



Ministry of Labour &
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LABOUR MARKET TRENDS AND PROSPECTS FOR EMPLOYMENT OPPORTUNITIES IN JAMAICA

VOLUME 2

Prepared by:
Planning, Research and Monitoring Unit
Ministry of Labour and Social Security
April 2018



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Abbreviations and Acronyms

BPO	: Business Process Outsourcing
CSEC	: Caribbean Secondary Examinations Council
CSS	: Cyber Security Strategy
ELE	: Electronic Labour Exchange
GDP	: Gross Domestic Product
HEART Trust/NTA	: Human Employment and Resource Training Trust/National Training Agency
INTERPOL	: International Criminal Police Organization
JAMPRO	: Jamaica Promotions Corporation
LMIS	: Labour Market Information System
MEM	: Manufacturing, Energy and Mining
MLSS	: Ministry of Labour and Social Security
MSET	: Ministry of Science, Energy and Technology
NLMS	: National Labour Market Survey
PEAs	: Private Employment Agencies
PIOJ	: Planning Institute of Jamaica
PRMU	: Planning, Research and Monitoring Unit
SEZ	: Special Economic Zone
STATIN	: Statistical Institute of Jamaica
STEM	: Science, Technology, Engineering and Mathematics
UNODC	: United Nations Office of Drugs and Crime
YEDAI	: Youth Employment in the Digital and Animation Industries

1.0 Introduction

The labour market is very dynamic in nature, influenced by changes in the availability of employment and skills. It is therefore important to keep abreast of these changes and update them regularly. The aim of labour market information is to effectively inform decision making geared towards attaining productive employment, making sound career choices as well as creating and adjusting educational and training programmes to address labour market needs. The outcome is to close the gap between the available skills in the labour market and those in demand, leading to increased labour productivity and employment as well as economic growth.

This Report is the second edition to be published by the Ministry of Labour and Social Security (MLSS). It looks at the performance of key labour market indicators as well as the availability of employment and skills in 2017. The Report also investigates potential growth industries identified locally and internationally. The occupations for each growth industry are also provided. Additionally, the Report highlights strategies to improve employment opportunities in Jamaica.

In order to access this information and other labour market studies, persons can visit the National Labour Market Information System (LMIS). The LMIS is a mechanism through which information on trends in the labour market are collected, stored, analysed and disseminated. It is not only a one stop labour market information source, but also a job search, career development and job placement facility. Users of the LMIS include students, jobseekers, Policy Makers, Planners, Curriculum Developers and Guidance Counsellors.

1.1 Methodology

Information for the Report was gathered using secondary data such as:

- Reports from Jamaica Promotions Corporation (JAMPRO);
- The findings of the National Labour Market Survey (2017) and Sector Studies conducted by the Planning, Research and Monitoring Unit (PRMU) of the MLSS;

- Job vacancies published in the career and classified advertisements sections of the major newspapers and online;
- Job vacancies from Private Employment Agencies (PEAs); and
- Statistics from various sources.

2.0 A Summary of the Jamaican Economy and Employment

Figures released by the Statistical Institute of Jamaica (STATIN) indicate that the Jamaican labour force stood at 1,347,600 in the last quarter (October-December) 2017. The employed labour force for the corresponding period was 1,206,800 compared to 1,180,800 in 2016. The unemployment rate has been trending downwards since 2014¹ and data from STATIN showed that it was 10.4 per cent in the last quarter of 2017. However, while youth unemployment has been trending downward, moving from 37.8 per cent in the October-December 2013 to 25.4 per cent for the same period in 2017, there is still cause for concern because it is still very high.

Jamaican workers are mainly engaged in the Service sector, which accounted for approximately 68.4 per cent of the employed labour force in the last quarter of 2017. For the same period, the lead industry was “Wholesale and Retail, Repair of Motor Vehicles and Equipment” which accounted for 20.4 per cent of the employed labour force and was also the largest sector of the economy, contributing 17.3 per cent to the Gross Domestic Product (GDP). Meanwhile, “Agriculture, Hunting, Forestry and Fishing” was the leading employer from the Goods Producing sector, with 16.1 per cent of the employed labour force.

Using the latest data available, a look at the distribution of Jamaican workers employed by category showed that in the last quarter of 2016, “Service Workers and Shops and Market Sales Workers” (23.4%) was the largest group of workers employed, followed closely by “Professionals, Senior Officials and Technicians” (21.4%).

¹ The unemployment rate in 2014 was 13.7%

3.0 Supply of Labour – Output of Secondary, Post-Secondary and Tertiary Institutions and LMIS Skills Bank

Jamaica's labour force is supplied by graduates from 164 secondary schools, HEART Trust/NTA, 40 local colleges, universities etc. Figures released in 2017 revealed that 34,885 students sat the Caribbean Secondary Examinations Council (CSEC) examinations during the year.² However, only 8,703 or 24.9 per cent attained five (5) or more subjects including Mathematics and English Language, which would allow them to matriculate into the working world.³ When disaggregated by gender, girls outperformed boys, with 63.8 per cent of the total who attained five (5) or more subjects being girls. In addition, the performance of students varied based on subject categories. The Business subjects had the highest average pass rate (85.9%), followed by Technical/Vocational (83.7%), Arts (65.7%) and Sciences (54.8%).

In terms of output from post-secondary institutions, 73,002 students graduated in 2017. Females accounted for 45,410 or 62.2 per cent of the total number of graduates.⁴ Graduates were mainly from the areas of "Secretarial and Other Commercial Personnel" (41.5%), "Cooks, Waiters and Other Hotel Personnel" (18.9%), "Computing" (15.6%) and "Craftsmen, Production Process and Operating Personnel" (8.1%).⁵

Data from 40 tertiary Institutions indicated that 17,222 persons graduated in 2017. Females accounted for 67.3 per cent of the total output. Over 28 per cent of the graduates pursued courses to obtain jobs as Managers/Administrators followed by Miscellaneous Occupations⁶ with 12.8 per cent.⁷

² Ministry of Education Statistics Unit.

³ Ibid

⁴ Compiled from data supplied by Police Academy, HEART Trust/NTA, Technical High, Vocational/Agricultural Schools and Other selected Training Institutions.

⁵ Ibid

⁶ This includes training in Early Childhood Care, Practical Nursing, Health Services, Assessors Training and other customized programmes.

⁷ Compiled from data supplied by the University of the West Indies, University of Technology and other Tertiary Institutions.

3.1 An analysis of skills and occupations of jobseekers from the LMIS Database

Since its enhancement in November 2013, the LMIS has registered more than 16,000 jobseekers and over 1,000 employers online. Parish distribution by active jobseekers showed the highest in Kingston and St. Andrew (5,453), followed by St. Catherine (3,993) and St. James (1,221). See Table 1.

Table 1
Number of active jobseekers registered by Parish

Parish	Number of active jobseekers
Kingston and St. Andrew	5,453
St. Catherine	3,993
St. James	1,221
St. Ann	936
Trelawny	458
Portland	285
Clarendon	1,031
Hanover	334
St. Elizabeth	356
Manchester	850
St. Thomas	543
Westmoreland	542
St. Mary	389
TOTAL	16,391

In terms of the level of qualifications for the registrants, information gathered indicated that the highest qualifications attained by jobseekers were mostly at the CSEC level, with 32 per cent (See Figure 1). This was followed by Bachelors Degree (19%) and Certificates (18%).

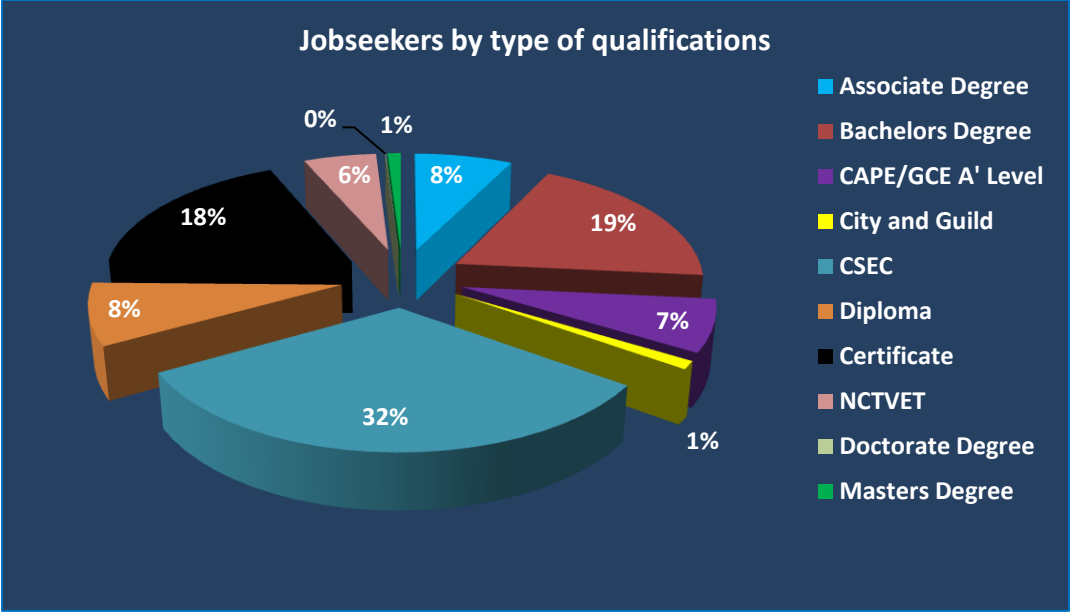


Figure 1

4.0 Potential areas of employment

The Government of Jamaica has continued its efforts to create an enabling environment for economic growth and employment creation. As such, several growth sectors have been identified to generate employment opportunities. These include Business Process Outsourcing, Tourism, Creative industries – (Animation and Film), Construction, Manufacturing, Energy and Mining (MEM) which are examined in this Report. Due to emerging trends in terms of food and national security as well as technological advancement, other sectors investigated include Cyber Security, Agriculture, Robotics and Gaming.

4.1 Business Process Outsourcing (BPO)

Business Process Outsourcing (BPO) involves the transfer of a company's non-core activities to a third party that uses information technology for service delivery.⁸ Some examples of these services include:⁹

- Human resources and payroll administration;
- Banking and related data processing, such as credit card transaction processing;
- Customer services and retention, including customer relationship management;
- Professional services, such as actuarial services, architectural and engineering design;
- Web site and database maintenance; and
- Travel and tourism management functions such as hotel reservations, care giving services and flight ticket bookings.

Jamaica's potential as a BPO destination has been mainly due to its location in the Americas (which allows for near shore outsourcing), available skills in information technology and the ability to communicate effectively in English Language. Growth in the BPO sector has been facilitated mainly by advances in Information and Communication Technology (ICT). According

⁸ International Labour Organisation (2016).

⁹ Naidoo, R. and Neville, M. (2015). Call Centres / Business Process Outsourcing

to JAMPRO, the BPO sector is a high-performing segment of Jamaica’s Service industries. It has enjoyed the highest employment growth rate of any sector in the last decade and presently accounts for more than 26,000 employees and over 60 companies across the island.¹⁰

The Outsourcing industry has evolved from being mainly call centres to an industry which currently spans the entire value chain as it relates to the types of jobs being offered.¹¹ Customer Service and Sales are viewed as the lower level jobs, but the industry is now offering services in higher IT support, Medical and Insurance Processing, as well as in the Shared Services space where HR, Accounting and Finance are being done (See Figure 2).¹²

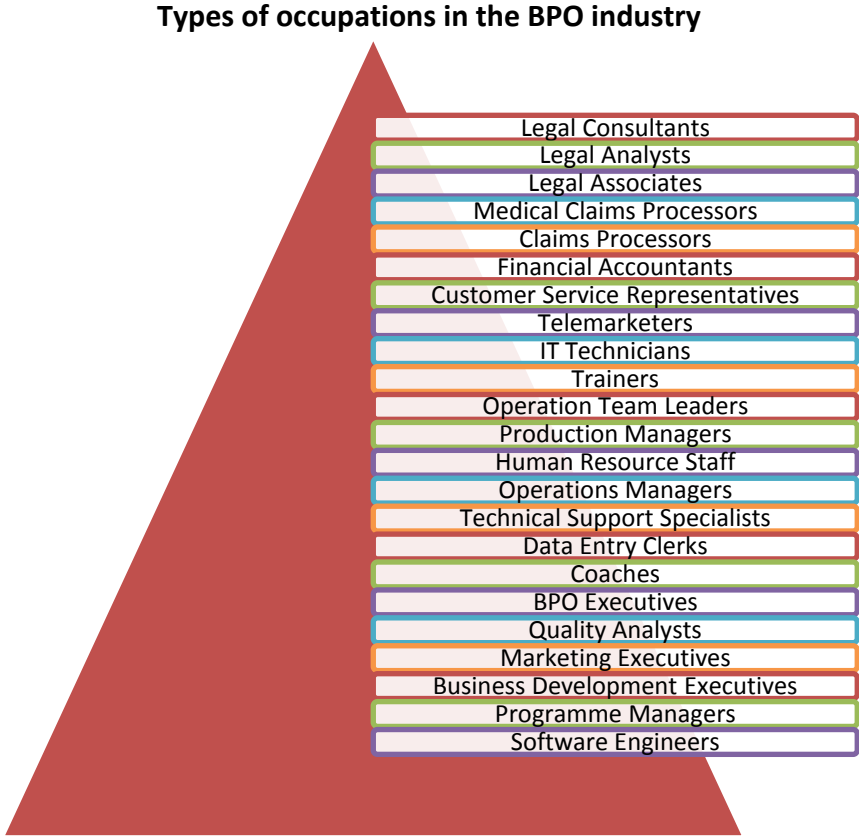


Figure 2

¹⁰ JAMPRO Policy and Business Advocacy (2018)

¹¹ Ibid

¹² Ibid

Jamaica is poised to attract a wider range of BPO services, as it moves to supply a range of applicable skills in the country to take advantage of opportunities in the Sector such as:¹³

1. Knowledge Process Outsourcing (KPO);
2. Software Development and Testing/Maintenance; and
3. Legal Processing Outsourcing (LPO).

4.2 Tourism industry

For 2017, there was continued demand for travel to the Caribbean region, with Jamaica welcoming over 4.3 million visitors. This represented an increase of 13.2 per cent over 2016.¹⁴ Tourism is one of the core drivers of economic development in Jamaica and a major contributor to the GDP.¹⁵ Using the latest GDP figures released by STATIN, Table 2 shows that all Sectors, with the exception of Hotels and Restaurants experienced a decline at some point during the ten year period (2007 - 2016).

Table 2
Growth rate of gross value added at constant (2007) price by industry

Industry	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Agriculture, Forestry & Fishing	-8.1	-6.2	14	0.0	10.3	2.3	-0.8	-0.5	-0.1	12.9
Mining & Quarrying	-2.9	-2.7	-50.4	-4.2	19.1	-8.7	2.7	0.9	1.0	-3.3
Manufacture	1.3	-0.8	-4.8	-4.3	1.8	-0.3	-0.5	-0.8	2.0	1.9
Electricity & Water Supply	0.6	0.9	2.2	-4.3	0.3	-2.2	-2.0	-1.2	1.4	3.7
Construction	4.5	-7.6	-8.7	-1.3	0.8	-4.4	1.9	1.7	1.1	0.5
Wholesale & Retail Trade; etc.	1.4	-0.5	-3.7	-3.8	0.3	-1.4	-0.1	0.3	0.6	0.3
Hotels & Restaurants	0.4	2.1	2.0	3.4	2.0	1.8	1.2	3.0	1.9	2.1
Transport, Storage & Communication	2.1	-3.1	-3.5	-2.7	-1.9	-0.1	0.4	0.8	1.0	0.7
Finance & Insurance Services	4.9	3.0	3.0	-3.4	-0.1	-0.1	0.2	0.8	0.7	1.3
Real Estate, Renting & Business	3.4	1.5	-1.1	-0.9	-0.3	-0.2	0.4	0.5	0.5	0.5

¹³ Ibid

¹⁴ Jamaica Tourist Board (2017)

¹⁵ JAMPRO Policy and Business Advocacy (2018)

Industry	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Activities										
Producers of Government Services	1.3	0.1	-0.2	0.5	0.5	-0.2	-0.2	-0.2	-0.1	-0.1
Other Services	1.9	0.7	0.2	-1.4	0.4	1.2	0.2	1.4	1.3	1.0
Less FISIM	2.0	-2.3	4.3	-12.7	-4.1	-2.6	-0.6	-0.9	0.1	2.3
TOTAL GROSS VALUE ADDED AT BASIC PRICES	1.4	-0.8	-3.4	-1.4	1.4	-0.5	0.2	0.6	0.8	1.5

Source: STATIN website (2018)

During the same period, the growth rate of gross value added for Hotels and Restaurants exceeded the overall growth of the economy for all the years with the exception of 2007 (See Figure 3).

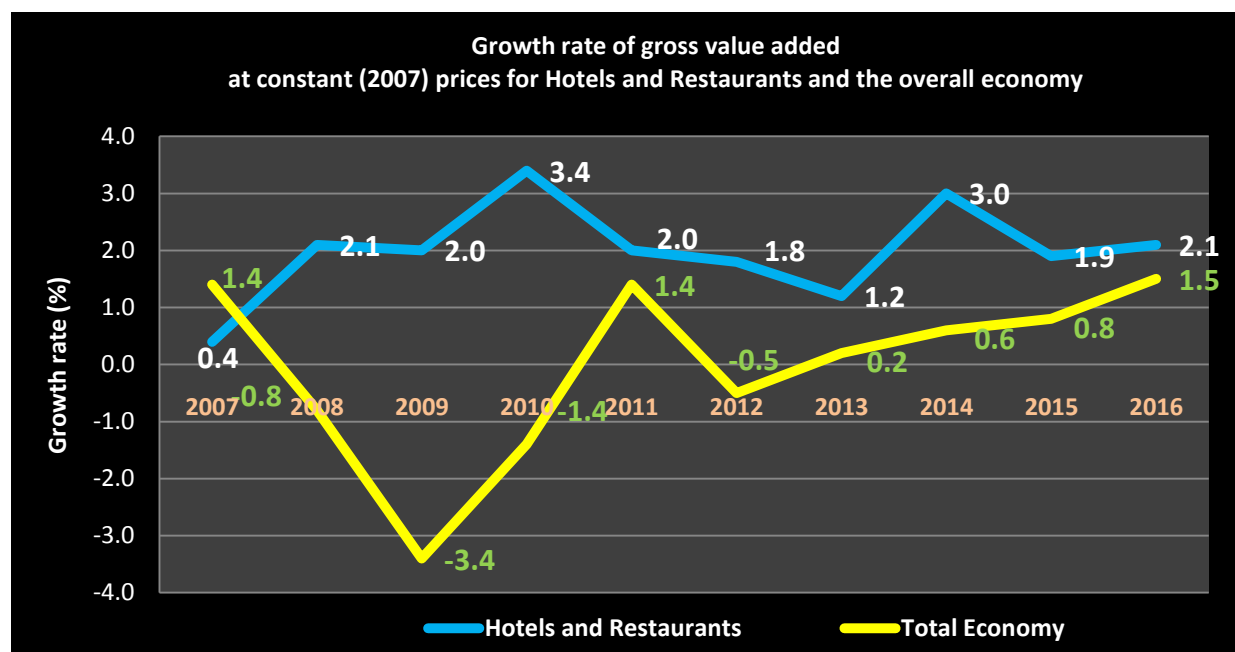


Figure 3

In terms of job opportunities, Figure 4 gives an indication of prospects for employment in the Tourism industry.

Jobs in the Tourism industry



Figure 4

The Health and Wellness Tourism industry is an emerging area on which JAMPRO has placed some focus.¹⁶ Health and Wellness Tourism comprises two major service areas, namely Wellness Tourism and Medical Tourism, with greater emphasis placed on the development of the latter.¹⁷ Opportunities exist for the establishment of Dental Services, Diagnostic Facilities, General Hospital Facilities and Specialized Facilities to cater to the needs of the Medical Tourists who will visit Jamaica to access these services.¹⁸ The development of the Medical Tourism industry envisions building an international reputation for Jamaica as a prime Medical

¹⁶ JAMPRO Policy and Business Advocacy (2018)

¹⁷ Ibid

¹⁸ Ibid

Tourism destination in order to generate substantial growth in the wider economy by attracting 100,000 medical tourists within 10 years.¹⁹

4.3 Creative industries

Jamaica's reputation as the cultural powerhouse of the Caribbean has positioned the island as a major producer of creative commodities for global usage.²⁰ Jamaica has produced world class Musicians, Performers, Writers and Sportsmen and Women, which in turn have galvanized the creative industries around areas such as Music, Craft, Athletics, Cuisine, Fashion, Fine Arts, Publishing, Advertising as well as other creative goods and services such as Film and Animation.²¹

4.3.1 Animation

Animation is a way of making a movie from many still images.²² It involves creating the illusion of moving images and model by displaying sequential images in rapid succession.²³ Animation falls under two basic categories - 2D and 3D animation.²⁴ Two dimensional animations are a series of drawings based on width and height, while 3D animations are the process of generating three-dimensional moving images in a digital environment.²⁵

The size of the global Animation industry was about US\$244 billion in 2015.²⁶ The major animation markets include the United States, Canada, Japan, China, France, Britain, Korea and Germany.²⁷ The rapid advancement of technology has made computer animation more accessible, thus causing it to be one of the fastest growing industries globally.²⁸ The demand for animated entertainment has expanded with increased broadcasting hours by cable and satellite

¹⁹ Ibid

²⁰ JAMPRO website - <http://www.jamaicatradeandinvest.org/trade/buyers/source-authentic-jamaican/creative-industries>

²¹ Ibid

²² Banik, D. - Animation Concepts

²³ Ibid

²⁴ Ibid

²⁵ Ibid

²⁶ Nasdaq (2017)

²⁷ Ibid

²⁸ Ibid

television, coupled with the expanding popularity of the internet. In the early 1980s and throughout the 1990s, animation series were aimed at children aged nine and below.²⁹ In recent years however, TV stations have been producing animation series for teenagers, adults and the entire family.³⁰

The current Animation industry is influenced by large multinational studios as well as TV broadcast companies and cable channel companies who are expanding business operations.³¹ It is important to note that international companies are increasingly looking at Jamaica as a destination for outsourcing animation production.³² JAMPRO has partnered with Studio C, the World Bank / Korean Trust Fund, and the Ministry of Science, Energy, and Technology (MSET) to further develop Jamaica's animation industry for investment and export opportunities through Youth Employment in the Digital and Animation Industries (YEDAI) programme.³³

The Creative Industries Education and Employment initiative, which is supported by the YEDAI programme was launched on April 19, 2017.³⁴ This Programme is designed to facilitate the training of 150 youths annually to acquire skills in animation and place them in animation projects geared at supplying the international market.³⁵ JAMPRO has also been working with local and international partners to prepare Jamaica for investment opportunities.³⁶

Animation has the potential to create job opportunities such as Animators, Graphic and Web Designers (See Figure 5).³⁷ Furthermore, there are occupations which have emerged in the Animation industry, such as Character Technical Directors and Scientific Visualization Developers.

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Ibid

³³ JAMPRO (2017) – JAMPRO aims to develop Jamaica's Animation industry

³⁴ Ibid

³⁵ Ibid

³⁶ Ibid

³⁷ Ibid

Job opportunities in the Animation industry

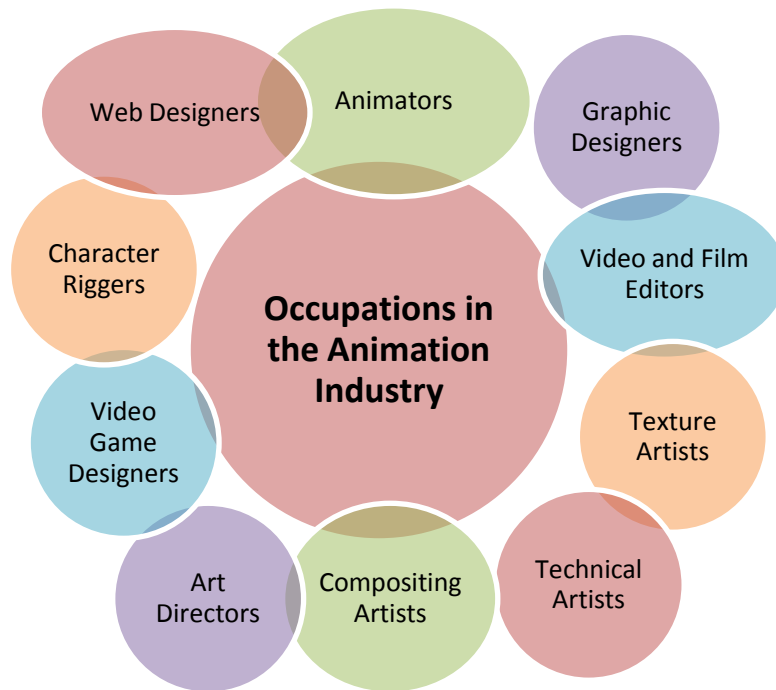


Figure 5

4.3.2 Film

The Jamaica Film Commission is mandated to promote the Jamaican Film industry by facilitating activities that increase investment, export and employment within the Industry.³⁸ Jamaica is globally recognized as one of the most naturally attractive locations for filming and as such, overseas Filmmakers have been coming to the island since the early 1900s.³⁹ Nevertheless, it was only during the 1980s when the island instituted a targeted plan to attract "Hollywood" to Jamaica, that there was a drastic increase in the number and types of film projects done here.⁴⁰ These ventures helped to facilitate job opportunities for persons who had the skills for the Film

³⁸ Film Jamaica

³⁹ Ibid

⁴⁰ Ibid

industry. According to JAMPRO, for the 2016/17 financial year, some 2,571 jobs were created by the film industry, compared to 1,406 in the previous year.⁴¹

In 2018, JAMPRO's Film Commission will focus on creating more jobs for Jamaicans working in the Screen-Based industries.⁴² The potential job opportunities will include Scriptwriters, Story Editors, Costume Designers, Visual Effects Producers and Makeup Artists (See Figure 6).

Potential job opportunities in the Film industry



Figure 6

⁴¹ Jamaica Information Service (2017) – More Jobs Created in the Film Industry

⁴² Jamaica Gleaner (2018)

4.4 Construction

This Industry comprises a wide range of activities involving construction, alteration, and/or repair.⁴³ Some examples of these activities include residential construction, bridge erection, roadway paving, excavations, demolitions, and large scale painting jobs.⁴⁴ The Construction industry is linked to other domestic economic sectors including Housing, Manufacturing, Tourism, Transport, Financial and Business Services, Communication and Distribution. Consequently, any economic activity in these sectors contributes to growth in the Construction sector.⁴⁵

In Jamaica, there are approximately 500 companies in the Construction industry.⁴⁶ According to the Statistical Institute of Jamaica (STATIN), the Industry employed 103,100 persons in the last quarter of 2017. The Planning Institute of Jamaica (2017) reported that the Construction sector grew by 1.5 per cent in 2017. The source also revealed that this was largely due to increased activity in residential and non-residential projects. Additionally, in terms of residential construction, housing starts⁴⁷ increased from 385 units in the fiscal quarter of April to June 2016 to 1,687 units in 2017.⁴⁸ Non-residential developments included new projects as well as expansion and renovation works at several resort properties such as the Wyndham Hotel – 455 rooms, Oyster Bay – 355 rooms, and Spanish Court II – 120 rooms. These and other commercial projects will facilitate job opportunities in several areas such as Civil Engineers, Structural Engineers, Skilled Manual Labourers, Electricians, Quantity Surveyors and Site Managers (See Figure 7).

⁴³ United States Department of Labor (2017)– Construction Industry

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ Jamaica Gleaner (2017) - Construction Can Boost Growth

⁴⁷ Housing starts is an economic indicator that reflects the number of privately owned new houses on which construction has been started in a given period.

⁴⁸ Jamaica Gleaner (2017) - Housing Demand Expected To Rise

Employment opportunities in the Construction industry

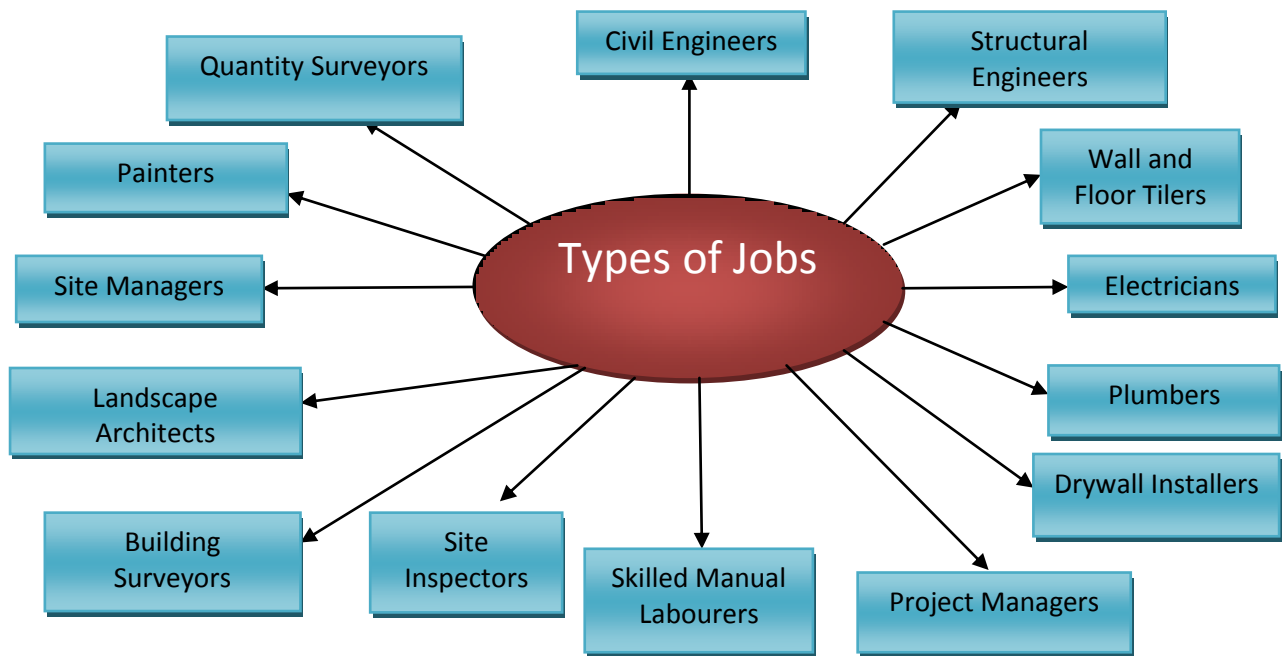


Figure 7

4.5 Manufacturing, Energy and Mining (MEM)

According to JAMPRO (2018), the outlook for the Manufacturing, Energy and Mining (MEM) industries is positive with investments on the horizon and others expected (particularly for the Manufacturing industry) with the recent passing of the Special Economic Zone (SEZ) Legislation. The SEZ Act, which came into force on August 1, 2016, provides for the designation, promotion, development, operation, and management of SEZs, the establishment of a SEZ Authority and the granting of incentives in order to attract domestic and foreign investments.⁴⁹ The Regulations are intended to drive the SEZs, which are expected to open up significant economic opportunities for Jamaicans in terms of Manufacturing, Small-Business Development, foreign exchange earnings and importantly employment generation.⁵⁰

⁴⁹ JAMPRO- Frequently Asked Questions

⁵⁰ Ibid

For the MEM industries, job opportunities will require the STEM subjects (Science, Technology, Engineering and Mathematics) at the primary through to post-graduate levels as these subjects represent the foundation educational requirements for these target sectors. According to JAMPRO (2018), it is anticipated that by the end of this fiscal year (FY) 2017/18, approximately 553 jobs will be created in the MEM industries. Forecasts for job creation in the MEM sectors are 318 jobs for FY 2018/19 and 332 jobs for FY 2019/20. The types of jobs include Engineers, Computer Programmers and Software Developers (See Figure 8).

Potential Job opportunities from the MEM industries

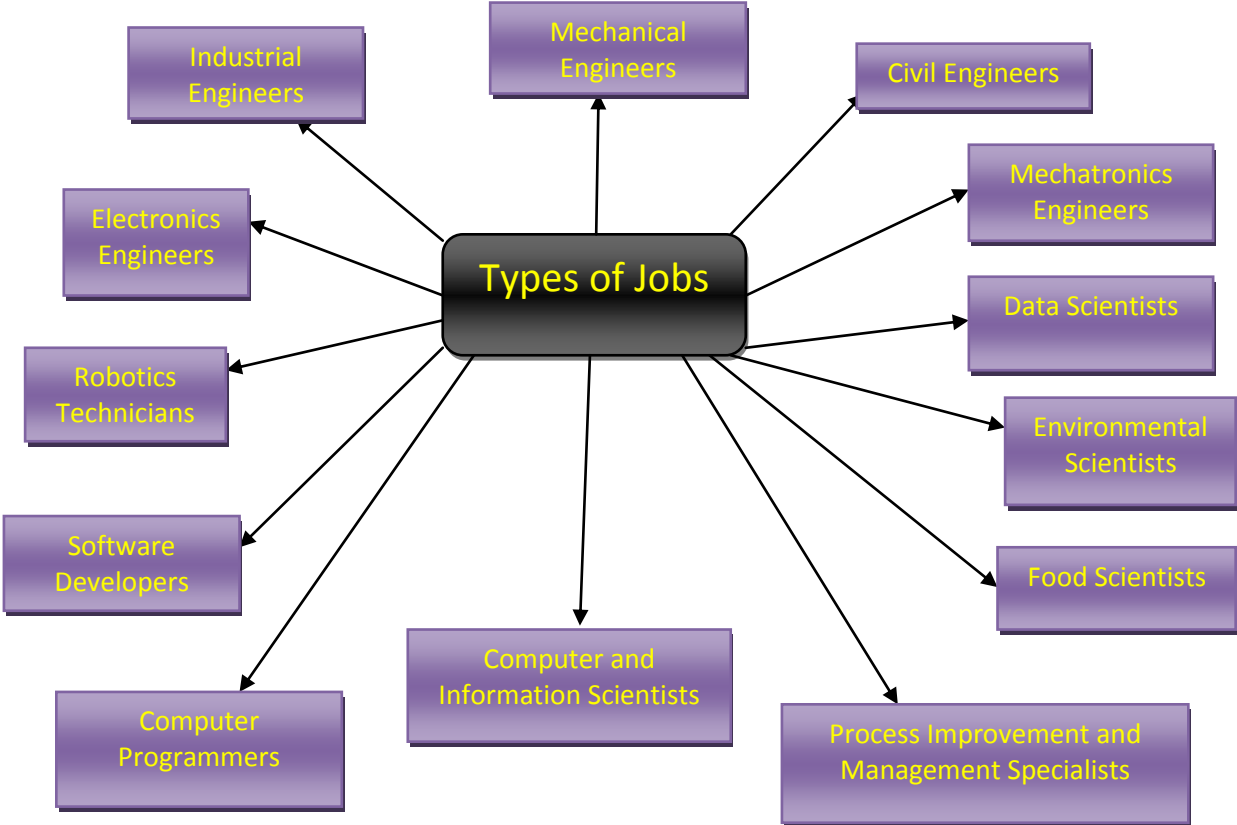


Figure 8

4.6 Agriculture

Agriculture represents great potential for much of Jamaica’s future prosperity and prospective revenues. In 2016, the Agriculture industry experienced growth of 17 per cent, thus resulting

in a reduction of US\$6 million in the country's food import bill.⁵¹ There are a number of markets ready to absorb Jamaican agricultural products – both primary and processed. These include:

- Jamaica's domestic market;
- A large and consistent tourist trade;
- The large market from nearby USA;
- The Caribbean, Central and South America; and
- Other countries around the world that are accustomed to the quality goods that Jamaica produces and the Diaspora populations that are hungry for a taste of home.⁵²

However, given the effects of globalization and competing market demands, there is a need to further diversify agricultural production in Jamaica in order to improve the Industry's competitive advantage.⁵³ With regards to new frontiers in Agriculture, focus is being placed on increasing resources in areas such as Organic Farming, Biotechnology and Aquaculture, which will enable the cultivation of plants that contain nutrients that can be extracted for the Nutraceutical and Foods industries.⁵⁴ These activities can create many job opportunities as depicted in Figure 9 which gives an indication of some potential employment opportunities.

⁵¹ <http://jis.gov.jm/growth-agriculture-contributes-lower-import-bill/>

⁵² Ibid

⁵³ JAMPRO (2011). Investing in Jamaica's Agricultural Industries

⁵⁴ Ibid

Job opportunities in the Agricultural industry



Figure 9

4.7 Cyber Security

As the use of technology increases, societies become more reliant on its services, which facilitate the potential for greater threats such as cybercrime, industrial espionage and cyber attacks. Therefore, investment in cyber security has increased in recent years.⁵⁵

Cybercrime comes in a variety of forms ranging from attacks on websites through to theft, blackmail, extortion, manipulation and destruction. Various tools are used to carry out

⁵⁵ Instituto Nacional de Ciberseguridad (2016). Market trends in cyber security

malicious activities, including malware, ransomware, spyware, social engineering as well as alterations to physical devices for example, ATM skimmers.⁵⁶

Global trends in cybercrimes demonstrate that when compared to other sectors, the Financial sector is most vulnerable to attacks by cyber criminals.⁵⁷ Their activities include phishing, identity theft and the creation of fake banking apps. The United Nations Office of Drugs and Crime (UNODC) estimates that identity theft is the most profitable form of cybercrime, generating perhaps US\$1 billion per year in revenue on a global basis.⁵⁸ The same UNODC Report estimated that the cost of identity theft using cyber techniques in the United States was US\$780 million in 2016.⁵⁹ Additionally, the International Criminal Police Organization (INTERPOL) has stated that more criminals are exploiting the speed, convenience and anonymity that modern technologies offer in order to commit a diverse range of criminal activities.⁶⁰

In Jamaica, the emerging trend indicates an increase in cyber incidents. The Government is aware that tackling this challenge is difficult. As such, a Cyber Security Strategy (CSS) was developed in 2015, recognizing the fact that while ICT is a necessary tool for national development, it presents inherent risks that need to be guarded against. The CSS has sought to establish a framework on four key areas, namely technical measures, human resource and capacity building, legal and regulatory and public education and awareness.⁶¹ These measures are geared towards protecting citizens from criminal elements and at the same time maintain confidence and trust in the economy given the continuous growth of sectors such as Business Process Outsourcing.

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Government of Jamaica – National Cyber Security Strategy

Despite the potential threats, the Cyber Security industry has the potential to create numerous job opportunities. Jobs that have emerged in the global labour market include Security Analysts, Security Architects, Security Engineers and Chief Information Security Officers (See Figure 10).

Potential job opportunities in Cyber Security industry

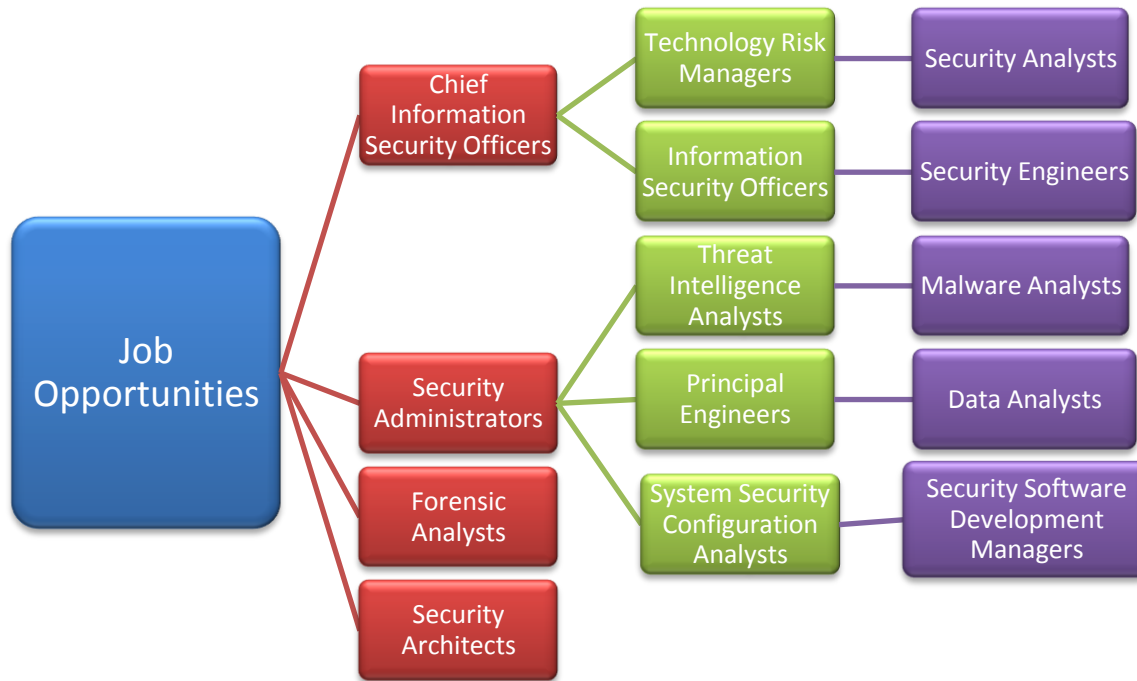


Figure 10

4.8 Robotics

This is an inter-disciplinary branch of Engineering and Science that includes Computer Science, Mechanical and Electrical Engineering.⁶² Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.⁶³ Rapid advances in technology have led to a surge of public

⁶² International Federation of Robotics (2017)

⁶³ Ibid

interest in automation and robotics.⁶⁴ Figures from the International Federation of Robotics (IFR) indicate that sales of robots are increasing yearly, with a 15 per cent increase in 2015 over the previous year.⁶⁵ The IFR estimates that over 2.5 million industrial robots will be at work in 2019, representing an average annual growth rate of 12 per cent between 2016 and 2019.⁶⁶

Robots increase productivity and competitiveness and if used effectively, enable companies to become or remain competitive. This is particularly important for small-to medium sized (SME) businesses that are the backbone of both developed and developing country economies.⁶⁷ It also enables large companies to increase their competitiveness through faster product development and delivery.⁶⁸

Internationally, the Banking and Financial sectors are slowly moving from the first digital age to the second, where cloud computing, mobile-first and digital dashboards are the norm and new technologies are being adopted.⁶⁹ In Jamaica, commercial banks have invested in automated systems to replace human labour in order to increase the quality of service delivery. Automated systems in the Banking sector are designed to increase accuracy, predictability and remove human error. They also ensure compliance with internal regulations and collect data that standardize systems in a better way.

The general perception of robotics and automation is that they will reduce employment by replacing humans with robots. However, as automation is integrated into organizations, it presents an opportunity for persons to increase their skills in order to maintain employment. Automation will not only require employees to be trained in new skills to handle new technologies, but also to up-skill and take on more complex tasks as machines handle simpler

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ Singh (2017). Automation in the Manufacturing sector.

ones. In this new era of automation and Industry 4.0,⁷⁰ the skill sets needed are broader than before and will include analytical and decision-making abilities. Other skills that will be in demand include:

- Mechatronics⁷¹
- Robot Programming
- Factory Automation
- Process Automation
- Software Development
- Solution Architecture
- Electronics
- Automation Testing
- Design Engineering
- Graphic Designing
- Project Management

In Jamaica, investment in the training and development of students for the Robotics industry has increased at both secondary and tertiary levels. At the secondary level, a group of students from five (5) schools -Jamaica College, Calabar High School, Immaculate Conception High School, Kingston College and St George's College participated in the first International Robot Olympics for High School Students held in Alexandria, Virginia in 2017.⁷² This Programme is intended to create a platform to get youngsters from different parts of the world and different cultures to come together and solve global issues.⁷³ Similarly, at the tertiary level, the University of Technology (UTECH), Faculty of Engineering students showcased their robotic innovations

⁷⁰ Industry 4.0 is a name for the current trends in automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the internet of things, cloud computing and cognitive computing.

⁷¹ Mechatronics is a multidisciplinary field of science that includes a combination of mechanical engineering, electronics, computer engineering, telecommunications engineering, systems engineering and control engineering.

⁷² Jamaica Gleaner – Jamaican Students on historic robotics feat.

⁷³ Ibid

created for competition in North Carolina, USA.⁷⁴ These initiatives are designed to get students engaged and advance their skills in robot development.

The increased use of robotics can also facilitate new job opportunities. The Robot industry itself generates 170,000 to 190,000 jobs worldwide, some of which include Support Staff, Operators, Data Scientists, Automated Machine Technicians and Robotics Process Automation Experts (See Table 3).

Table 3
Occupations needed for the Robotics industry

Occupations
Automated Machine Technicians
Automobile Engineers
Communication Engineers
Data Scientists
Electrical Engineers
Electronics Managers
Graphic Designers
Mechatronics Engineers
Operators
Process Planning Engineers
Product Engineers
Project Officers
Robotics Automation Developers
Robotics Engineers
Robotics Process Automation Experts
Robotics Specialists
Robotics Trainers

⁷⁴ UTECH (2017) - Voices. Volume 1, issue 3

Occupations
Sales Engineers
Sales Managers
Science Teachers
Senior Design Engineers
Senior Maintenance Engineers
Senior Software Engineers
Stem-Robotics Innovation Engineers
Support Staff
Training Managers

4.9 Gaming

The Gaming industry refers to games of chance that are usually played for profit or wagers.⁷⁵ Gambling has been prevalent in Jamaica for centuries.⁷⁶ Legislation governing gambling in Jamaica, the Betting, Gaming and Lotteries Act (BGLA) was passed in 1965.⁷⁷ Other legislations are the Jamaica Racing Commission Act, 1972 and the Casino Gaming Act, 2010.⁷⁸

Currently, the Gaming industry in Jamaica includes a variety of operations such as:⁷⁹

- Lotteries
- Horse Racing
- Sports Betting
- Gaming Machine Operations
- Casino
- Prize Promotions
- Bingos
- Internet Gaming

⁷⁵ HEART Trust/NTA (2014) – The Gaming Industry Study

⁷⁶ Betting, Gaming and Lotteries Commission

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ HEART Trust/NTA (2014) – The Gaming Industry Study/ Betting, Gaming and Lotteries Commission

Jamaica is optimistic about the growth of the Gaming industry. For the 2016/2017 fiscal year, the Gaming sector recorded J\$111.25 billion in revenues, compared to J\$91.90 billion in 2015/16. This represents a 21 per cent increase in revenue performance.⁸⁰ The Lottery segment of the Industry posted J\$36.8 billion in 2016/17 or J\$1.90 billion over the previous year. Meanwhile, the Betting segment of the Industry recorded J\$10.04 billion or a 12 per cent increase, moving from J\$8.9 billion in the previous year.⁸¹

Despite the generation of revenues from this Industry, it is susceptible to illegal gambling activities. Therefore, legal and regulatory framework has to be constantly updated in order to monitor the Industry in terms of gambling activities.⁸² The Government has recognized the Gaming industry as important, not only for its generation of revenues, but also for providing a diverse range of employment opportunities in many occupational areas such as Technical, Administrative, Marketing and Promotions, Regulatory, Business Development, Medical, Counselling and Animal Care.⁸³ Job roles in the Industry range from junior entry level positions, to senior executive level positions within private sector organizations and gaming regulatory entities in the public sector.⁸⁴ Figure 11, gives an indication of the types of occupations within the Gaming industry. Some of these occupations include Casino Managers, Dealers, Security Officers, Casino Hosts and Gaming Experts.

⁸⁰ Jamaica Information Service (2017) – Gaming Sector Poised for Growth

⁸¹ Ibid

⁸² HEART Trust/NTA (2014) – The Gaming Industry Study

⁸³ Betting, Gaming and Lotteries Commission

⁸⁴ Ibid

Jobs in the Gaming industry

Casino Managers	Pit Managers	Pit Clerks	Dealers	Bankroll Custodians
Cage Managers	Security Officers	Surveillance Attendants	Operations Managers	Gaming Experts
Cashiers	Compliance Managers	Gaming Marketing Managers	Jockeys	Casino Gaming Specialists
Horse Trainers	Casino Hosts	Software Engineers	Audio Engineers	Gaming Auditors
Waiters/Servers	Racing Officials	IT Support Specialists	Front Desk Clerks	Production Coordinators

Figure 11

5.0 Hot Occupation Trends in Jamaica

The MLSS produces a quarterly publication known as *Hot Occupations*, which gives an analysis of job advertisements posted in the classified and career sections of the Sunday and Wednesday editions of the Jamaica Gleaner and Observer. It also reviews data retrieved from the Electronic Labour Exchange, Work Permit and Private Employment Agency Departments of the MLSS.⁸⁵

5.1 Job Vacancies from Newspaper Advertisements

Since the Jamaican economy is primarily driven by the Service sector, a large proportion of job vacancies are found in this area. Table 4 presents a list of the top ten (10) jobs advertised in January 1, 2017 to March 31, 2017. Some of these vacancies were Managers, Sales Representatives and Officers.⁸⁶

Table 4
Top ten job vacancies in Jamaica - January 1, 2017
to March 31, 2017

1. Managers/Directors
2. Customer/Sales Representatives
3. Officers
4. Supervisors
5. Accountants
6. Teachers
7. Technicians
8. Assistants
9. Clerks
10. Nurses

Table 5 outlines the occupational areas by leading vacant position obtained from LMIS Hot Occupations analysis for the period January 1, 2017 to March 31, 2017.

⁸⁵ The National Labour Market Survey (NLMS) conducted in 2017, revealed that 44 per cent of 660 employers surveyed used the local newspaper to advertise their job vacancies.

⁸⁶ Ministry of Labour and Social Security LMIS Website – www.lmis.gov.jm

Table 5
Occupational areas by leading vacant positions
Advertised (January 1, 2017 to March 31, 2017)

Occupational areas	Leading vacant positions advertised
Managers/ Directors	<p>Managers: Accounting, Activities, Administrative, Assets & Property, Bar & Lounge, Beverage Warehouse, Branch, Brand, Budget & Investment, Business Development, Call Centre Operations, Campus, Card, Case, Catering Sales, Client Relations, Commercial Services, Construction, Corporate, Corporate Social Responsibility, Country Outsourcing, Credit Solution, Division, Duty Hotel, Entertainment, Environmental Health & Safety, Equipment, Finance, Fleet Maintenance, Flight Operations Oversight, Food & Beverage, Food Services, Front Office & Reservation, General, Grounds Maintenance & Pest Control, Group Information Technology, Guest Relations, Health Services Training & Education, Housekeeping, Human Resource & Administration, I.T. Project, Industrial Relation & Staff Welfare, Information Systems, Innovation Lab., Internal Audit, Inventory, Investment Project & Implementation, Landscape, Logistics, Maintenance, Marketing, Micro Finance, MIS, Office, Operations, Pharmaceutical Operations, Plant, Policy Defence, Procurement, Production, Programme, Project, Promotions & Outreach, Property, Purchasing, Quality Assurance, Quality Control, Quality Systems, Radio Marketing & Sales, Regional, Reservations, Restaurants, Retail, Risk Compliance & Legal Services, Room Services, Sales, Security, Service, Shift, Site, Station, Stewarding, Store, Strategic Relations, Supply Chain, Trade Marketing, Training, Warehouse, Wealth</p> <p>Directors: Audit Portfolio, Chief Technical, Communication, Corporate Services, Cultural Research & Information, Executive, Finance, Food & Beverage, Group Human Resource, Human Resource Management & Administration, I.T., Insurance, Legal Service, Management Information System, Modernization Initiatives & Strategic, Projects, National Blood Transfusion Service, Administration, Operations, Policy, Principal, Public Service Capability Development, Quality Standards & Monitoring, Quality Standards, Implementation & Quality Assurance, Regional, Regulation, Policy, Monitoring & Enforcement, Research & Quality Assurance, Spa, Wireless Engineering, Regional Technical</p>
Customer\Sales Service Workers	Administrative, Agent, Car Rental, Customer Service, Distributors, Drivers, Executive, Field, Front Office, General Insurance, Guest Services, Industrial Supplies, Life Insurance, Medical Sales, Merchandiser, Pharmaceutical, Promotion, Route, Sales Representative, Showroom, Technical Support
Officers	Accounting, Accounts Receivable, Administrative Support, Armed & Unarmed Security, Assistant Legal & Compliance, Billing & Collections, Budget, Business Development, Chief Compliance, Chief Executive, Chief Financial, Chief Nursing, Chief Operating, Collection & Recovery, Common Service Finance, Communications & Marketing, Community Relations, Compliance, Consumer Affairs, Contractor Sales, Corporate Communications, Credit, Credit & Collection, Customer Relations, Data Entry, Disaster Risk Management, Environmental, Extension, Grants, Human Resource, Information Technology, Inventory, Junior Corporate Finance, Legal, Loans, Maintenance, Marketing, Measurement & Evaluations, Medical, Member Service, Officer-In-Charge, Delinquency, Operations, Parish

Occupational areas	Leading vacant positions advertised
	Treatment Care & Support, Payable, Payroll, Procurement, Programme Development, Project, Public Relations, Publications, Purchasing, Quality Assistant, Quality Assurance, Quality Control, Recruitment, Recruitment & Training, Reporting & Compliance, Response, Returning, Risk & Compliance, Risk Management, Senior Communication, Senior Plant Protection, Senior Technical, Supplier Quality Assurance, Syllabus, Technical, Verification, Visitor Relations

5.2 Vacancies from the Electronic Labour Exchange

Since the enhancement of the LMIS in 2013, the Electronic Labour Exchange (ELE), which is the job placement section of the LMIS, has placed 2,906 persons in jobs. A total of 978 persons received jobs through the ELE in 2017. The types of jobs included Data Entry Clerks, Business Analysts, Graphic Designers, Customer Service Representatives, Cooks and Logistic Operations Officers. A total of 1,141 employers have been registered to the System since 2013, including 100 in 2017.

5.3 Vacancies released by Private Employment Agencies

As at December 2017, 77 Private Employment Agencies (PEAs) were registered to provide employment both locally and overseas to Jamaicans. Data submitted by PEAs to the MLSS for the period January to December 2017 was used to ascertain the types of positions that were in demand in Jamaica. The number of vacancies submitted totalled 1,847. Vacancies for Domestic Helpers accounted for 869 or 47 per cent, which was the largest group. Clerical Workers were next with 255 or 13.8 per cent, followed closely by Waiters with 253 or 13.7 per cent (See Figure 12).

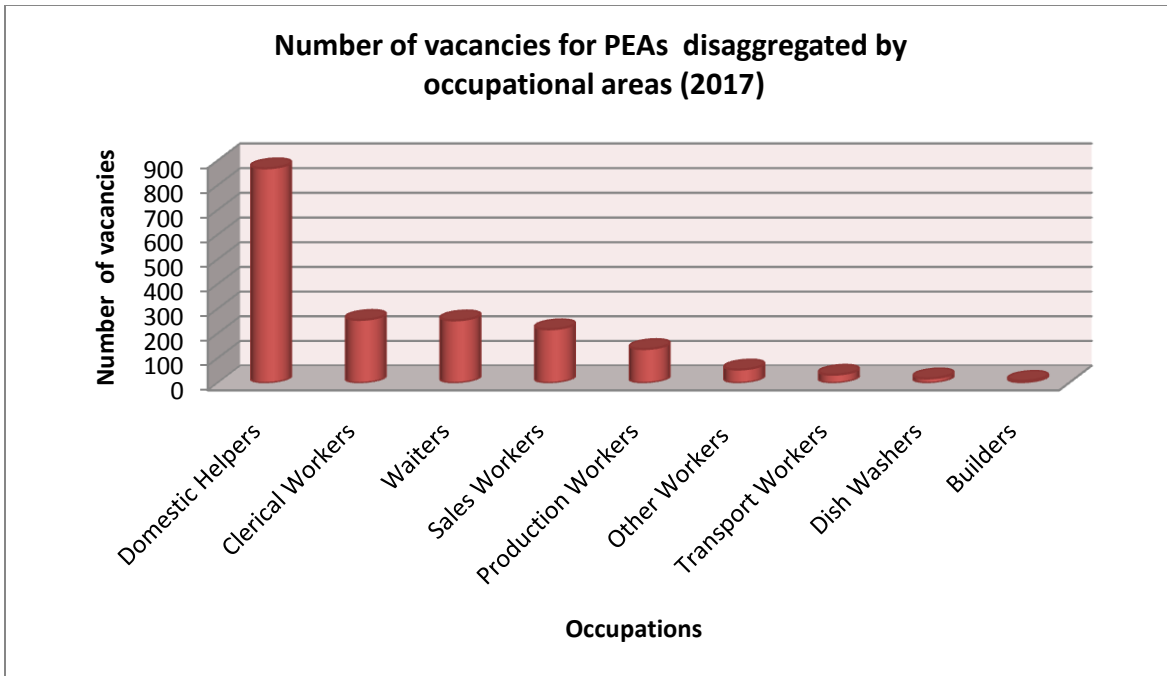


Figure 12

5.4 Work Permits issued by MLSS

This section reports on the work permits made available to international job seekers/employers that were approved by the MLSS during the period January, 2017 to December 31, 2017. A work permit should be granted on the premise that there is no local worker available in the specific area of work or if the specific skill is in short supply.

The total number of work permits issued for the period was 5,416. This figure represents both new and renewal applications. Of this total, 1,227 or approximately 22.7 per cent were granted to persons in Managerial positions. Table 6 shows the top ten (10) occupational areas for which work permits were granted.

Table 6
Work Permits issued for the period January 1, 2017 – December 31, 2017

Rank	Type of Jobs Issued
1.	Managers (including owners of businesses): Administrative, Wholesale & Retail Trade, Sales, Hotel, Other Service Organizations, Construction
2.	Cooks specializing in: Chinese Cuisine, Italian Cuisine, Indian Cuisine
3.	Technicians: Engineering, Telecommunications
4.	Engineers: Mechanical/Electrical, Civil, Mining, Surveyor
5.	Dancers: Night Club/Entertainment, Ballet, Ballerina
6.	Trades related workers with specialized skills: Electrician, Plumber, Welder, Mechanic
7.	Medical workers: Dentist, Registered Nurse, Surgeon, Physician
8.	Teaching Professionals: Lecturer, Professor
9.	Accountants: Chartered, Auditor
10.	Machine Operators: Crane Operator, Hydroelectric Operator, Boilersmith

6.0 Recruitment issues among employers in Jamaica

The National Labour Market Survey (2017) investigated the types of difficulty employers faced when seeking to hire staff. Lack of work experience was the leading response, followed by under-qualified applicants and bad impression during interviews (See Figure 13).

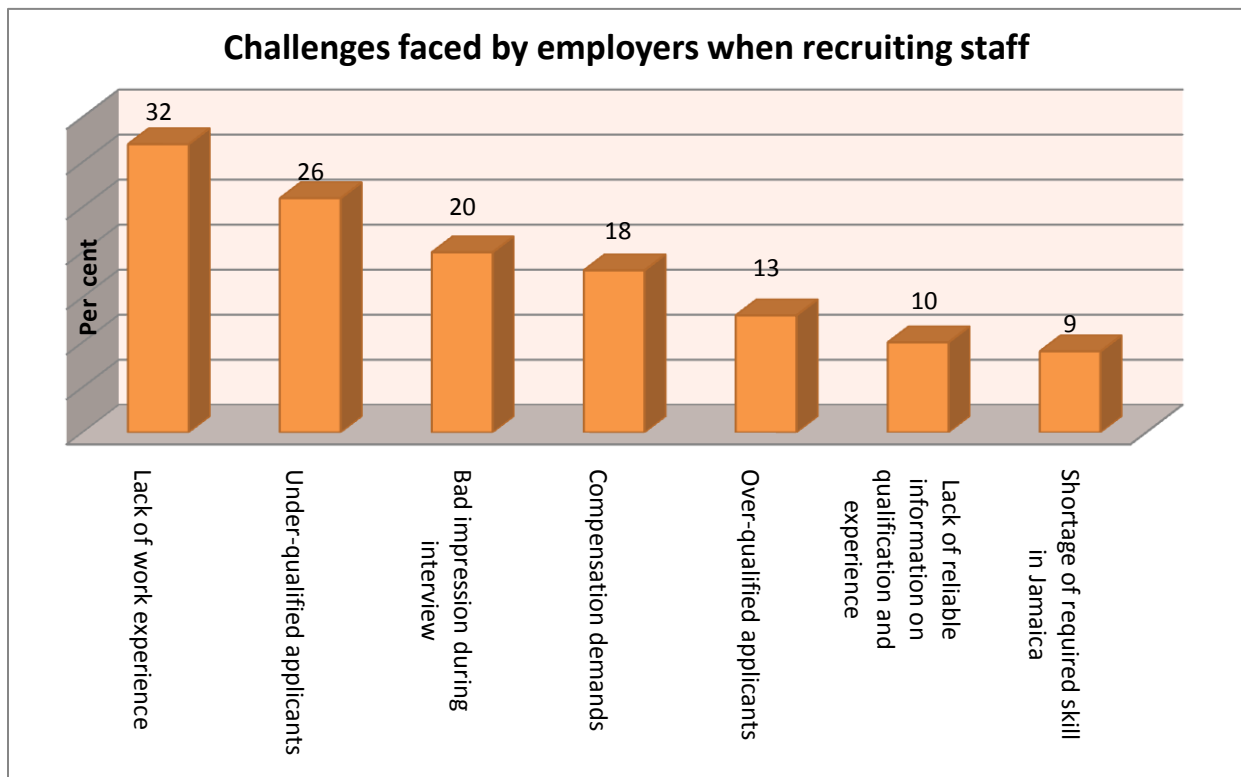


Figure 13

As job markets become increasingly competitive and the availability of skills grow more diverse, recruiters need to be more selective in their choices, given that poor recruiting decisions can produce long-term negative effects.⁸⁷ Figure 14 provides information retrieved from the NLMS (2017) which sought to examine the attributes employers look for when hiring new staff. Data gathered showed that the main attributes they look for are “knowledge and skills specific to the position,” “persons who are responsible and committed” and “prior work experience.” It is

⁸⁷ Richardson <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN021814.pdf>

important to note that shortage of required skills in Jamaica was the least of the challenges faced by employers in their recruitment efforts.

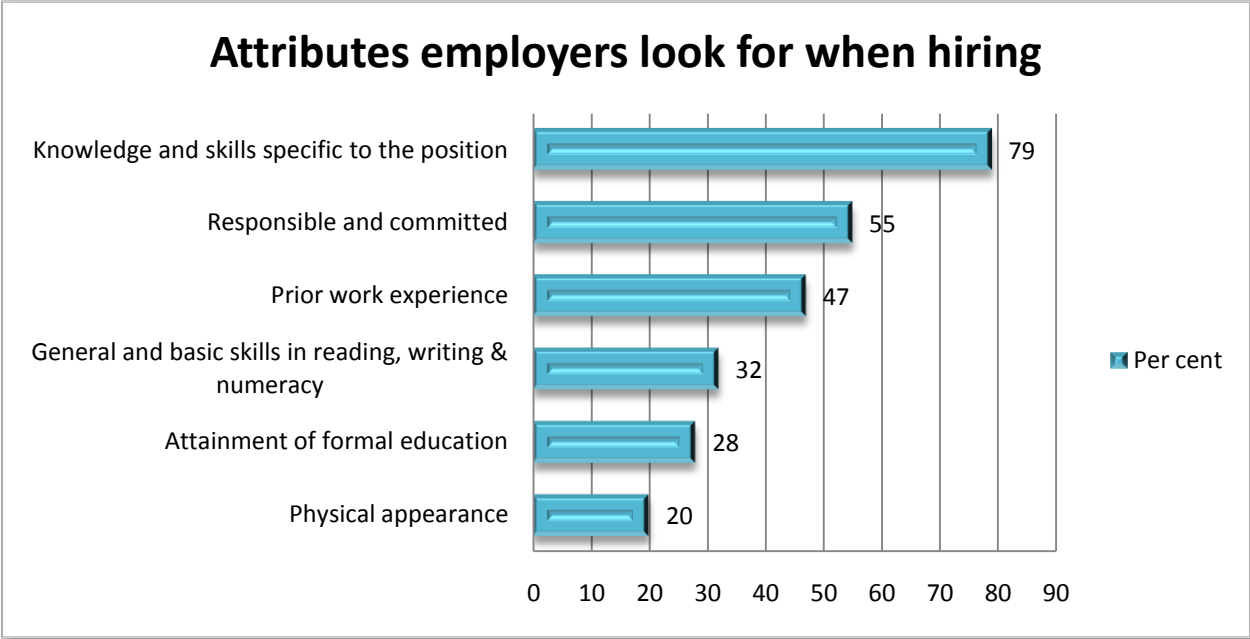


Figure 14

7.0 Recommendations from MLSS Labour Market Forum

Following the publication of the NLMS (2017), the MLSS scheduled several events to disseminate the findings of the study and to provide possible solutions to some of the major issues that were highlighted. A Forum was held on December 2017 with students, Curriculum Developers, Policy Makers and Employers to focus on the following theme “Jamaican Employers and Educators Working together to close the skills gap.”

The areas covered were:

- The findings of the NLMS (2017);
- Soft skills in the workplace;
- Work experience;
- Local and international partnerships and best practices of employers’ interaction with education and training institutions to close the skills gaps (focusing on the provision of information, increasing work experience and improving soft skills);
- MLSS role in increasing work experience and improving soft skills;
- Streaming of information to the public for dissemination and awareness;
- Recognition by the MLSS of outstanding Employers, Education and Training institutions and past scholarship holders from Holy Trinity initiative.

Recommendations

- Use of the National BPO Coordinator to understand the BPO sector and find innovative ways to maximise opportunities, while adding more value to the BPO sector.
- The country should not focus solely on Call Centre jobs in the BPO, but also on higher end jobs such as Legal and Medical Processing Outsourcing sector.
- Jamaica should start using expatriates to train local persons in an effort to reduce the reliance on experts from overseas.

- Invest more in human capital in order to increase skill transfer and succession planning.
- Collaboration between companies and institutions so that graduates will be equipped with the necessary skills required in the work place.
- Greater emphasis is to be placed on providing job opportunities for Persons with Disabilities (PwDs). In terms of the BPO sector, a request was made for the Sector to implement the proper software to accommodate PwDs in the work place.
- Workers should recognise that no jobs are secure. Consequently, they should keep abreast of the trends in their industry to see if their jobs are becoming obsolete and prepare for other opportunities.
- The need to enforce a comprehensive Fair Labour Standard Act that includes the pillars of the Decent Work Agenda.
- It was recommended that persons in the Tourism sector should receive official training and more time should be dedicated to classroom sessions in experiential training.
- Put together a repository or framework to deal with soft skills.
- There must be a partnership between Ministry of Education, Youth and Information, MLSS and the relevant stakeholders to give youths an opportunity to develop their soft skills, while getting the necessary work experience.
- Integrate soft skills into the school system from very early and do not wait until after High school.

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