies measuring students' perceptions of online degrees used the perceived flexibility as one of the independent variables. (Platt et al. 2014, 494). Furthermore, as some employers link the student's effort connected with commuting to and spending time on physical campus to their commitment (Columbaro & Monaghan, 2008), it is interesting to see whether a perceived difference in the degree of flexibility in terms of time between online and traditional courses has any relation with the respondent's willingness to hire an online graduate.
Q6. In my perception, online and traditional courses deliver the same content.	Similar studies measured the perceived gain of knowledge and compared online and face-to-face courses in this regard to determine the general equivalence of online and face-to-face classes (Platt et al. 2014, 494)

Table 1

Questionnaire design and rationale (cont.)

Question	Rationale
Q7. In my perception, online and traditional courses offer the same learning experience.	As the humanistic education theory suggests, learning experience is a valid measure of learning outcomes (Nehari & Bender 1978, 1). Quality assurance agencies and policymakers identify student learning experience as a top priority, and the literature suggests that student learning experience is a measure of quality in higher education (Ertl et al. 2008, 69). Content analysis in the study conducted by (Adams 2008, 582) pointed out educational experiences as one of the crucial factors for the acceptability of online courses and degrees.
Q8. The type of college or university (online versus on-campus) from which the applicant obtained his or her degree would be of no importance as a hiring criterion in our organization.	Literature suggests that some employers use academic qualifications as one of their hiring criteria (Velasco 2012, 13), (Kisanga, 2020). It is interesting to see whether the same applies to this survey's respondents as it might have implications for the RQ 2. If the respondent's organization does not use academic qualifications as a hiring criterion, the respondent's perceptions of online degrees may have no impact on his or her hiring decisions.
Q9. (Hypothetical question) In your perception which candidate would you hire?	This hypothetical question tries to establish a preference based solely on the source of their university degree CET PAR between different hypothetical candidates. Similar question was used by (Kisanga 2020, 8), (Fogle & Elliott 2013, 5),

Table 2

Variables and their level of measurement

Variable	Type of variable	Level of measure	Scale
Industry	Independent	Nominal	-
Respondent's position in the organization	Independent	Nominal	-
Q1. I believe online and traditional universities' degrees are equal in rigor. Label used for the variable: Perceived equivalence in rigor.	Independent	Ordinal	Likert scale 1-7
Q2. I would consider a degree from online and traditional universities the same in hiring decisions. Label used for the variable: Lack of bias in hiring considerations.	Dependent	Ordinal	Likert scale 1-7
Q3. I would hire someone with an online degree for a position. Label used for the variable: Willingness to hire an online graduate.	Dependent	Ordinal	Likert scale 1-7
Q4. In my perception, graduates with online degrees have been mostly unsuccessful in my industry. Label used for the variable: Perceived career failure of online graduates.	Independent	Ordinal	Likert scale 1-7
Q5. In my perception, online and traditional courses offer the same flexibility in terms of time. Label used for the variable: Perceived equivalence in terms of flexibility.	Independent	Ordinal	Likert scale 1-7

Table 2
Variables and their level of measurement (cont.)

Variable	Type of variable	Level of measure	Scale
Q6. In my perception, online and traditional courses deliver the same content. Label used for the variable: Perceived equivalence in terms of content.	Independent	Ordinal	Likert scale 1-7
Q7. In my perception, online and traditional courses offer the same learning experience. Label used for the variable: Perceived equivalence in terms of learning experience.	Independent	Ordinal	Likert scale 1-7
Q8. The type of university (online versus on-campus) from which the applicant obtained his or her degree would be of no importance as a hiring criterion in our organization. Label used for the variable: Type of degree as a hiring criterion.	Independent	Ordinal	Likert scale 1-7
Q9. (Hypothetical question) In your perception which candidate would you hire?	Dependent	Nominal	Multiple choice among On-campus, Online, and Hybrid of both on-campus and online

Table 3
Likert scale and values

1	2	3	4	5	6	7
Completely disagree	Strongly disagree	Rather disagree	Neither agree nor disagree	Rather agree	Strongly agree	Completely agree

In case of the hypothetical question, its purpose is to divide the respondents into 3 groups based on their response, to further explore the relationship between their responses to each of the independent variable questions and their preference for one hypothetical job candidate over the others. Due to the relatively small sample of survey respondents, it is more valid to use nonparametric statistics for comparisons. Therefore, for every Likert question, the population median is calculated. The value of a median is, by definition, equal or lower than the values of at least half of the population, and consequently, less than half of the population has a higher value. Additionally, a 95 percent confidence interval is provided, meaning that the probability that 95% confidence interval contains the population median is 95% (Fogle & Elliott 2013, 5). For each Likert question a following table is provided, together with a verbal presentation of the results.

A boxplot graph with 95% CI, containing the same data is presented for better visualization of the average perceptions of each variable and the spread of the answers. Since both median and mean are measures that tend to generalize and sometimes reflect a distorted version of reality, density graphs illustrating the spread of the answers to the Likert-scale questions are also presented. The purpose of this visualization is to find out whether the respondents tend to have similar views or whether they are rather divided in their perceptions.

To analyze the results of the hypothetical question and their relationship with the respondents' perceptions of online degrees, the means of responses to the attitude-measuring questions between the 3 groups are compared. However, since none of the respondents declared a preference for a candidate with the 100% online degree, the means of only two groups must be compared – those who would chose a candidate with a hybrid education degree and those who would prefer an applicant with a 100% on-campus education.

The second research question examines the relationship between the respondents' perceptions on different aspects of online higher education and their decision on hiring a candidate with an online university degree. To quantify the strength of these relationships, the Spearman correlation test is performed, and for better visualization of the results,

a series of scatterplots, illustrating the relationship between the dependent and each of the independent variables is generated. To test these results' statistical significance, a paired t-test is performed, and a p-value computed. The power of these correlations is tested assuming a significance level of 99%, the sample size of 38 and the respective Spearman correlation coefficient.

Expert interviews

Three experts have been chosen and contacted based on their area of specialty. As this study involves a problem that combines 3 fields of expertise: Human

Resources Management, Higher Education and the digital transformation, the chosen experts represent each of these fields.

The interview protocol was developed based on the questionnaire results. The relevant findings have been shown to the interviewees on handouts sent beforehand per e-mail together with the interview protocol. The handouts used both numerical and graphical representations of the relevant survey results for the interview. The same interview protocol and handout were used across all three interviews to ensure consistency among the interviews. The interview questions are listed in the table below.

Table 4

Expert Interview Protocol

Nr.	Question	Sub-question(-s)
1.	In which industry are you professionally active?	
2.	What position do you currently hold in your company?	
3.	When asked about their perception of the rigor of online and traditional universities' degrees, 18 out of 39 respondents were inclined to perceive both degrees as equal in terms of rigor, 4 respondents perceived them as unequal and 4 did not declare themselves on either side. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		How would you interpret these findings?
4.	When asked whether they would consider hiring a traditional and an online degree graduate the same, 20 out of 39 respondents would be inclined to do so, 16 would not and 3 did not declare themselves on either side. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		How would you interpret these findings?
5.	When asked about whether they would hire a candidate with an online degree or not, 24 respondents would hire, 11 would not hire and 4 did not declare themselves. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		How would you interpret these findings?
6.	When confronted with a statement that online degree graduates are mostly unsuccessful in their industry, 13 out of 39 respondents agreed with it, 10 disagreed and 16 neither agreed nor disagreed. Please have a look at your handout to observe the exact distribution of answers.	What do you think could by the reasons for these differences?
		Why, do you think, most of the respondents could neither agree nor disagree that the online degree graduates are mostly unsuccessful in their industry?
7.	When asked about their perception of flexibility of online and traditional courses in terms of time, 6 out of 39 respondents perceive it as the same, 28 perceive it as different and 5 did not declare themselves on either side. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		Why do you think the large majority perceive the flexibility in terms of time of online and traditional courses to be different?

Table 4

Expert Interview Protocol (cont.)

Nr.	Question	Sub-question(-s)
8.	When asked about their perception of content of online and traditional courses, 22 out of 39 respondents perceive it as the same, 12 perceive it as different and 5 did not declare themselves on either side. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		Why do you think a large majority perceive the content of online and traditional courses to be the same?
9.	When asked about their perception of the learning experience in online and traditional courses, 14 out of 39 respondents perceive it as the same experience, and 25 perceive it as a different learning experience. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		Why do you think a large majority perceive the learning experience in online and traditional courses to be different?
10.	When confronted with a statement that the type of university (online versus on-campus) from which an applicant obtained his or her degree would be of no importance as a hiring criterion in their organizations, 15 out of 39 respondents agreed, 20 disagreed and 4 neither agreed nor disagreed. Please have a look at your handout to observe the exact distribution of answers.	According to your experience, what do you think could by the reasons for these differences?
		How would you interpret these findings?
11.	In a hypothetical hiring scenario, when asked to choose between a candidate with a 100% traditional degree, a candidate with a degree obtained online and a candidate with a hybrid degree (on-campus and online), 43% chose a candidate with a 100% traditional degree and 57% a candidate with a hybrid degree (on-campus and online). None of our respondents chose a candidate with a degree obtained 100% online.	According to your experience, what do you think could by the reasons for these differences?
		How would you interpret these findings?
12.	According to the results of the survey, traditional and online degrees are perceived as more equivalent in terms of rigor and of learning experience among those respondents who prefer hybrid degree graduates as compared to those who would choose a traditional degree holder.	How would you interpret these findings?

Source: Own research

Results and Discussion

Descriptive statistics

Due to the difficulty in obtaining survey responses, this research has limited the questions to only those that are most relevant. Therefore, the descriptive statistics of the respondents is limited to their industry and role in the organization as these two factors are predicted to be influential when assessing candidates with university degrees and making hiring decisions. Most of the respondents have non-managerial roles, however, they participate in hiring decisions and have impact on the final recruitment and selection process outcome. Professionals belonging to this category co-design vacancy offers, establishing the minimum requirements and recruitment criteria, thus influencing the HR estimation of whether a candidate is a good fit. Another, relatively large part of the respondents (38%) are employees with supervisory or managerial responsibilities. As such, they have the final saying in hiring decisions, and since they envision the company's strategic

direction, it is ther responsibility to approve and start the recruitment processes, establishing the organizaton's needs for human resources and predifining the profile of and ideal fit for each position.

Second important insight about the group of survey respondents is the industries they represent. Figure 2 shows the number of respondents who are employed in companies operating in each of the illustrated industries.

As it can be observed, most of the industries have at least one representative. The proportions are also similar to the number of employees per sector in Chile, especially maintaining a focus on industries that tend to demand university graduates. Even though the distribution of the respondents is similar to the distribution of employees among different sectors in Chile, the share of people working in professional and scientific services, information and communication or finance and insurance is disproportionately higher.

The boxplot illustrates the overall attitudes towards different aspects of online degrees, online degree graduates, and towards hiring an online degree graduate.

Figure 2
*Distribution of respondents by industry*
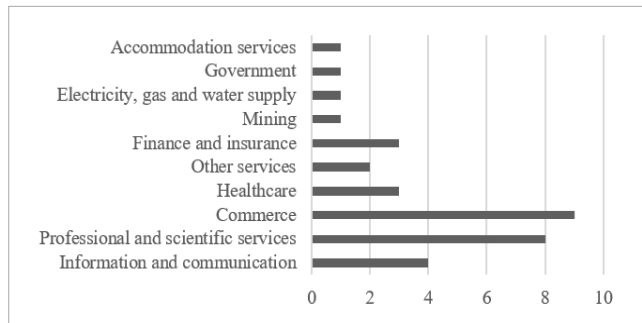
Source: Own research.

Each box illustrates the range of responses to each of the attitude-measuring questions on 1-7 Likert scale where 1 means that the respondent strongly disagrees with the statement and 7 means he or she strongly agrees with it. As it is an ordinal scale each response is a whole number and therefore the median represented on the plot as a bold line inside of a box is always a whole number. The plot illustrates that the spread of the responses for each question is rather big. The position of these boxes and the position of median should provide a general idea into what the collective attitudes towards the introduced concepts were. The purpose of this plot is to show a general overview of the results. In the following sections, each variable is presented separately with the use of measures that may

offer a deeper insight into their meaning.

Figure 3
Boxplot of responses to the attitude-measuring questions
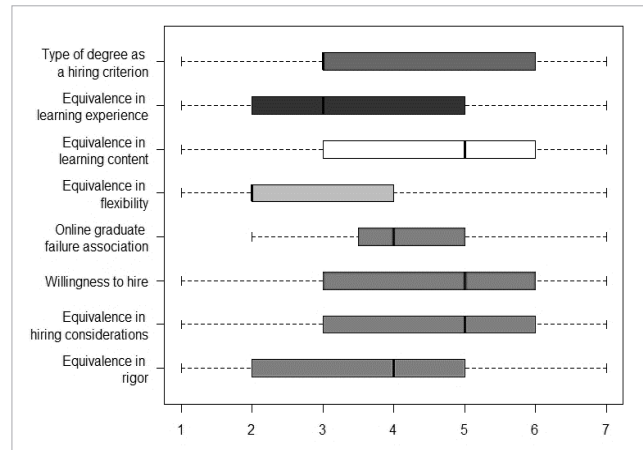
Source: Own research

Question number one explores the respondent's perception of equivalence in rigor between an online and a face-to-face university degree.

Table 5
Descriptive statistics indicators for perceived equivalence in rigor

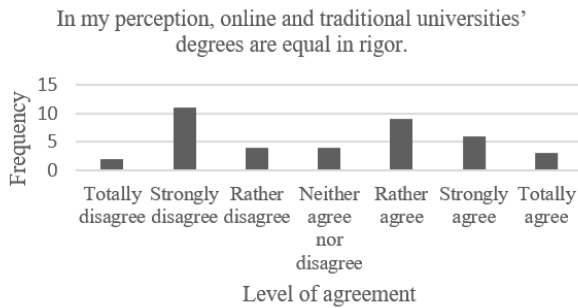| Mean: 4.027	Lower Limit of 95% Confidence Interval: 3.436	Upper Limit of 95% Confidence Interval: 4.618
Median: 4	Standard Deviation: 1.833	Standard Error: 0.301

Source: Own research

The median of responses is 4, the standard deviation, meaning the average difference between the average and the actual responses is 1.83. On the histogram it is possible to see that the respondents' responses towards this statement are divided. Many of the respondents have positioned themselves closer to the right side of the plot, by declaring that they agree or strongly agree with the statement. Another large group strongly disagreed with the statement that the degree of rigor in both types of the universities is equal. The answer chosen by the most significant number of the respondents was "Strongly disagree".

The median of responses is 2, the standard deviation 1.71. The histogram shows that, there have been more individuals declaring that they strongly or even completely disagree with the statement than those who agreed with it.

Figure 4

Distribution of responses to the question measuring the perceived equivalence in rigor of online and traditional universities

Source: Own research

Table 6

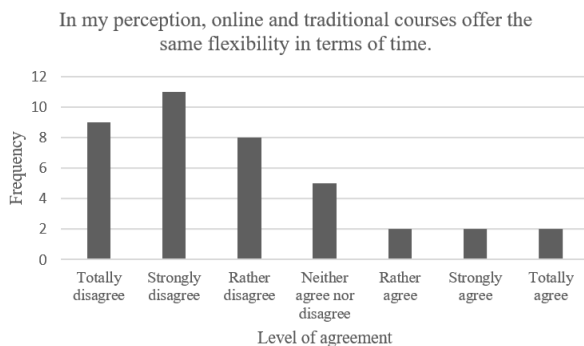*Descriptive statistics indicators for perceived equivalence in flexibility in terms of time*

Mean: 4.027	Lower Limit wof 95% Confidence Interval: 3.436	Upper Limit of 95% Confidence Interval: 4.618
Median: 4	Standard Deviation: 1.833	Standard Error: 0.301

Source: Own research

The median response to that statement is 5 and the standard deviation 1.70. On the histogram we can see that the responses are distributed across the whole scale but most of them are concentrated on the right side of the plot and "Strongly agree" is the most popular response.

Figure 5

Distribution of responses to the question measuring the perceived equivalence in terms of flexibility between online and traditional courses
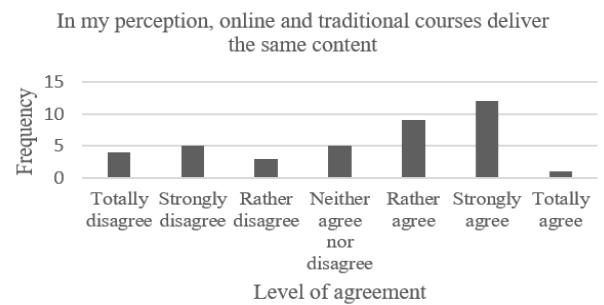

Source: Own research

Table 7

Descriptive statistics indicators for perceived equivalence in learning content

Mean: 4.432	Lower Limit of 95% Confidence Interval: 3.882	Upper limit of 95% Confidence Interval: 4.983
Median: 5	Standard Deviation: 1.708	Standard Error: 0.281

Source: Own research

Figure 6

Distribution of responses to the question measuring the perceived equivalence in terms of content between online and traditional courses

Source: Own research

Table 8

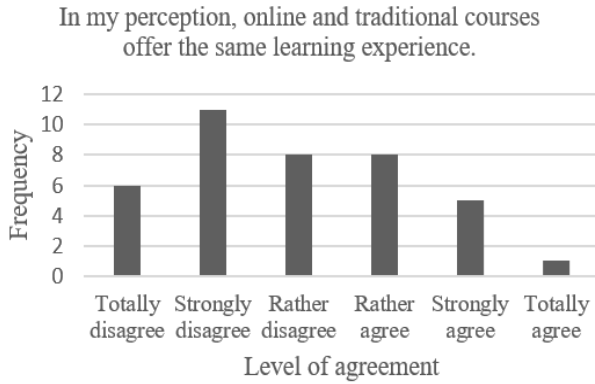*Descriptive statistics indicators for perceived equivalence in learning experience*

Mean: 3.405	Lower Limit of 95% Confidence Interval: 2.825	Upper Limit of 95% Confidence Interval: 3.986
Median: 3	Standard Deviation: 1.802	Standard Error: 0.296

Source: Own research

The median of the responses is 3 and the standard deviation from the mean 1.8. The histogram shows that the responses are unevenly distributed with most of them concentrated on the left side and with "Strongly disagree" being the most popular answer.

Figure 7

Distribution of responses to the question measuring the perceived equivalence in terms of learning experience between online and traditional courses

In my perception, online and traditional courses offer the same learning experience.

Source: Own research

Table 9

Descriptive statistics indicators for perceived career failure of online graduates

| Mean: 4.243	Lower Limit of 95% Confidence Interval: 3.818	Upper Limit of 95% Confidence Interval: 4.669
Median: 4	Standard Deviation: 1.321	Standard Error: 0.217

Source: Own research

The median of the responses to this question is 4 with a standard deviation of 1.3. The histogram shows that by far the most often chosen answer was "Neither agree nor disagree".

Figure 8

Distribution of responses to the question measuring the perceived lack of success of online degree graduates in respondent's industry

In my perception, graduates with online degrees have been mostly unsuccessful in my industry.
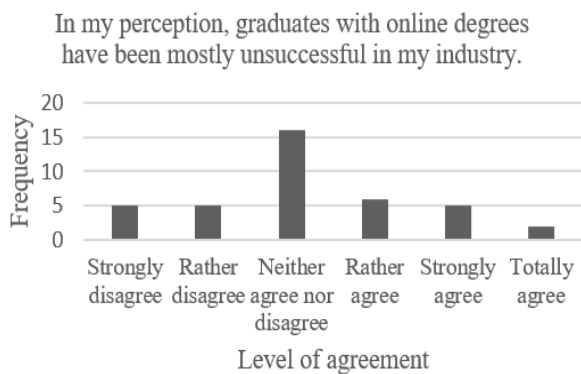
Source: Own research.

With a considerable knowledge of the respondents' perception towards online degrees and online degree graduates, in this subsection, the attitudes towards hiring online graduates. The variables analyzed in this part are defined as dependent variables. The purpose of the following question is to establish whether in the organizations represented by the respondents, there are any official guidelines referring to the type of degree as a hiring criterion.
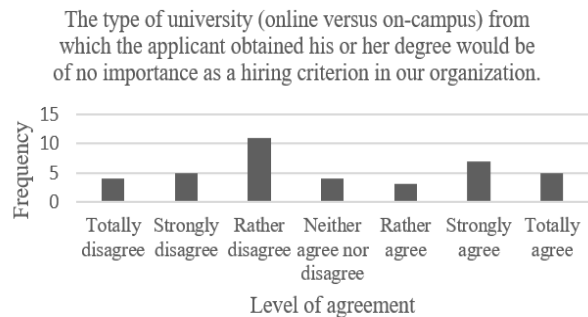
Table 10

Descriptive statistics indicators for a type of degree as a hiring criterion

Mean: 3.946	Lower Limit of 95% Confidence Interval: 3.315	Upper Limit of 95% Confidence Interval: 4.577
Median: 3	Standard Deviation: 1.957	Standard Error: 0.322

Source: Own research

Figure 9

Distribution of responses to the question measuring the degree to which a type of degree is a hiring criterion in the respondent's organizations

The type of university (online versus on-campus) from which the applicant obtained his or her degree would be of no importance as a hiring criterion in our organization.

Source: Own research

The following variable measures whether the respondent manifests bias towards any type of university degree on the sorting stage of the selection process.
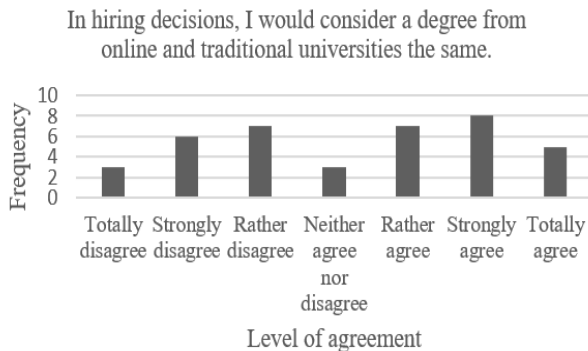
Table 11

Descriptive statistics indicators measuring the equivalence in hiring considerations between a traditional and online graduate

Mean: 4.162	Lower Limit of 95% Confidence Interval: 3.543	Upper Limit of 95% Confidence Interval: 4.782
Median: 5	Standard Deviation: 1.922	Standard Error: 0.316

Source: Own research

The density plot shows that, while the most significant number of the responses are strongly agree – 8 respondents, there is another large group who responded rather disagree – 7 respondents.

Figure 10

Distribution of responses to the question measuring the equivalence in hiring considerations of an online and traditional degree holder
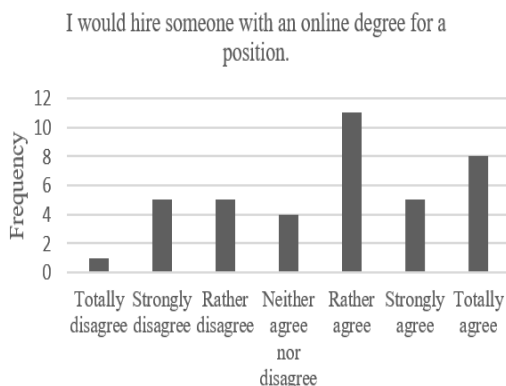

Source: Own research

The table displays the respondents' answers to the question regarding the consideration given to the applicants with online versus traditional degree. The median of answers is 5, and the standard deviation 1.77.

Table 12

Descriptive statistics indicators measuring the willingness to hire an online graduate

Mean: 4.622	Lower Limit of 95% Confidence Interval: 4.051	Upper Limit of 95% Confidence Interval: 5.192
Median: 5	Standard Deviation: 1.769	Standard Error: 0.291

Source: Own research

Figure 11

Distribution of responses to the question measuring the willingness to hire an online graduate
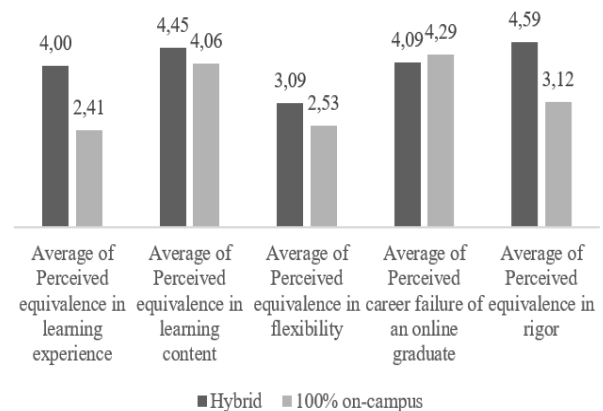

Source: Own research

The histogram demonstrates that the response which was chosen by the most significant number of the respondents was "Rather agree" – 11 respondents. "Totally agree" comes in second with 8 respondents selecting this answer.

There was a multiple-choice question, inquiring the respondents about which candidate they would select based on the type of his/her degree and assuming that all other variables are excluded. The respondents were given a choice between a candidate with a degree obtained 100% online, a hybrid degree graduate and a candidate with a 100% traditionally obtained degree. 21 respondents would choose a candidate with a hybrid degree and 17 respondents would choose a candidate with a 100% traditional degree. None of the respondents selected a candidate with a degree obtained 100% online.

Figure 12

Clustered histogram comparing the means of perceptions question between the respondents who prefer a hybrid and those who would prefer a 100% on-campus degree holder

Source: Own research

This is an analysis of a dependent variable and therefore it is interesting to explore its relationship with the independent variables to see whether the respondent's preference is in any way related to his or her perceptions of the 4 aspects of online degrees and online degree graduates. A simple comparison of means is performed to compare the differences in perceptions between the respondents who declared preference for hiring a candidate with a 100% on-campus degree and those who would prefer a hybrid-degree graduate. Additionally, to test the validity of each of these comparisons a t-test for each comparison is conducted.

As this clustered column plot shows, there are some significant differences in the means of responses between the respondents who declared preference of hybrid over an on-campus degree graduate and those who would prefer hiring a 100% on-campus degree graduate.

Table 13
Comparison of means of perceptions between the respondents who prefer a hybrid and those who would prefer a 100% on-campus degree holder

	Hybrid	100% on-campus	p-value
Average of perceived equivalence in learning experience	4	2.41	0.004
Average of perceived equivalence in learning content	4.45	4.06	0.49
Average of perceived equivalence in flexibility	3.09	2.53	0.29
Average of perceived career failure of an online graduate	4.09	4.29	0.62
Average of perceived equivalence in rigor	4.59	3.12	0.01

Source: Own research

Table 14
Correlations between the independent variables and the willingness to hire

Variable	Median	Spearman correlation coefficient with willingness to hire
Perception of equivalence in rigor	4	0.58***
Perception of equivalence in consideration	5	0.76***
Perception of equivalence in learning experience	3	0.54***
Perception of the equivalence in content	5	0.39***
Perception of career failure of online graduates	4	0.18**
Perception of flexibility in terms of time	2	0.025*

*** p-value less than 1%, ** p-value less than 15%, * p-value more than 50%
Source: Own research.

The p-value was lower that 5% only in case of the compared means of the Perceived equivalence in learning experience and the Perceived equivalence in rigor. Also, the comparison of mean values shows the biggest difference in case of these two variables.

Correlation analysis - the relationship between willingness to hire and attitudes towards online degrees

The main purpose of this section is exploring the second research question: How do the employer's perceptions of online degrees and online degree graduates relate with their willingness to hire an online degree graduate? The best approach for exploring this relationship is the correlation analysis. The analysis of the respondents' perceptions has already been provided in the previous section. Also, some insights into the relationship between these attitudes and the preference for one hypothetical candidate over the other with the source of his or her degree being the unique changed variable. Now, the goal is to investigate

whether these variables are related to the dependent variables: willingness to hire and equivalence in hiring considerations. Moreover, the relationship between the two dependent variables is also investigated. Table 14 shows the median and Spearman correlation coefficient value with the dependent variable willingness to hire. Also, the paired t-test has been conducted for each of the correlations to test the significance of the results. The p-values are divided into three categories: less than 1%, less than 15% and less than 50%. Only the correlations belonging to the first category and marked with three stars are statistically significant.

The highest correlation coefficient has been found between the two dependent variables.

The other two variables with a relatively strong correlation coefficient with willingness to hire are the perceived equivalence in rigor and the perceived equivalence in learning experience. The perceived career failure of online graduates or flexibility in terms of time have been found not related to the dependent variables.

Only the significant correlations will be investigated in a deeper way. Table 15 displays the same values as table but for a different dependent variable: equivalence in hiring considerations.

The strength of this relationship is better visible on the scatterplot.

Figure 13
Scatterplot illustrating the relationship between the equivalence in hiring considerations and the willingness to hire an online graduate
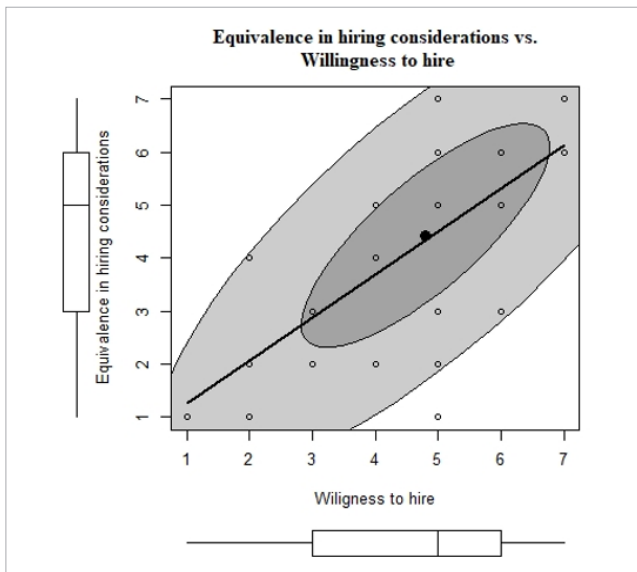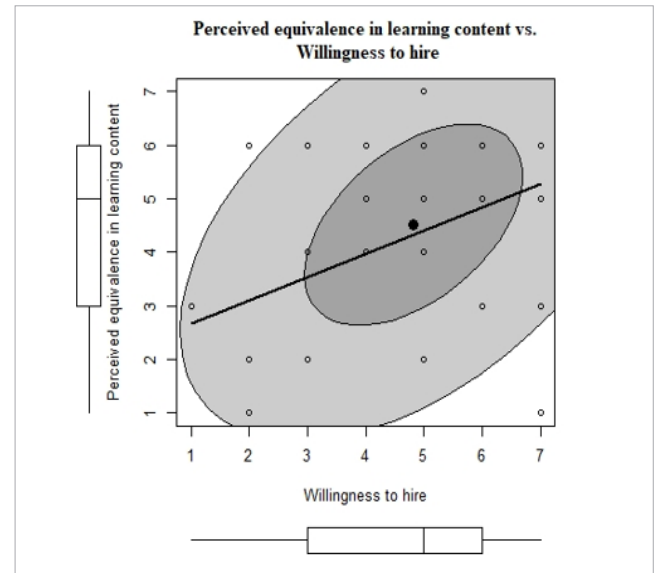

Source: Own research

The strength of this correlation implies that those respondents who would equally consider hiring a candidate with an online degree as a traditional one would be more willing to eventually hire an online graduate. The power of this correlation, given the number of responses and the required significance of 0.99 is 0.99, demonstrating that, apart from being rather strong, it is also statistically significant and powerful. Therefore, it is not necessary to analyze the individual independent variable relationship with each dependent variable separately. Instead, the analysis is conducted between each relevant variable and the dependent variable Willingness to hire, since the same analysis is also valid for the relationship with the variable Equivalence in hiring considerations. The Spearman correlation coefficient between the perceived equivalence in content and the willingness to hire is 0.36 and is plotted below.

In fact, this aspect of the degree programs has a weaker relationship with the dependent variable than the perceived equivalence in learning experience or in rigor. The mentioned relationships are illustrated below, and the linear relationship is visibly more significant in both cases.

Figure 14
Scatterplot illustrating the relationship between the perceived equivalence of learning content and the willingness to hire an online graduate

Source: Own research

Figure 15
Scatterplot illustrating the relationship between the perceived equivalence in learning experience and the willingness to hire an online graduate
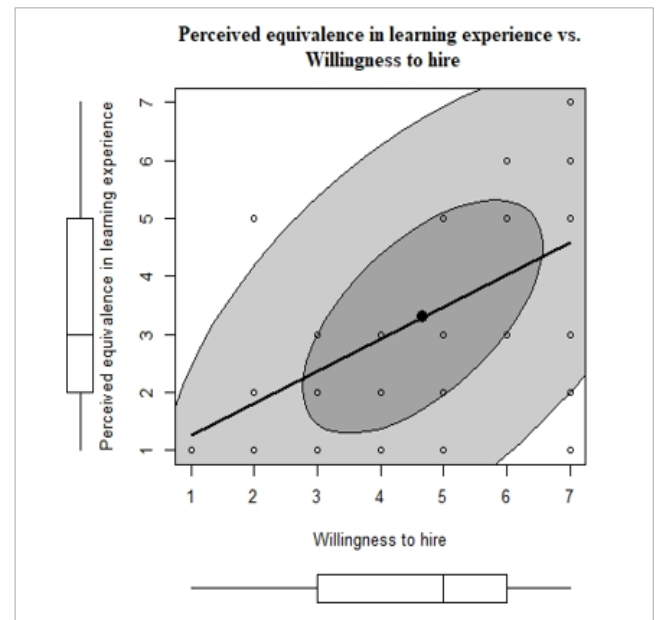
Source: Own research

The spearman correlation coefficient of the Perceived equivalence in learning experience between online and traditional courses with Willingness to hire is 0.54, indicating that respondents' answers to these 2 questions were similar. The correlation coefficient has been calculated using R's correlation test function and the resulting p-value was significantly lower than 1 percent. Additionally, a

paired sample t-test has been conducted and the computed p-value was 0.009, significantly lower than the 95% significance level, suggesting the statistical significance of the result. Th t value was equal to -2.74 and the 95% confidence interval was between -1.29 and -0.19. The power test for this correlation indicated that given the number of responses and requiring the significance level to be at 99%, the power is estimated at 99%. The implication is that those respondents who perceive the students to have similar learning experience when studying online and on-campus,

tend to be more willing to hire an online graduate.

A similar relationship was found between the Perceived equivalence in rigor and Willingness to hire. In this case the Spearman correlation coefficient is 0.58 indicating a very significant relationship between the two variables. This implies that the respondents who perceive the rigor in online degree programs to be similar to the rigor of the on-campus degree programs are also more willing to hire an applicant with an online degree.

Table 15

*Correlations between each of the independent variables and the equivalence in hiring considerations*

Variable	Median	Correlation coefficient with equivalence in hiring considerations
Perception of equivalence in rigor	4	0.50***
Willingness to hire	5	0.76***
Perception of equivalence in learning experience	3	0.54***
Perception of the equivalence in content	5	0.36**
Perception of career failure of online graduates	4	0.20*
Perception of flexibility in terms of time	2	0.10*

*** p-value less than 1%, ** p-value less than 15%, * p-value more than 50%

Source: Own research

Figure 16

Scatterplot illustrating the relationship between the perceived equivalence in rigor and the willingness to hire an online graduate
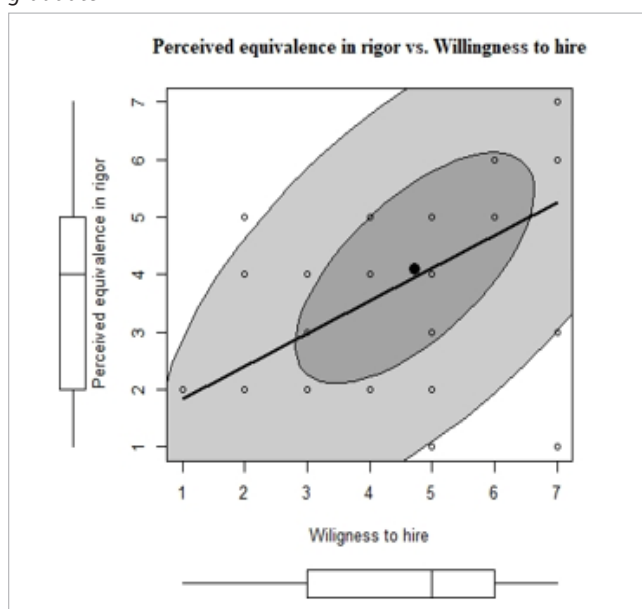
Source: Own research

In-depth expert interviews

Expert 1 is a Human Resources Management leader in a global technology company. At the time of the interview, he is specifically responsible for Global Learning Experience He has been professionally active in the field of HRM in Chile for about 8 years. Expert 2 is a Director of a Business School of Chilean Universities. He has experience managing and participating in projects innovating Higher Education in Chile and oversees establishing and managing of face-to-face, entirely online and blended degree programs. Expert 3 is professionally active in the field of business consulting, specifically data science on the position of New Ventures Managers, he provides consulting regarding digital transformation and innovation management. The experts have been shown the exact distribution of the responses to the survey questions. Here is their feedback.

- The respondents believe online and traditional degrees do not offer the same standard.

- The name of the university a candidate graduated from is crucial. The modality of studying is not significant in these considerations.

- The number of people graduating from 100% online degree programs in Chile is insufficient for employers to have strong perceptions in this regard.

- The gap between the online and face-to-face courses' content is slowly disappearing.

- Hiring in local companies does not consider the candidate's skills, but rather his/her social position and networking potential.

- The respondents are very biased in their responses since they do not have enough experience to objectively compare the high number of online and face-to-face degree programs.

Research Findings

The technological determinism theory states that technology serves as an enabling tool for widening access to learning and consequently facilitates climbing up the social ladder (Bahir 2014, 18). One of the ways the technology widens access to education is through online university degree programs. Therefore, the positivist technological determinism theory supports the conclusion that online degrees provide a way for an individual to advance within the society.

This conclusion, however, has been contradicted by several empirical studies on the employers' perceptions of online degree graduates and, subsequently the value of their degree on the labor market (Chaney 2002, 71; Protopsaltis & Baum 2019, 13; Erden & Tekarslan 2014, 37; Roberto & Johnson 2019, 3; Grossman & Johnson 2016, 91; Domanic 2018, 91; Kisanga 2020, 13). These studies suggest that the traditional degree holders are preferred in hiring scenarios and therefore the technology, in this case, is not an enabler for advancement within the society.

To explore the research question 1 on how Chilean employers perceive online degrees and online degree graduates, the literature findings, survey results and their interpretation by three selected experts should be set against each other. According to the questionnaire responses, the investigated sample of employers tends to perceive online degrees as not equivalent to traditional degrees in most aspects. However, the fact that most employers declared that they would consider a job applicant with an online degree and with an on-campus degree the same, might indicate that they do not acknowledge any significant difference in terms of value of the respective degrees. Although the responses to the questions measuring the equivalence of online and traditional degrees in hiring considerations and the willingness to hire an online graduate suggest rather positive attitudes towards hiring online degree graduates, some literature suggests that the opportunity

to apply for the most elite positions in some prestigious organizations is limited only to the graduates of some selected elite universities as it can only be done through the career offices of these institutions (Aracena & Cristia 2017, 141).

Consistently with the findings of (Adams & DeFleur 2006, 14-15) , according to Expert 1, the name of the university a candidate graduated from is perhaps the single most important factor when it comes to hiring decisions, as the employers expect expanding valuable networks by employing graduates from Chile's top universities. The modality is irrelevant if the title is issued by one of these institutions. That would suggest that in order to be hired for a high-responsibility position in a prestigious organization in Chile, it is necessary to have graduated from one of these establishments and hence, online degrees, if not issued by one of them, may prove to be of less value on the labor market. Also according to Aracena & Cristia (2017, 141), recruitment process for prestigious graduate positions is often conducted exclusively via employment offices of the mentioned universities. Currently, none of the mentioned institutions offers an entirely online degree program. This finding, however, leaves the comparison between an online and a traditional degree, issued by a the same or by two comparable institutions, unresolved.

Consistently with the findings of (Fogle & Elliott 2013, 24), according to both Expert 2 and 3's interpretation of survey results, online degrees are generally perceived with distrust. The possible reasons for that include the fact that most institutions are still on their learning curve when it comes to developing good-quality online courses. Moreover, the critical mass of online degree graduates in Chile is very low, so most employers lack the basis necessary to formulate an informed opinion, which leaves them even more open to bias.

The insights from expert interviews are consistent with most of the literature that investigated the topic in different countries. Combining the literature findings, survey results and expert interviews, leads to formulating a conclusion that, currently, an online degree is perceived as less credible in the eyes of employers in Chile than a traditional degree, even if both were issued by the same or by two comparable universities.

Research question 2 asks about the relationship between the above discussed perceptions and the employer's willingness to hire an online degree applicant. To explore it, the results of the correlation analysis should be set together with the expert's comments and analyzed. The correlation analysis has shown that the employers who perceive the rigor, learning experience and learning content to be equivalent in online and on-campus university degree programs, tend to be more willing to hire an online graduate in a hypothetical scenario. Furthermore, they tend to be more impartial (assuming the type of a degree as

the only variable) in their hiring considerations and tend to prefer a hybrid over an 100% on-campus degree holder in a hiring scenario. According to Expert 2, the employers who know and appreciate online space, infer that the institutions that impart online education are prepared to deliver it in similar quality in both online and face-to-face modalities. This interpretation is consistent with (Adams & DeFleur 2006, 6) whose findings also pointed at a general distrust towards institutions lacking any physical infrastructure. That might be why 57% of the respondents chose a candidate with a hybrid degree in the hypothetical scenario while none chose a purely online degree holder.

The findings of this study suggest that the demand for EdTech solutions in Chile might grow. Regardless of whether this demand comes from foreign online universities entering the Chilean market or from the local higher education institutions starting to offer more online courses, the creators of digital educational content may benefit from this development. With time, a development of an appropriate institutional infrastructure is to be expected and a constantly growing demand for EdTech companies' services and products.

For the existing online universities, regardless of their geographical origin, these results may point out Chile as a potentially attractive market for expansion. With an expensive higher education system, and a considerable acceptance of online degrees among the employers, there are reasons to suppose that foreign online universities could find their place on the Chilean market. However, they should keep in mind that some cultural and societal factors such as the importance of networking and strongly hierarchical society might result in the employers' preference for the university degrees awarded by the local, high-ranked and prestigious universities over the degrees issued by foreign institutions which are unknown to them.

For the traditional universities, equal recognition of an online and on-campus degree among employers would mean the urgent necessity to adapt to new market rules. Enjoying a relatively exclusive position being one of the few campus-based higher education providers would no longer position them in a privileged position compared to the global online university education providers. Under the assumption that students value the university degree in the function of the labor market benefits, it apports, traditional, campus-based degree programs in Chile would have to rethink their value proposition to keep attracting new students and be able to compete against less expensive competitors from abroad who are perhaps equally good at creating value in the form of the labor market benefits for their clients – the Chilean students.

On the other hand, the expert interviews suggest that having

a brand recognized as one of the top-tier higher education institutions is an unbeatable value proposition the Chilean university can offer its students. This would mean that the most prestigious Chilean universities have no reasons to worry as the Chilean students and employers will always prefer their degrees over any foreign credential.

Furthermore, the established Chilean universities enjoy a reputation built upon decades of delivering higher education and conducting research. Since this reputation is one of the most crucial factors determining the value of a degree on the job market, these institutions could become successful at imparting online education and awarding their students with degrees that Chilean employers would highly value.

The findings of this study suggest that the demand for EdTech solutions in Chile might grow. Regardless of whether this demand comes from foreign online universities entering the Chilean market or local higher education institutions starting to offer more online courses, the creators of digital educational content may benefit from this development. With time, the development of an appropriate institutional infrastructure is expected, with a constantly growing demand for EdTech companies' services and products.

Conclusion

This research aimed to explore the status quo of online university degree perceptions among Chilean employers and how these perceptions are related with their hiring decisions. The basic assumption for the relevance of this topic was that, for many individuals, attaining a university degree is a way for advancement within the society and for career development. The review of the literature available on the topic allowed to develop the following two research questions:

1. How do employers in Chile perceive online university degrees and online degree graduates?
2. How does the Chilean employers' perceptions of online university degrees correlate with their willingness to hire an online university graduate?

To explore these questions a survey was conducted exploring the Chilean employer's perceptions, attitudes and hypothetical behaviors. The results indicated that, indeed, Chilean employers do not tend to perceive different aspects of online degree programs as equivalent to the traditional degree programs, but they still tend to be willing to hire online degree holders and do not express any bias against them in hiring considerations. However, with the type of degree being the only variable, they tend to prefer other types of applicants

than those with a 100% online degree. The most preferred type of degree is a university degree attained through hybrid education, combining online distance with the traditional campus-based learning modalities.

Regarding the second question, it was also confirmed that the perceptions on equivalence of different aspects of online and traditional degree programs are positively correlated with the willingness to hire and impartiality in hiring considerations between an online and on-campus university graduate. However, experts suggested that this correlation does not imply that employer's perceptions of online degrees have any impact on their hiring decisions, as these are mostly influenced by the name of the university the applicant has graduated from and have little to do with the modality in which he or she studied.

The combination of a literature review, a quantitative survey and three expert interviews led to the development of the following hypotheses:

1. Online degrees are a less valuable credential on the Chilean job market, because online degree programs are currently not offered by the most reputable universities in Chile.

2. When compared to traditional degrees, online degrees are perceived as less credible in the eyes of employers in Chile even if both were issued by the same or by two comparable universities.

3. If awarded by high-ranked Chilean universities, hybrid degrees are the most valued type of degrees by the employers in Chile.

Finally, the implications of these findings for online degree students, Chilean employers, traditional Chilean universities, EdTech providers and foreign online universities have been discussed. Despite the rather positive attitudes towards hiring online degree graduates among the study participants, the cultural and societal factors may still play an important role in the employer's decision-making process and make them prefer the applicants holding degrees issued by highly ranked Chilean institutions which are associated with good quality and high social position of the graduates and which offer potential for expanding valuable networks.

The main limitations for this study consist of the relatively small number of observations that could be gathered due to the time and geographical distance. Most of the data had to be gathered online. Moreover, both the social outburst at the time in Chile and the COVID-19 emergency on global scale have made it more difficult to reach the companies that would fit the proposed research design. It would be therefore recommendable to study a larger sample of employers for generalizable results.

It would be interesting to take this analysis further and apply the findings of this study to develop a value proposition for selected higher education institutions that, considering both internal and external factors, should be offered to maximize the perceived value of a degree. Moreover, it would be interesting to find out whether there is any relationship between the type of employees' degrees and the company's performance. It would be a valuable information for the hiring managers to calibrate their perceptions and criteria to elaborate a more results-oriented and data-driven approach to recruiting. Unfortunately, the scope and scale of this research did not permit to investigate these aspects of the topic.

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Zaznavanje spletnih univerzitetnih diplom s strani delodajalcev in njihova povezanost s prakso zaposlovanja in izbire: primer Čila

Izvleček

Pojav spletnih univerzitetnih študijskih programov je priložnost za Čile, ki se spopada z nizkimi stopnjami dosežene terciarne izobrazbe in vrzeljo v znanju na trgu dela. Vendar je bilo doslej malo pozornosti namenjene temu ali delodajalci v Čilu zaznavajo spletno in univerzitetno izobraževanje v živo kot enakovredno. Ta študija je z vprašanji po Likertovi lestvici in hipotetičnim scenarijem zaposlovanja raziskala zaznave priročnega vzorca 38 delodajalcev iz različnih panog. O rezultatih raziskave so se nato posvetovali s tremi strokovnjaki, ki so podali svoje razlage. Ugotovitve so pokazale, da raziskovan vzorec na splošno ne zaznava spletnega in univerzitetnega izobraževanja v živo kot enakovrednih, vendar ne bi zavrnil diplomanta s spletno diplomo samo zaradi njegovega akademskega ozadja. Vendar, ko bi izbirali med diplomantom 100-odstotno spletnega izobraževanja in diplomantom 100-odstotnega izobraževanja v živo ter diplomantom hibridnega študija, nihče od njih ne bi izbral diplomanta 100-odstotno spletnega študija. Namesto tega bi jih 57 % zaposlilo diplomanta hibridnega študija, 43 % pa diplomanta 100-odstotnega študija v živo. Obstaja pomembna, pozitivna korelacija med zaznano enakovrednostjo strogosti, učnih izkušenj in učnih vsebin ter pripravljenostjo zaposliti diplomanta spletnega študija. Ugled univerze je ključni dejavnik, ki vpliva na odločitve o zaposlovanju v Čilu. Ustreznost diplome je lahko nepomembna v primerjavi z drugimi dejavniki, ki jih upoštevajo vodje oddelkov za zaposlovanje.

Ključne besede: visokošolsko izobraževanje, spletne univerzitetne diplome, zaposlovanje, Čile