Identifying the Gender Differences in Response to Graduate Unemployment: Evidence from Sri Lanka

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ABSTRACT

Employment opportunities are available for graduates from certain disciplines, while for a considerable proportion of the graduates, finding employment has become a problem. Therefore, enhancing the employability of graduates is a challenge faced by the university system of Sri Lanka. This research contains the findings based on economic, social and geographical attributes for gender difference in response to graduate unemployment. A questionnaire was distributed among the graduates of selected two faculties of General Sir John Kotelawala Defense University, Ratmalana. The study aimed to identify the impact of gender on graduate unemployment, causes for the gender differences, and the impact of geographical, social and economic factors in response to each gender. Primary data was collected through the questionnaire. Chi square test was used to determine the individual impact of independent variables towards the dependent variable, and binary logistic regression has been used to determine the collective impact of independent variables towards the dependent variable. The findings suggest that age, father's education, satisfaction with higher education/ training, job preference, job satisfaction and impact of gender on finding a job (as per the thoughts) have a significant relationship with employability status of the male graduates. Furthermore, academic qualifications, monthly income of families, satisfaction with higher education and the training, job satisfaction and impact of gender of the female graduates (as per their experiences) have a significant relationship with employability status of the female graduates.

1. Introduction

Graduate unemployment is simply, unemployment among people who have an academic degree or equivalent and higher education qualifications. Statistics, (2018) defines unemployed as persons available and/or looking for work, and who did not work, and taken steps to find a job during last four weeks and ready to accept a job given a work opportunity within next two weeks. It is important to note that this situation is more common in developing countries rather than in developed countries. Singam, (2017) mentions that unemployment rate in Sri Lanka is high when compared to other developing countries. Nanayakkara, (2004) comments graduate unemployment can be worse in future as the number of unemployed graduates is increasing annually.

Pool & Sewell, (2007) give definition for employability as, having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful. As per the definition, employability depends on the skills and competencies and the ability of the employee to work with minimum supervision. (Jayasingha & Suraweera , 2020) Higher education system plays a lead role in the social and cultural life of a country and also regarding the employability of a person. (Wickramasinghe, 2018) Jayasingha & Suraweera, (2020) state that university education is the core of higher education which generates graduates who are most intellectually valued human capital in the world. Graduates are known as all individuals who have obtained bachelors' degrees or equivalents and higher education qualifications (Van Der Burg & Van Broekhuizen, Graduate unemployment in South Africa: A much exaggerated problem, 2012).

The university education system in Sri Lanka is a state monopoly which can be divided into a three-layer system: public universities, public advanced technical institutions and private post-secondary institutions. (Chandrasiri, 2003) Universities enable national growth by providing skilled human resources. Ambepitiya, (2016) notes, education has a responsibility to supply and fulfill requirements, and authorities have a responsibility to maintain a balance between blue collar and white-collar jobs. The quality of the degree programs is crucial because of the employability issues faced by the graduates. However, Ariyawansa, (2008) explains, in practical scenario, Sri Lanakan university system is not job oriented, but students and its stakeholders have higher expectation on employment. Moreover, Weligamage & Siengthai , (2003) stress that the gap between the desired and actual level of employability occurs due to the inflexibility and unwillingness of the education and training system. Therfore, many direct and indirect causes affect graduate unemployment.

When gender is considered, it plays an important role in shaping labour market behaviours and outcomes for both women and men. (Miles, 2002) According to many studies, female graduate unemployment is considerably higher than male graduate unemployment. In Sri Lanka, it is observed that chances of securing jobs among female graduates are low. Thus, it makes a way to male graduates to have more opportunities of employment. (Ismail, 2011) However, Kong, (2011) argues about the probability of finding a job between both genders in a different perspective. He provides evidence for the increasing probability of female graduates finding jobs because they are more likely to follow several additional educational programs than male graduates. Moreover, Ismail, (2011) explains that the higher competition for searching jobs among females arises due to the fast upsurge in the proportion of females studying in universities. It is believed that female graduates have more confidence in the

training received at the university. (Miles, 2002).

When considering the ability of securing jobs, some female graduates and also non-graduates quit jobs after marriage due to family responsibilities. Nevertheless, Mitra & Verick , (2013) argue that even in middle age, female participation in labor force is low and they express that marriage, family responsibilities or reproductive role is not a possible reason for labor force variation between males and females. In a different way, Miles, (2002) expresses that family responsibility has an impact not only on women but also on men to save money and support the family.

Role of gender in the labor force is also affected by religious factors: Muslim clerics raise religious questions about female participation in the labor force, and further, Islamic Law allows limited formal education for women. (Al-Dosary, Rahman, & Aina, 2006) Thus, it gives more opportunity to one gender over another.

Perception on employment is different from male to female. Female graduates are not much interested to work for lower salaries and fringe benefits offered by the private sector. Most of them opt to be employed in the public sector because of shorter workhours and high job security. Correspondingly, the variation of employers' perception on male and female employees also has an impact on unemployment trends of graduates. Other factors such as degree classification, professional qualifications and socio-economic factors have an effect on each gender differently. (Dissanayake, 2011) Ariyawansa, (2008) states that many subjects in the fields of Arts and Management are not sufficient to fulfil the demand of the job market. Generally, study areas, apart from social sciences and Humanities, such as Medicine, Engineering, Law, and Agriculture guide their female graduates towards properly well-defined professional

objectives. (Ariyawansa , 2008) However, when considering Arts, Humanities and Social science subjects, lack of professional orientation during the undergraduate period impacts the mismatch in female graduate unemployment in a major way. (Ariyawansa , 2008) According to Jayasingha & Suraweera , (2020) 'college class' may not have a major impact on graduate employability. However, the male graduates who obtain a first class in a certain degree holds a low unemployment rate compared to other categories, while the male and female graduates with a second-class take an extensive period to find a job which suits their qualifications.

This study provides some insights into how these factors affect the unemployment rate while simultaneously, gender is also being considered. The assumptions can vary with the conclusion whereas the variables are specifically analyzed with the remaining evidence and the results.

Observations indicate that, there is a gap between males and females in graduate unemployment. Statistics, Sri Lanka Labour Force Survey, (2018) identifies that graduate unemployment rate marked at 9.1 percent as it is 5.1 percent and 13.2 percent for male and female respectively. With respect to graduate unemployment impact by the type of the degree of the graduates, statistics, Sri Lanka Labor Force Survey, (2018) estimates that 59.1 of Art degree graduates and 40.9 percent of other degree graduates are unemployed among 43,321 of total unemployed graduates.

In addition, collective group among unemployed graduates in the age group of 20-24 years classifies under the youth unemployment in Sri Lanka as well. Observations in Statistics, Sri Lanka Labour Force Survey, (2018) prove that youth unemployment rate is higher among the educated group with G.C.E. (A/L) and above. It is 13.8 percent from total youth population,

and 10.6 percent and 15.8 percent for males and females, respectively.

Moreover, previous studies observe female undergraduates spend more time searching for a job and expected low pay (Chun Wu, 2011). Similarly, social, and cultural characteristics highly matter in the women employment (Miles, 2002). Lack of personal skills, flexibility, creativity, etc. among graduates become a major issue for graduate unemployment (Dissanayake, 2011). Chun Wu, (2011) states that mismatch between the competencies provided by the universities and the skill demanded by the industries impacts on graduate unemployment of both genders.

1.2 Research Questions

  I. What are the causes for gender differences in graduate unemployment?
 II. What are the social, cultural and economic factors that affect graduates of both genders for redundancy?
III. How the male and female graduates manage employability drawbacks in the current labour force?

1.3 Higher education System in Sri Lanka

The university education (UE) system of the country was established in 1942 and currently it consists of 15 universities which are governed and regulated by the Universities Act, No. 16 of 1978. In 2017, total Undergraduate Enrolment in Universities & Higher Education Institutes (HEI) recorded 91063 of students from UGC intake 1, 354684 for External, Open & Distance Learning and 353 foreign students. Furthermore, enrolment by sex was 63 percent females and 37 percent males. (Commission, 2017) Planning and coordination of university education, allocation of public funds and maintenance of academic standards and regulation of admissions to HEIs are classified under the responsibilities of the University Grants Commission (UGC) and Ministry of Higher Education. The UE system

in Sri Lanka is a state monopoly which divides into a three-layer system: public universities, public advanced technical institutions and private post-secondary institutions. (Chandrasiri, 2003) The state universities: Colombo, Sri Jayewardenepura, Peradeniya, Kelaniya, etc. represent only a portion of higher education. Currently, other HEIs which are independent from Ministry of Higher education offer degree programs: Law College, Institute of Chartered Accountants, General Sir John Kotelawala Defense University and Buddhist and Pali University, etc. In addition, the allied colleges offer diplomas or certificates in various study areas such as English, computer science, business management which professionally and vocationally support employment. (Matthews, 1995) Basically, number of students who complete secondary studies impact on the number of students who seek opportunities for higher education. Thus, the number of students who seek opportunities for higher education increase with the increase of the number of students who complete secondary studies.

Similarly, the growth of country's economy has an impact on higher education as well. It affects household income and willingness of parents to pay for higher education. It can be within the private sector higher education institutes within the country or overseas. (Wickramasinghe, 2018) Generally, this is categorized under the demand-side factors of increase in enrolment in higher education system. Supply-side factors concern the number of state-owned and private sector owned higher education institutes. (Wickramasinghe, 2018) Moreover, Jayasingha & Suraweera, (2020) assert higher education is an essential element of national policies which capture global market share. Similarly, universities enable national growth by providing skilled human resources. Nevertheless, Jayasingha & Suraweera, (2020) mention graduates of Sri Lankan state universities lack the expected skill level. The issues in graduate employability rise due to

the gap between the aims of universities and industrial firms.

1.4 Employability of Graduates

Employability can be discussed under several notions such as employment, unemployment, under-employment and economically inactive. As per Statistics, (2018) during the reference period, persons who worked as paid employees, employers, own account workers or contributing family workers are said to be employed. In private sector, male employment is high, whereas in public sector, female employment is high. Despite the employment by the level of education increasing in the previous year, still there is an issue among educated employees. Most of the graduates who are self-employed may be invisibly underemployed because they are not engaging in an employment which matches with their qualifications. Under-employed are categorized into two main types: visible under employment and invisible under employment. Visible under employment reflects an insufficiency in the volume of employment. Also this is called time-related underemployment and invisible underemployment, characterized by low income, underutilization of skill, low productivity and other factors (Statistics, 2018) In addition, Statistics, (2018) defines economically inactive population as all persons who neither worked nor available/looking for work during the reference period. Moreover, working age population is defined by Statistics, (2018) as all persons of age 15 years and above

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Additionally, Dissanayake, (2011) explains economically inactive proportion of females is higher than males due to several reasons including family responsibilities and attitudes. Statistics, (2018) defines persons available and/or looking for work, and who did not work and who have taken steps to find a job during last four weeks and ready to accept a job given a work opportunity within next two weeks are defined as unemployed. Most of the Sri Lankan families encourage

their children for higher education to ensure employability. (Ariyawansa, 2008) Dissanayake, (2011) highlights, employability increases among graduates who graduated with a bachelor's degree in Business Education. At the same time, employability reduces in graduates who have graduated in Sinhala and Tamil mediums, simple and second lower passes and being female, etc. Due to the increasing number of unemployed graduates, many scholars pay attention to graduate unemployment and factors contributing to it. Accordingly, employability is affected by Gender, Degree classification, Professional qualifications, English and ICT skills and Socio economic factors.

Role of Gender on Graduate unemployment
Many scholars discuss the role of gender on graduate employment and unemployment. In most studies, it is identified that the female graduate unemployment is considerably higher than the male graduate unemployment. It is mentioned that the graduate unemployment rate in Sri Lanka is at a rate of 9.1 as it was 5.11 male and 13.2 female graduate unemployment rates. Dissanayake, (2011) points out unemployment as well as economical inactivity of graduate females are higher than those of males. When considering the ability of securing jobs, some female graduates and also non-graduates quit jobs after marriage and due to family responsibilities. So, it depends on how the ratio divides according to gender. Also the employment decision of male and female graduates can depend on their parents' view about the job. Other factors such as degree classification, professional qualifications and socio-economic factors, etc. affect each gender differently. (Dissanayake, 2011)

1.5 Factors contributing to Graduate unemployment

There are several factors that affect graduate unemployment in a considerable way. The

main factor which affects the employability of the graduates is the nature of their undergraduate education, primarily the degree offered to them (Dissanayake, 2011) Though there is an immense impingement of socio–economic factors, cultural factors and soft skills, the aftermath of the bachelor's degree towards the gender difference in response to graduate unemployment is unjudgmental.

When people consider professional qualifications in relation to gender difference, it is also a reason for graduate unemployment in Sri Lanka. Professional qualifications cause a significant difference among the graduates for their unemployment. (Dissanayake, 2010/2011) Many companies consider that the extra professional qualifications the job seekers hold are more important than the basic degree. Language skills is an important factor which should be considered in graduate unemployment. It is one of the benchmarks which an undergraduate should own to get a secured job in the job market.

Many scholars stress that analytical ability, logical reasoning, communication and IT skills influence graduate employability. (Singham, 2017) Nevertheless, the degree to which they influence the employability can vary according to the situation. Ismail, (2011) shows that English proficiency with IT skills and other soft skills enhance the employment opportunities among graduates. Currently, the university education is mixed with modern technology. Weerasinghe & Fernando, (2018) explain that undergraduates of regional universities have issues related to computer facilities, and such issues impact on improving the level of IT knowledge among graduates. Therefore, Bank, (2010) mentions that, to increase the graduate employability, improving the English and IT skills of students should be considered as national priorities of Sri Lanka. Also the socio economic factors of a person can affect his or her status of unemployability.

2. Materials and Methods

2.1 Research Design, Data & Survey Instruments

This study is primarily an empirical analysis, which is based on the primary data collected through the responses of graduates from Faculty of Management, Social Sciences and Humanities (FMSH) of Intake 33, and Faculty of Engineering (FOE) of Intake 32 of General Sir John Kotelawala Defense University (KDU), Ratmalana, Sri Lanka.

Survey method is used in the study and this survey was carried out via a structured questionnaire that had 27 questions to gather primary data for the research. The questionnaire consisted of 5 sections that focused more on analyzing gender differences in response to graduate unemployment and some basic information related to respondents. It aimed to find out respondents' personal data, educational background, socio-economic background, aspirations, preferable jobs, expectations, and lastly graduate unemployment in response to gender differences.

The questionnaire included open-ended and closed-ended questions to analyze data more on their opinions on unemployment and whether gender discrimination relates to it. Moreover, the survey was done targeting the fresh graduates from engineering, management, and social sciences. Finally, data gathered through the questionnaire was used to interpret the solutions for the problem in a comprehensive manner.

2.2 Study Population and Sampling Framework

Population of the study comprises of 200 day-scholar graduates of FMSH of intake 33 and FOE of intake 32 of KDU, who graduated in January, 2020 of FMSH and FOE from KDU, Ratmalana. FMSH and FOE were selected because graduates who graduated from these two faculties have a higher probability of

facing graduate unemployment crisis due to the competition in the job market, and the main expectation of the sampling framework was to identify the variation of gender among graduates. In this study, the whole population was studied as the sample because it is relatively small and also to avoid sampling errors. Mainly, it is difficult to collect sufficient number of responses from a small sample. Therefore, responses from 200 day-scholar graduates of two faculties were considered. Although cadet officers were not considered during the study, a sample of around 230 is chosen from the day-scholar from the FMSH and FOE of KDU, Ratmalana. It is based on random sampling. Whole population is considered as the sample and it can be presented as, 81 and 150 day-scholar graduates who graduated from FMSH in Intake 33 and FOE in Intake 32 respectively. Every member of the sample was given a similar opportunity to respond.

2.3 Statistical Analysis Techniques

Chi square test and binary logistic regression was used to determine the association between independent variables and the dependent variable. Chi square test is a statistical hypothesis test used to observe the association of each variable with the dependent variable, and binary logistic regression is used to observe the collective association of independent variables with the dependent variable.

Mainly Chi square test aids to determine the significant statistical association between the expected and the observed frequencies whereas primary objective of chi square test is to evaluate the possible observed frequencies assuming that null hypothesis is true. Categorical variables are compared in Pearson's chi square tests. Binary logistic regression is conducted when the dependent variable is dichotomous, to determine the collective impact of all independent variables including nominal, ordinal, interval variables towards the dependent variable.

In this process, it gives the summary of the sample, Nagelkerke's R square and Cox and Snell's R square. Cox and Snell's R square is based on the log possibility for the model compared to the log possibility for a baseline model. Moreover, Nagelkerke's R square is the adjusted version of Cox and Snell's R square.

3. Results and Discussion

Age is a demographic variable which affects employment. Basically, students in Sri Lanka sit for G.C.E. (Advanced level) around the age of 18 and the lowest age level to read for a degree is around 19 years. However, KDU also provides opportunity for students who have studied under Cambridge curriculum. Therefore, that age level can vary. As per the chi square value ($p= 0.002$), it can be concluded with 95% confidence that the age of male graduates has a significant association with employability status. Therefore, it can be observed in 95% confidence, overall employment level is higher in early twenties of males. Majority (74.68%) in the age category of 20-25 is currently employed but a considerable amount is currently unemployed. Moreover, in the age category of 26-31, 41.67% males are employed but 58.34% male graduates from that category is currently unemployed. However, no significant difference is observed between the corresponding values in 36-40 among males.

Thus, by comparing two binomial distributions, it is identified that probability of being employed is high with the early stages of age. It indicates that age variable has not impacted female graduates of FMSH or FOE in KDU to find employment. However, this cannot be generalized to others because majority of the graduates are in the age limit which has more probability to get an employment.

Table 1. Identification of Individual Impact of Variables on Male and Female Graduates

Table 1 shows the relationship between employability status with the independent variables individually for both male and female graduates.

Independent variables	Male		Female	
	X^2	p	X^2	p
Age	12.41	0.002*	1.640	0.441
Religion	3.984	0.263	1.615	0.656
Marital Status	0.788	0.375	1.523	0.217
The highest education qualification	0.877	0.349	0.033	0.855
Faculties	0.059	0.809	0.021	0.885
Academic/professional qualifications	8.036	0.090	9.832	0.043*
Family type	0.000	0.996	1.171	0.279
Family size	5.936	0.547	2.558	0.634
Father's education	7.305	0.026*	0.280	0.869
Mother's education	0.804	0.669	2.621	0.270
Monthly income of the family	2.175	0.337	10.221	0.006
Family influence on employment decision	1.748	0.186	0.936	0.333
Reasons which motivate the most for university education	1.147	0.887	5.856	0.210
Preference for manual jobs/labour	1.425	0.233	0.167	0.683
Aim in relation to job	0.879	0.928	0.777	0.942
Satisfaction with the educational qualification/degree/training	7.254	0.007	5.317	0.021*
The most preferable job	6.034	0.049*	1.176	0.555
If given a choice to study again, the study stream would graduates prefer	5.872	0.438	2.482	0.870
Job satisfaction	11.087	0.004*	20.078	0.000*
The most important factor responsible for getting a satisfactory job	9.103	0.245	6.234	0.398
Impact of gender when finding a job (as per their thoughts)	5.995	0.014*	1.900	0.168
Impact of gender when finding a job (according to their experience)	1.343	0.247	5.468	0.019*
Refusal of a job opportunity because of the gender	0.063	0.802	2.296	0.130
Spouse's salary and education	1.416	0.234	1.005	0.943

(Source: Survey data, 2019)

In general, parents' education levels influence children's education standards and employment. Their education standards motivate children to achieve more in education sector. On the other hand, education level has an impact on the employability. The study examined father's and mother's education level separately. Father's education is categorized into primary, secondary and tertiary. Among

them, Fathers who have primary, secondary and tertiary education levels are 1.72%, 53.44% and 44.82% respectively. Therefore, majority of fathers have secondary education and 75.80% of their sons are employed. However, 48.07% sons of fathers who have tertiary education is unemployed, while 51.92% is employed. In this case, the gap between unemployed and employed graduates is low. Employability of sons of fathers who have tertiary education has been impacted by other factors than father's education influence. When considering the primary education level, no significant difference is identified. In line with the chi square value (p=0.026), it can be concluded with 95% confidence that father's education of male graduates has a significant relationship with their employability status.

Academic and professional qualification is categorized into some categories considering similar characteristics: academic qualifications, English language related, Information Technology (IT) related qualifications and technical training. The findings reveal that majority of the male and female graduates have academic qualifications. According to chi square statistic (p=0.007), it can be concluded with 95% confidence that satisfaction with the higher education/ training among male graduates has a significant association with the employability status. 67.24% of male graduates are satisfied with the higher education/training while 32.75% do not. Moreover, 73.07% of male graduates who are satisfied with their higher education qualifications are currently employed. At the same time, 47.36% male graduates who are not satisfied with the higher education and training are currently employed as well. However, 52.63% of male graduates who are unsatisfied with the higher education/ training is unemployed. Thus, it can be concluded that satisfaction with the higher education/ training among male graduates has a significant association with the employability status.

It has been a common matter in Sri Lanka that majority of the graduates are only seeking high standard job opportunities regardless of manual jobs and other freelancing and entrepreneurial opportunities. The dearth of traditional job opportunities in both public and private sector has increased the percentage of unemployed graduates in the country as a whole. As per the chi square value (p=0.049), it can be concluded with 95% confidence that job preference of male graduates has a significant relationship with employability status. Furthermore, it can be observed in 95% confidence, overall preference of male graduates for government jobs is the highest (43.96%) while the preference for self- employed jobs is the second (29.31%). It is important to note that there is a smaller number of male graduates who prefer private jobs (26.72%). However, there is no high significant difference between the male graduates who prefer private jobs and self- employed status. Moreover, 76.47% of the graduates who prefer government jobs are currently employed, while only 51.61% of graduates who prefer private jobs are currently employed. However, of the self-employed category, 58.62% of males are employed, but 41.17% of male graduates are currently unemployed. Thus, by comparing two binomial distributions, it is identified that probability of being employed at the government sector is high.

As per the chi square value (p=0.004), it can be concluded with 95% confidence that job satisfaction of male graduates has a significant relationship with employability status. Furthermore, it can be observed in 95% confidence, majority (74.66%) of the male graduates are satisfied about their job roles, while 51.50% of male graduates who are currently employed are not sure about their satisfaction status. However, the male graduates who are unsatisfied with their job roles occupies the least number (25%). Moreover, majority of the male graduates who are satisfied with their job roles are currently employed, whereas 48.48% of

unemployed graduates are not sure about their satisfaction status. Thus, by comparing two binomial distributions, it is identified that probability of getting a satisfactory job is high.

As per the chi square value (p=0.014), it can be concluded with 95% confidence that gender impact on finding a job as per the thoughts of male graduates has a significant relationship with employability status. In line with hypothesis, this can be due to many reasons such as the belief that males are more forward than females, females lack soft skills compared to males, adjustment of work hours and working environment and so on. Furthermore, it can be observed in 95% confidence that majority of the male graduates think that there is an impact of their gender on their employability status. From the whole sample of male graduates, around 64.65% of graduates are employed while there is a less percentage (35.34%) of male graduates who are currently unemployed. Moreover, from the proportion of current employed male graduates, majority (88.66%) think that there is no impact of their gender on their employability status. But 52.83% think there is an impact. However, 47.16% of unemployed males think that gender affects graduate unemployment while 25.39% do not. Thus, gender impact on finding a job as per the thoughts of male graduates has a significant relationship with employability status.

Therefore, it can be observed that age, father's education, satisfaction with the higher education/ training, job preference, job satisfaction and impact of gender on finding a job (as per the thoughts) have a significant relationship with employability status of the male graduates.

According to the chi square value (p=0.043), it can be concluded with 95% confidence that academic qualifications of female graduates have a significant relationship with employability status. It is evident that the females who have academic and professional

qualifications have a higher rate of getting into a job. Total number of female graduates who have academic qualifications are 56.96%, and 60% of them are employed. Moreover, percentages of graduates who have English language related qualifications, IT related qualifications and technical training are 20.25%, 5.06% and 1.26% respectively. However,16.45% of the female graduates do not have any academic/professional qualifications. Furthermore, 61.53% of them are unemployed while only 38.46% are employed. Nevertheless, only 37 .50% of female graduates who have English language related qualifications are employed. Thus, it can be observed that academic and professional qualifications have an impact towards employability of female graduates.

The results of the chi square value (p=0.006) reveal that there is a significant association between the monthly income of families of female graduates and employability status with 95% confidence. The results indicate that majority of the male graduates' 'fathers' monthly income is between Rs. 50,000- Rs. 100,000, while there is a majority of Rs. 10,000 upwards in the female category. Results show that monthly income up to LKR 50,000, LKR 50,000- 100,000 and LKR 100,000 upwards is 23.27%, 43.96% and 32.75% respectively. Monthly income of the majority is represented in the "LKR 50,000-100,000". However, 42.23% of female graduates who responded in that category are currently employed, whereas 57.78% are unemployed. Nevertheless, female respondents classified in the "LKR 100,000 upwards" category indicated the highest employment rate. It is valued as 80%. Furthermore, 55.56% of female graduates classified in the "Up to LKR 50,000" category is unemployed, while 44.45% is employed. Thus, it can be concluded that monthly income of families of female graduates has an association with the employability status.

Moreover, as chi square value (p=0.021), it can be concluded with 95% confidence that

satisfaction with higher education and training has a significant association with the employability of female graduates. Table 32 shows that 75.94% of female graduates are satisfied with higher education/training while 24.05% do not. Moreover, 61.67% of female graduates who are satisfied with their higher education qualifications are currently employed. At the same time, 31.57% of female graduates who are not satisfied with higher education and training are currently employed as well. However, 68.42% from female graduates who are unsatisfied with higher education/ training is unemployed. Thus, it can be concluded that satisfaction with higher education/ training among female graduates has a significant association with the employability status.

As per the chi square value (p=0.000), it can be concluded with 95% confidence that job satisfaction of female graduates has a significant relationship with employability status. Furthermore, it can be observed in 95% confidence, majority (78.08%) of the female graduates are engaged in satisfying job roles while around 28.12% of female graduates who are currently employed are not sure about their satisfaction status. However least number of female graduates are unsatisfied with their job roles. Moreover, majority of the female graduates who are satisfied with their job roles are currently employed, and 71.87% of unemployed graduates are not sure about their satisfaction status. Thus, by comparing two binomial distributions, it is identified that probability of getting a satisfactory job is high.

Furthermore, as per the chi square value (p=0.019), it can be concluded with 95% confidence that the impact of gender of the female graduates (as per their experiences) has a significant relationship with employability status. Furthermore, it can be observed in 95% confidence that majority of the female graduates have not faced the impact of their gender when searching for a job opportunity even once in their lifetime.

When considering the employability status of the graduates who have faced the gender impact, there is no high significant difference between employed and unemployed. However, when considering the other proportion who have not faced the gender impact, there is a considerable difference between their employability status. In that category, 66.67% is employed while 33.34% is unemployed. However, 40.54% who are impacted by gender is employed and 59.45% is unemployed. Thus, by comparing two binomial distributions, it is identified that 46.83% of female graduates have been impacted by gender when finding a job. In line with hypothesis, this can be due to many reasons such as the belief that males are more forward than females, females lack soft skills compared to males, adjustment of work hours and working environment and so on.

Therefore, it can be observed that academic qualifications, monthly income of families, satisfaction with the higher education and the training, job satisfaction and impact of gender of the female graduates (as per their experiences) have a significant relationship with employability status of the female graduates.

3.1 Modelling the Employability of Graduates via Binary Logistics

3.1.1 Identification of Collective Impact of Variables

In the previous section, statistical analysis was carried out to identify the impact of each independent variable separately towards the dependent variable. Basically, a statistical analysis is applied in two models separately for male and female graduates. Therefore, binary logistic regression is carried out under backward wald method to identify the collective impact from the optimal set of independent variables towards the dependent variable. In addition, this method was applied for two models separately to identify the collective impact distinctly over both genders.

3.1.2 Identification of Collective Impact of Variables for Male Graduates

The results for the final model for male graduates are shown in table 3. The significance of the Hosmer and Lemeshow test statistic indicates in table 4 that the fitted model for male graduates is significant at 0.534 level.

The results in the table 3 specifies that variables, age, father's education level, satisfaction about the current job, effect of gender towards graduate unemployment and refusal of a job opportunity due to gender are significantly associated with employability of male graduates when all the variables are taken into consideration collectively.

Table 2. Variables of the best fit model for male graduates

Table 2 shows the relationship between employability status with the independent variables collectively for male graduates.

	B	S.E.	Wald	df	Sig.	Exp(B)
Age			7.648	2	.022	
Age (1)- 26-31	20.596	40192.068	.000	1	1.000	880092816.85
Age (2)- 31-35	22.189	40192.068	.000	1	1.000	4329077032.831
Faculty (1)- FOE	1.441	.581	6.151	1	.013	4.227
Father's education			5.989	2	.050	
Father's education (1)- secondary	-.028	1.547	.000	1	.985	.972
Father's education (2)- Tertiary	-1.160	.478	5.884	1	.015	.313
Job satisfaction			8.736	2	.013	
Job satisfaction (1)- No	-.946	.505	3.503	1	.061	.388
Job satisfaction (2)- Not sure/May be	1.971	1.098	3.223	1	.073	7.178
Gender effects graduate unemployment (1)- No	1.200	.527	5.186	1	.023	3.322
Refusal job (1)- No	-1.247	.730	2.918	1	.088	.287
Constant	-21.739	40192.068	.000	1	1.000	.000

(Source: Survey data, 2019)

Table 3. Hosmer and Lemeshow test for male graduates

Chi-square	df	Sig.
7.021	8	.534

(Source: Survey data, 2019)

Table 4. Classification table for male graduates

Observed		Predicted		Percentage Correct
		Employability status		
		Yes	No	
Employability status	Yes	61	14	81.3
	No	17	24	58.5
Overall Percentage				73.3

(Source: Survey data, 2019)

Table 5. Cox & Snell R Square and Nagelkerke R Square for male graduates

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
112.821	.279	.383

(Source: Survey data, 2019)

The productivity power of the model applied to male graduates is 73.3% as shown in table 5. The probability of correctly classifying "being employed" given that not being employed is .81.3% against the probability of correctly classifying "being unemployed" given that has been employed is 58.5%.

Table 6, the Cox & Snell R Square and Nagelkerke R Square shows that the variation in the dependent variable based on the model varies from 27.9% to 38.3%. The percentage of variance of dependent variable is explained by the presented model.

3.1.3 Identification of Collective Impact of Variables for Female Graduates

The results for the final model for female graduates are shown in table 7. The significance of the Hosmer and Lemeshow test statistic indicates in table 8 that the fitted model for female graduates is significant at 0.810 level.

The results in table 53 specify that variables, the highest educational qualification, mother's education level and satisfaction about the current job, are significantly associated with employability of female graduates when all the variables are taken into consideration collectively.

Table 6, the Cox & Snell R Square and Nagelkerke R Square shows that the variation in the dependent variable based on the model varies from 27.9% to 38.3%. The percentage of variance of dependent variable is explained by the presented model.

Identification of Collective Impact of Variables for Female Graduates

The results for the final model for female graduates are shown in table 7. The significance of the Hosmer and Lemeshow test statistic indicates in table 8 that the fitted model for female graduates is significant at 0.810 level.

The results in table 53 specify that variables, the highest educational qualification, mother's education level and satisfaction about the current job, are significantly associated with employability of female graduates when all the variables are taken into consideration collectively.

Table 6. Variables of the best fit model for female graduates

Table 6 shows the relationship between employability status with the independent variables collectively for female graduates.

	B	S.E.	Wald	df	Sig.	Exp(B)
Highest educational qualification (1)-Masters' degree	-2.659	1.252	4.514	1	.034	.070
Mother's education			4.700	2	.095	
Mother's education (1)- secondary	-18.544	40192.970	.000	1	1.000	.000
Mother's education (2)- Tertiary	1.493	.689	4.700	1	.030	4.449
Job satisfaction			18.358	2	.000	
Job satisfaction (1)-No	-2.825	.675	17.508	1	.000	.059
Job satisfaction (2)-Maybe/Not sure	-.687	1.025	.449	1	.503	.503
Constant	2.825	1.207	5.483	1	.019	16.869

(Source: Survey data, 2019)

Table 7. Hosmer and Lemeshow test for female graduates

Chi-square	df	Sig.
1.596	4	.810

(Source: Survey data, 2019)

Table 8. Classification table for female graduates

Observed		Predicted		
		Employability status		Percentage Correct
		Yes	No	
Overall Percentage				74.7
Employability status	Yes	31	12	72.1
	No	7	29	80.6
Overall Percentage				75.9

(Source: Survey data, 2019)

Table 9. Cox & Snell R Square and Nagelkerke R Square for female graduates

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
81.326	.295	.394

(Source: Survey data, 2019)

The productivity power of the model applied to female graduates is 75.9% as shown in table 9. The probability of correctly classifying "being employed" given that not being employed is 72.1% against the probability of correctly classifying "being unemployed" given that has been employed is 80.6%. Table 10, the Cox & Snell R Square and Nagelkerke R Square show that the variation in the dependent variable based on the model varies from 29.5% to 39.4%. The percentage of variance of dependent variable is explained by the presented model.

4. Conclusion and Recommendations

The aim of this research was to find out the gap between male and female graduate unemployment and to identify the causes of gender differences on the same. Also, it intended to identify the impact of geographical, social, and economic factors. Focusing on demographic variables, it is observed that most of them do not have a major impact on gender. Though statistically it was proven that marital status might not be a cause for unemployment of females, further research is necessary using a sample of married female graduates as the majority of females in this study are unmarried. When considering the causes for the gap between male and female graduates, it shows fathers' income of females alone impacts female's employability. Father is the main breadwinner of most Sri Lankan families. In that case, future higher education of the females in the family used to be decided as per the father's income. It does not affect males significantly because they have to share the responsibility with their father to earn for their own family in the future. The study reveals that education of both parents, fathers' income of males, and type of family do not have any impact on unemployment. Fathers' income of females alone impacts females' employability.

No association between family influence, the aim in relation to the job, and spouse's salary, education level indicates that the majority of males have engaged in university education due to the competitive job market while females preferred to gain respect, status and it does not impact on employability. It is noted that the preference of graduates for doing manual jobs is impacted by their employability status to some extent whereas most people do not prefer to do them. It is suggested that universities must educate them on entrepreneurial opportunities and other various job opportunities so that they tend to focus on them rather than only focusing on high-standard jobs.

Additional studies are needed to bring out the relationship between some variables such as family influence, the aim of a graduate in relation to the job, the salary they get, as they are some key factors that are practically visible among the community. It is proposed to educate fresh graduates on the variety in the job market so that they can have multiple choices rather than sticking to one. As per the referred literature and based on the majority of the findings, mostly females are unemployed which indicates that there is a gap between gender in relation to unemployment. Yet it is identified that the probability of being impacted by gender is low as per the statistical analysis. Among respondents, the majority of the females had the view that gender impacts whereas males mentioned that it has no impact on their employability.

Training and skill development programs for undergraduates by the government, Ministry of Education, and other educational institutes are recommended. Most of the female graduates lack opportunities to get a proper job due to poor skills they have which do not apply to the working sector. Universities have to develop the practical skills of graduates. Finally fulfilling the objectives of the study, it is recommended to comprehend the impacts of the findings brought out in this study. More studies could help to find out whether the conflicting factors with a hypothesis in the study would impact unemployment in relation to gender differences.

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