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**MINISTRY OF LABOUR AND SOCIAL PROTECTION**

**STATE DEPARTMENT FOR LABOUR**

**NATIONAL HUMAN RESOURCE PLANNING AND DEVELOPMENT  
DEPARTMENT**

**SURVEY OF TRAINING IN LOCAL INSTITUTIONS**

**OUTTURNS REPORT**

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# TABLE OF CONTENTS

<b>TABLE OF CONTENTS .....</b>	<b>2</b>
<b>LIST OF TABLES.....</b>	<b>7</b>
<b>LIST OF FIGURES .....</b>	<b>9</b>
<b>FOREWORD.....</b>	<b>11</b>
<b>PREFACE.....</b>	<b>13</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>14</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>15</b>
<b>ACRONYMS/ABBREVIATIONS .....</b>	<b>16</b>
<b>DEFINITION OF TERMS.....</b>	<b>17</b>
<b>CHAPTER ONE.....</b>	<b>18</b>
1.0 Background.....	18
1.1 Objectives of the Survey.....	19
1.2 Justification for the Survey.....	19
1.3 Scope and Coverage.....	19
1.4 Methodology .....	19
1.5 Limitations and Constraints.....	20
<b>CHAPTER TWO - DATA ANALYSIS.....</b>	<b>21</b>
<b>2.0 INTRODUCTION.....</b>	<b>21</b>
2.1.1 Data Coding .....	21
2.1.2 Category and Type of Ownership of Training Institutions .....	21
2.1.3 Outturns by Categories of Training Institutions.....	22
2.1.4 Summary of Total Outturns by Programme for all Categories of Training Institutions, 2014 - 2016.....	22
2.1.5 Top five outturns by Programme and Sex in all Training Institutions that responded.....	24
2.1.7 Summary of Total Outturns by level of award for all Training Institutions that responded, 2014 -2016.....	26
2.1.8 Summary of Outturns from all Training Institutions by Sex, 2014-2016 .....	27
<b>2.2 UNIVERSITIES.....</b>	<b>27</b>
2.2.1 Outturns by Programme, Level and Sex in Universities, 2014 .....	27
2.2.2 Outturns by Programme, Level and Sex in Universities, 2015 .....	31
2.2.3 Outturns by Programme, Level and Sex in Universities, 2016 .....	34
2.2.4 Trend Analysis of Outturns in Universities .....	37
2.2.4.1 Programmes with Highest Outturns .....	37
2.2.4.2 Programmes with Lowest Outturns .....	37
2.2.4.3 Distribution of Outturns by Programme and Sex.....	38
2.2.4.4 Overall change in Outturns per Skill Level.....	39
2.2.4.5: Distribution of Outturns by Skill Level and Sex .....	40
2.2.4.6 Summary of Outturns by Year, Skill Level and Sex .....	41
<b>2.3 NATIONAL POLYTECHNICS.....</b>	<b>43</b>
2.3.1 Outturns by Programme, Level and Sex in National Polytechnics, 2014 .....	43

2.3.2	Outturns by Programme and Level in National Polytechnics, 2015.....	45
2.3.3	Outturns by Programme, Level and Sex in National Polytechnics, 2016 .....	47
2.3.4	Trend Analysis on Outturns in National Polytechnics, 2014-2016.....	49
2.3.4.1	Programmes with Highest Outturns .....	49
2.3.4.2	Programmes with Lowest Outturns .....	49
2.3.4.3	Distribution of Outturns by Programme and Sex .....	50
2.3.4.4	Overall change in Outturns per Skill Level.....	51
2.3.4.5	Distribution of Outturns by Skill Level and Sex.....	52
2.3.4.6	Summary of outturns by Year, Skill Level and Sex.....	53
<b>2.4</b>	<b>INSTITUTES OF TECHNOLOGY.....</b>	<b>53</b>
2.4.1	Outturns by Programme, Level and Sex in Institutes of Technology, 2014 .....	53
2.4.2	Outturns by Programme, Level and Sex in Institutes of Technology, 2015 .....	56
2.4.3	Outturns by Programme, Level and Sex in Institutes of Technology, 2016 .....	58
2.4.4	Trend Analysis on Outturns in Institutes of Technology, 2014-2016.....	60
2.4.4.1	Programmes with Highest Outturns .....	60
2.4.4.2	Programmes with Lowest Outturns .....	60
2.4.4.3	Distribution of Outturns by Programme and Sex .....	61
2.4.4.4	Overall change in Outturns per Skill Level.....	62
2.4.4.5	Distribution of Outturns by Skill Level and Sex .....	63
2.4.4.6	Summary of outturns by Year, Skill Level and Sex.....	64
<b>2.5</b>	<b>TECHNICAL TRAINING INSTITUTES.....</b>	<b>65</b>
2.5.1	Outturns by Programme, Level and Sex in Technical Training Institutes, 2014 .....	65
2.5.2	Outturns by Programme, Level and Sex in Technical Training Institutes, 2015 .....	67
2.5.3	Outturns by Programme, Level and Sex in Technical Training Institutes, 2016 .....	70
2.5.4	Trend Analysis on Outturns in Technical Training Institutes, 2014 - 2016.....	72
2.5.4.1	Programmes with Highest Outturns .....	72
2.5.4.2	Programmes with Lowest Outturns .....	72
2.5.4.3	Distribution of Outturns by Programme and Sex .....	73
2.5.4.4	Overall change in Outturns per Skill Level.....	74
2.5.4.5	Distribution of Outturns by Skill Level and Sex .....	75
2.5.4.6	Summary of outturns by Year, Skill Level and Sex.....	76
<b>2.6</b>	<b>TEACHER TRAINING COLLEGES.....</b>	<b>76</b>
2.6.1	Outturns by Programme, Level and Sex in Teacher Training Colleges, 2014.....	77
2.6.2	Outturns by Programme, Level and Sex in Teacher Training Colleges, 2015.....	78
2.6.3	Outturns by Programme, Level and Sex in Teacher Training Colleges, 2016.....	79
2.6.4	Trend Analysis on Outturns in Teacher Training Colleges, 2014-2016.....	80
2.6.4.1	Distribution of Outturns by Programme and Sex .....	80
2.6.4.2	Overall change in Outturns per Skill Level.....	80
2.6.4.3	Summary of Outturns by Year, Skill Level and Sex .....	81
<b>2.7</b>	<b>MEDICAL TRAINING COLLEGES.....</b>	<b>82</b>
2.7.1	Outturns by Programme, Level and Sex in Medical Training Colleges, 2014.....	82
2.7.2	Outturns by Programme, Level and Sex in Medical Training Colleges, 2015.....	83
2.7.3	Outturns by Programme, Level and Sex in Medical Training Colleges, 2016.....	84
2.7.4	Trend Analysis on Outturns in Medical Training Colleges, 2014- 2016.....	85
2.7.4.1	Programmes with Highest Outturns .....	85
2.7.4.2	Programmes with Lowest Outturns .....	85
2.7.4.3	Distribution of Outturns by Programme and Sex .....	86
2.7.4.4	Overall change in Outturns per Skill Level.....	89

2.7.4.5: Distribution of Outturns by Skill Level and sex.....	89
2.7.4.6: Summary of Outturns by Year, Skill Level and Sex .....	90
<b>2.8 KENYA SCHOOL OF GOVERNMENT (KSG) TRAINING INSTITUTIONS .....</b>	<b>91</b>
2.8.1 Outturns by Programme, Level and Sex, 2014.....	91
2.8.2 Outturns by Programme, Level and Sex, 2015.....	92
2.8.3 Outturns by Programme, Level and Sex, 2016.....	92
2.8.4 Trend Analysis on Outturns in Kenya School of Government, 2014 - 2016.....	93
2.8.4.1: Programmes with Highest Outturns .....	93
2.8.4.2 : Programmes with Lowest Outturns .....	93
2.8.4.3 Distribution of Outturns by Programme and Sex .....	93
2.8.4.4: Overall change in Outturns per Skill Level, 2014-2016.....	95
2.8.4.5 Distribution of Outturns by Skill Level and Sex .....	95
2.8.4.6 Summary of Outturns by Year, Skill Level and Sex .....	96
<b>2.9 TRAINING INSTITUTIONS UNDER GOVERNMENT MINISTRIES AND AGENCIES .....</b>	<b>97</b>
2.9.1 Outturns by Programme, Level and Sex in Training Institutions under Government Ministries and Agencies, 2014 .....	97
2.9.2 Outturns by Programme, Level and Sex in Training Institutions under Government Ministries and Agencies, 2015 .....	98
2.9.3 Outturns by Programme, Year and Sex in Training Institutions under Government Ministries and Agencies, 2016 .....	99
2.9.4 Trend Analysis on Outturns in Training Institutions under Government Ministries and Agencies, 2014 - 2016 .....	100
2.9.4.1 Programmes with Highest Outturns .....	100
2.9.4.2 Programmes with Lowest Outturns .....	101
2.9.4.3 Distribution of Outturns by Programme and Sex .....	101
2.9.4.4 Overall change in Outturns per Skill Level.....	103
2.9.4.5: Distribution of Outturns by Skill Level and Sex .....	104
2.9.4.6: Summary on Outturns by Year, Skill Level and Sex .....	104
<b>2.10 AGRICULTURE AND RELATED TRAINING INSTITUTIONS .....</b>	<b>105</b>
2.10.1: Outturns by Programme, Level and Sex in Agriculture and Related Institutions, 2014.....	105
2.10.2: Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2015.....	106
2.10.3: Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2016.....	107
2.10.4: Trend Analysis on Outturns in Agriculture and Related Institutions, 2014 - 2016 .....	107
2.10.4.1 Programmes with Highest Outturns .....	107
2.10.4.2: Programmes with Lowest Outturns .....	110
2.10.4.3: Distribution of Outturns by Programme and Sex .....	110
2.10.4.4: Overall change in outturns per Skill Level.....	111
2.10.4.5: Distribution of Outturns by Skill Level and Sex .....	112
2.10.4.6: Summary of Outturns by Year, Skill Level and Sex .....	113
<b>2.11 NATIONAL YOUTH SERVICE TRAINING INSTITUTIONS .....</b>	<b>114</b>
2.11.1: Outturns by Programme, Level and Sex in National Youth Service Institutions, 2014.....	114
2.11.2: Outturns by Programme, Level and Sex in National Youth Service Institutions, 2015.....	115
2.11.3: Outturns by Programme, Level and Sex in National Youth Service Institutions, 2016.....	115
2.11.4: Trend Analysis on Outturns in National Youth Service Institutions, 2014-2016 .....	116
2.11.4.1 Programmes with Highest Outturns .....	116
2.11.4.2: Programmes with Lowest Outturns .....	117
2.11.4.3: Distribution of Outturns by Programme and Sex .....	118

2.11.4.	Overall change in Outturns per Skill Level.....	119
2.11.4.5	Distribution of Outturns by Skill level and Sex.....	119
2.11.4.6	Summary of Outturns by Year, Skill Level and Sex.....	120
<b>2.12</b>	<b>TECHNICAL VOCATIONAL COLLEGES .....</b>	<b>121</b>
2.12.1:	Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2014 .....	121
2.12.2:	Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2015 .....	123
2.12.3:	Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2016 .....	125
2.12.4:	Trend Analysis on Outturns in Technical Vocational Colleges, 2014- 2016 .....	127
2.12.4.1:	Programmes with Highest Outturns .....	127
2.12.4.2:	Programmes with Lowest Outturns .....	127
2.12.4.3:	Distribution of Outturns by Programme and Sex .....	128
2.12.4.4:	Overall Change in Outturns per Skill Level.....	129
2.12.4.5:	Distribution of Outturns by Skill Level and Sex .....	130
2.12.4.6:	Summary of Outturns by Year, Skill Level and Sex .....	131
<b>2.13</b>	<b>VOCATIONAL TRAINING CENTRES (VTCS) .....</b>	<b>132</b>
2.13.1:	Outturns by Programme, Level and Sex in Vocational Training Centres, 2014 .....	132
2.13.2:	Outturns by Programme, Level and Sex in Vocational Training Centres, 2015 .....	133
2.13.3:	Outturns by Programme, Level and Sex in Vocational Training Centres, 2016 .....	133
2.13.4:	Trend Analysis on Outturns in Vocational Training Centres, 2014- 2016.....	134
2.13.4.1:	Programmes with Highest Outturns .....	134
2.13.4.2:	Programmes with Lowest Outturns .....	135
2.13.4.3:	Distribution of Outturns by Programme and Sex .....	135
2.13.4.4:	Overall change in Outturns per Skill Level.....	136
2.13.4.5:	Distribution of Outturns by Skill Level and Sex .....	137
2.13.4.6:	Summary of Outturns by Year, Skill Level and Sex.....	138
<b>2.14</b>	<b>VOCATIONAL REHABILITATION CENTRES.....</b>	<b>139</b>
2.14.1:	Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2014.....	139
2.14.2:	Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2015.....	140
2.14.3:	Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2016.....	141
2.14.4:	Trend Analysis on Outturns in Vocational Rehabilitation Centres, 2014 - 2016 .....	141
2.14.4.1:	Programmes with Highest Outturns .....	141
2.14.4.2:	Distribution of Outturns by Programme and Sex .....	142
2.14.4.3:	Overall Change in Outturns per Skill Level.....	143
2.14.4.4:	Distribution of Outturns by Skill Level and Sex .....	144
2.14.4.5:	Summary of Outturns by Year, Skill Level and Sex.....	145
<b>2.15.</b>	<b>COMMERCIAL COLLEGES.....</b>	<b>147</b>
2.15.1:	Outturns by Programme, Level and Sex in Commercial Colleges, 2014 .....	147
2.15.2:	Outturns by Programme, Level and Sex in Commercial Colleges, 2015 .....	150
2.15.3:	Outturns by Programme, Level and Sex in Commercial Colleges, 2016 .....	153
2.15.4:	Trend Analysis on Outturns in Commercial Colleges, 2014- 2016 .....	156
2.15.4.1:	Programmes with Highest Outturns .....	156
2.15.4.2:	Programmes with Lowest Outturns .....	157
2.15.4.3:	Distribution of Outturns by Programme and Sex .....	157
2.15.4.4:	Overall change in Outturns per Skill Level.....	158
2.15.4.5:	Distribution of Outturns by Skill Level and Sex .....	159
2.15.4.6:	Summary of Outturns by Year, Skill Level and Sex.....	160
<b>CHAPTER THREE:</b>	<b>SUMMARY OF FINDINGS.....</b>	<b>163</b>

<b>INTRODUCTION.....</b>	<b>163</b>
Universities.....	163
National Polytechnics.....	163
Institutes of Technology.....	164
Technical Training Institutes.....	164
Teacher Training Colleges.....	165
Medical Training Colleges.....	165
Kenya School of Government.....	165
Training Institutions under Government Ministries and Agencies.....	165
Agriculture and related Institutions.....	166
National Youth Service Training Institutions.....	166
Technical Vocational Colleges.....	166
Vocational Training Centres.....	167
Vocational Rehabilitation Centres.....	167
Commercial Colleges.....	168
<b>GENERAL OBSERVATIONS.....</b>	<b>168</b>
<b>CHAPTER FOUR : CONCLUSION AND RECOMMENDATIONS.....</b>	<b>170</b>
<b>INTRODUCTION.....</b>	<b>170</b>
<b><i>APPENDICES.....</i></b>	<b>173</b>
<i>Appendix 1: Total Outturns in all Training Institutions that Responded by Programme and Sex, 2014-2016.....</i>	173
<i>Appendix 2 : ISCED 2011 Classification.....</i>	174
<i>Appendix 3 : Questionnaire.....</i>	177

## LIST OF TABLES

TABLE 1: TRAINING INSTITUTIONS THAT RESPONDED BY CATEGORY AND TYPE OF OWNERSHIP .....	21
TABLE 2: SUMMARY OF TOTAL OUTTURNS BY PROGRAMME AND SEX FOR ALL CATEGORIES OF TRAINING INSTITUTIONS, 2014-2016.....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
TABLE 3: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN UNIVERSITIES, 2014.....	29
TABLE 4: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN UNIVERSITIES, 2015.....	32
TABLE 5: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN UNIVERSITIES, 2016.....	35
TABLE 7: SUMMARY OF UNIVERSITIES OUTTURNS BY YEAR, LEVEL AND SEX, 2014-2016 .....	42
TABLE 8: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN NATIONAL POLYTECHNICS, 2014.....	44
TABLE 9: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN NATIONAL POLYTECHNICS, 2015.....	46
TABLE 10: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN NATIONAL POLYTECHNICS, 2016.....	48
TABLE 12: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN NATIONAL POLYTECHNICS, 2014-2016.....	53
TABLE 13: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN INSTITUTES OF TECHNOLOGY, 2014.....	55
TABLE 14: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN INSTITUTES OF TECHNOLOGY, 2015.....	57
TABLE 15: DISTRIBUTION OF OUTTURNS BY PROGRAMMES, LEVEL AND SEX IN INSTITUTES OF TECHNOLOGY, 2016.....	59
TABLE 17: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN INSTITUTES OF TECHNOLOGY 2014- 2016.....	64
TABLE 18: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TECHNICAL TRAINING INSTITUTES, 2014 .....	66
TABLE 19: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TECHNICAL TRAINING INSTITUTES, 2015 .....	68
TABLE 20: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TECHNICAL TRAINING INSTITUTES, 2016 .....	71
TABLE 22: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN TECHNICAL TRAINING INSTITUTES, 2014-2016.....	76
TABLE 23 : DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TEACHER TRAINING COLLEGES, 2014 .....	77
TABLE 24: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TEACHER TRAINING COLLEGES, 2015.....	78
TABLE 25: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TEACHER TRAINING COLLEGES, 2016.....	79
TABLE 26: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN TEACHER TRAINING COLLEGES, 2014-2016 .....	81
TABLE 27: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN MEDICAL TRAINING COLLEGES, 2014.....	83
TABLE 28: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN MEDICAL TRAINING COLLEGES, 2015.....	84
TABLE 29: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN MEDICAL TRAINING COLLEGES, 2016.....	84
TABLE 31: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN MEDICAL TRAINING COLLEGES, 2014-2016.....	90
TABLE 32: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN KENYA SCHOOL OF GOVERNMENT, 2014.....	91
TABLE 33: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN KENYA SCHOOL OF GOVERNMENT, 2015. ....	92
TABLE 34: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN KENYA SCHOOL OF GOVERNMENT, 2016.....	92
TABLE 35: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN KENYA SCHOOL OF GOVERNMENT, 2014-2016.....	96
TABLE 36: OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TRAINING INSTITUTIONS UNDER MDAS, 2014 .....	98
TABLE 37: OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TRAINING INSTITUTIONS UNDER MDAS, 2015 .....	99
TABLE 38: OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TRAINING INSTITUTIONS UNDER MDAS, 2016 .....	100
TABLE 40: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN TRAINING INSTITUTIONS UNDER GOVERNMENT MINISTRIES AND AGENCIES, 2014-2016.....	105
TABLE 41: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN AGRICULTURE AND RELATED INSTITUTIONS,2014 .....	106
TABLE 42: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN AGRICULTURE AND RELATED INSTITUTIONS,2015 .....	106
TABLE 43: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN AGRICULTURE AND RELATED INSTITUTIONS,2016 .....	107
TABLE 46: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN AGRICULTURE AND RELATED INSTITUTIONS, 2014-2016 ....	113
TABLE 47: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN NATIONAL YOUTH SERVICE INSTITUTIONS, 2014..	114
TABLE 48: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN NATIONAL YOUTH SERVICE INSTITUTIONS, 2015..	115
TABLE 49: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN NATIONAL YOUTH SERVICE INSTITUTIONS, 2016..	116
TABLE 52: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN NATIONAL YOUTH SERVICE INSTITUTIONS, 2014-2016.....	120
TABLE 53: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TECHNICAL VOCATIONAL COLLEGES, 2014.....	122
TABLE 54: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TECHNICAL VOCATIONAL COLLEGES, 2015.....	124
TABLE 55: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN TECHNICAL VOCATIONAL COLLEGES, 2016.....	126
TABLE 57: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN TECHNICAL VOCATIONAL COLLEGES, 2014-16.....	131
TABLE 58: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN VOCATIONAL TRAINING CENTRES, 2014.....	132
TABLE 59: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN VOCATIONAL TRAINING CENTRES, 2015.....	133
TABLE 60: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN VOCATIONAL TRAINING CENTRES, 2016.....	134
TABLE 62: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN VOCATIONAL TRAINING CENTRES, 2014-2016.....	138

<i>TABLE 63: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN VOCATIONAL REHABILITATION CENTRES, 2014.....</i>	<i>140</i>
<i>TABLE 64: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN VOCATIONAL REHABILITATION CENTRES, 2015....</i>	<i>140</i>
<i>TABLE 65: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN VOCATIONAL REHABILITATION CENTRES, 2016....</i>	<i>141</i>
<i>TABLE 66: SUMMARY OF OUTTURNS BY YEAR, LEVEL AND SEX IN VOCATIONAL REHABILITATION CENTRES, 2014-2016.....</i>	<i>145</i>
<i>TABLE 67: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN COMMERCIAL COLLEGES, 2014 .....</i>	<i>148</i>
<i>TABLE 68: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX IN COMMERCIAL COLLEGES, 2015 .....</i>	<i>151</i>
<i>TABLE 69: DISTRIBUTION OF OUTTURNS BY PROGRAMME, LEVEL AND SEX OUTTURNS IN COMMERCIAL COLLEGES, 2016.....</i>	<i>154</i>
<i>TABLE 71: SUMMARY OF OUTTURNS BY LEVEL AND SEX IN COMMERCIAL COLLEGES, 2014- 2016.....</i>	<i>162</i>



## LIST OF FIGURES

FIGURE 1: TOTAL OUTTURNS BY CATEGORIES OF TRAINING INSTITUTIONS, 2014-2016 .....	22
FIGURE 2: TOP FIVE MALE DOMINATED PROGRAMMES IN ALL TRAINING INSTITUTIONS THAT RESPONDED, 2014-2016.....	24
FIGURE 3: TOP FIVE FEMALE DOMINATED PROGRAMMES IN ALL TRAINING INSTITUTIONS THAT RESPONDED, 2014-2016.....	25
FIGURE 4: TOP FIVE OUTTURNS BY PROGRAMME AND SEX IN ALL TRAINING INSTITUTIONS THAT RESPONDED.....	26
FIGURE 5: OUTTURNS BY LEVELS FOR ALL TRAINING INSTITUTIONS, 2014-2016 .....	26
FIGURE 6: OUTTURNS BY SEX IN ALL TRAINING INSTITUTIONS THAT RESPONDED, 2014-2016.....	27
FIGURE 7: TOP FIVE OUTTURNS BY PROGRAMME IN UNIVERSITIES, 2014-2016.....	37
FIGURE 8: TOP FIVE MALE DOMINATED PROGRAMMES IN UNIVERSITIES, 2014-2016.....	38
FIGURE 9: TOP FIVE FEMALE DOMINATED PROGRAMMES IN UNIVERSITIES, 2014-2016.....	39
FIGURE 10: OUTTURNS BY LEVEL AND YEAR IN UNIVERSITIES, 2014-2016.....	40
FIGURE 11: OUTTURNS BY LEVEL AND SEX IN UNIVERSITIES, 2014-2016 .....	40
FIGURE 12: TOP FIVE OUTTURNS BY PROGRAMME IN NATIONAL POLYTECHNICS, 2014-2016 .....	49
FIGURE 13: TOP FIVE MALE DOMINATED PROGRAMMES IN NATIONAL POLYTECHNICS, 2014 - 2016.....	50
FIGURE 14: TOP FIVE FEMALE DOMINATED PROGRAMMES IN NATIONAL POLYTECHNICS, 2014-2016.....	51
FIGURE 15: OUTTURNS BY LEVEL IN NATIONAL POLYTECHNICS, 2014-2016.....	52
FIGURE 16: OUTTURNS BY LEVEL AND SEX IN NATIONAL POLYTECHNICS, 2014-2016.....	52
FIGURE 17: TOP FIVE OUTTURNS BY PROGRAMME IN INSTITUTES OF TECHNOLOGY, 2014-2016 .....	60
FIGURE 18: TOP FIVE MALE DOMINATED OUTTURNS BY PROGRAMME IN INSTITUTES OF TECHNOLOGY, 2014-2016.....	62
FIGURE 19: TOP FIVE FEMALE DOMINATED OUTTURNS BY PROGRAMME IN INSTITUTES OF TECHNOLOGY, 2014-2016.....	62
FIGURE 20: OUTTURNS BY LEVEL IN INSTITUTES OF TECHNOLOGY, 2014 -2016.....	63
FIGURE 21: OUTTURNS BY LEVEL AND SEX IN INSTITUTES OF TECHNOLOGY, 2014-2016.....	64
FIGURE 22: TOP FIVE OUTTURNS BY PROGRAMME IN TECHNICAL TRAINING INSTITUTES, 2014-2016.....	72
FIGURE 23: TOP FIVE MALE DOMINATED PROGRAMMES IN TECHNICAL TRAINING INSTITUTES, 2014-2016 .....	73
FIGURE 24: TOP FIVE FEMALE DOMINATED PROGRAMMES IN TECHNICAL TRAINING INSTITUTES, 2014-2016.....	74
FIGURE 26: OUTTURNS BY LEVEL AND SEX IN TECHNICAL TRAINING INSTITUTES, 2014-2016.....	75
FIGURE 27: OUTTURNS BY PROGRAMME AND SEX IN TEACHER TRAINING COLLEGES, 2014-2016.....	80
FIGURE 28: OUTTURNS BY LEVEL IN TEACHER TRAINING COLLEGES, 2014-2016.....	81
FIGURE 29: TOP FIVE OUTTURNS BY PROGRAMME IN MEDICAL TRAINING COLLEGES, 2014-2016.....	85
FIGURE 30: OUTTURNS BY PROGRAMME AND SEX IN MEDICAL TRAINING COLLEGES, 2014-2016.....	87
FIGURE 31: TOP FIVE MALE DOMINATED PROGRAMMES IN MEDICAL TRAINING COLLEGES, 2014-2016.....	88
FIGURE 32: TOP FIVE FEMALE DOMINATED PROGRAMMES IN MEDICAL TRAINING COLLEGES, 2014-2016.....	88
FIGURE 33: OUTTURNS BY LEVEL IN MEDICAL TRAINING COLLEGES, 2014-2016.....	89
FIGURE 34: OUTTURNS BY LEVEL AND SEX IN MEDICAL TRAINING COLLEGES, 2014-2016.....	90
FIGURE 35: TOP THREE MALE DOMINATED PROGRAMMES IN KENYA SCHOOL OF GOVERNMENT, 2014-2016 .....	94
FIGURE 36: TOP THREE FEMALE DOMINATED PROGRAMMES IN KENYA SCHOOL OF GOVERNMENT, 2014-2016 .....	94
FIGURE 37: OUTTURNS BY LEVEL IN KENYA SCHOOL OF GOVERNMENT, 2014-2016.....	95
FIGURE 38: OUTTURNS BY LEVEL AND SEX IN KENYA SCHOOL OF GOVERNMENT, 2014-2016.....	96
FIGURE 39: TOP THREE OUTTURNS BY PROGRAMME AND YEAR FOR INSTITUTIONS UNDER GOVERNMENT MINISTRIES .....	101
FIGURE 40: OUTTURNS BY PROGRAMME AND SEX IN INSTITUTIONS UNDER GOVERNMENT MINISTRIES 2014-2016.....	102
FIGURE 41: TOP FIVE MALE DOMINATED PROGRAMMES FOR INSTITUTIONS UNDER GOVERNMENT MINISTRIES, 2014-2016 .....	102
FIGURE 42: TOP THREE FEMALE DOMINATED PROGRAMMES FOR INSTITUTIONS UNDER GOVERNMENT MINISTRIES AND AGENCIES.....	103
FIGURE 43: OUTTURNS BY LEVEL IN INSTITUTIONS UNDER GOVERNMENT MINISTRIES 2014-2016.....	104
FIGURE 44: OUTTURNS BY LEVEL AND SEX IN TRAINING INSTITUTIONS UNDER GOVERNMENT MINISTRIES AND AGENCIES.....	104
FIGURE 45: OUTTURNS BY PROGRAMME AND YEAR IN AGRICULTURE AND RELATED INSTITUTIONS .....	108
FIGURE 46: TOP THREE OUTTURNS BY PROGRAMME IN AGRICULTURE AND RELATED INSTITUTIONS, 2014.....	109
FIGURE 47: TOP THREE OUTTURNS BY PROGRAMME IN AGRICULTURE AND RELATED INSTITUTIONS, 2015.....	109
FIGURE 48: TOP THREE OUTTURNS BY PROGRAMME IN AGRICULTURE AND RELATED INSTITUTIONS, 2016.....	110
FIGURE 49: TOP THREE MALE DOMINATED OUTTURNS BY PROGRAMME IN AGRICULTURE AND RELATED TRAINING INSTITUTIONS, 2014-2016.....	111
FIGURE 50: TOP THREE FEMALE DOMINATED OUTTURNS BY PROGRAMME IN AGRICULTURE AND RELATED INSTITUTIONS, 2014-2016.....	111
FIGURE 51: OUTTURNS BY LEVEL IN AGRICULTURE AND RELATED TRAINING INSTITUTIONS, 2014-2016 .....	112
FIGURE 52: OUTTURNS BY LEVEL AND SEX IN AGRICULTURE AND RELATED INSTITUTIONS, 2014-2016 .....	113
FIGURE 53: OUTTURN BY PROGRAMME IN NATIONAL YOUTH SERVICE TRAINING INSTITUTIONS, 2014-2016 .....	117
FIGURE 54: MALE DOMINATED OUTTURNS BY PROGRAMMES IN NATIONAL YOUTH SERVICE TRAINING INSTITUTIONS,.....	118

<i>FIGURE 55: TOP THREE FEMALE DOMINATED OUTTURNS BY PROGRAMME IN NATIONAL YOUTH SERVICE TRAINING INSTITUTIONS, 2014-2016.....</i>	<i>118</i>
<i>FIGURE 56: OUTTURNS BY LEVEL IN NATIONAL YOUTH SERVICE TRAINING INSTITUTIONS, 2014-2016.....</i>	<i>119</i>
<i>FIGURE 57: OUTTURNS BY LEVEL AND SEX IN NATIONAL YOUTH SERVICE INSTITUTIONS, 2014-2016.....</i>	<i>120</i>
<i>FIGURE 58: TOP FIVE OUTTURNS BY PROGRAMMES IN TECHNICAL VOCATIONAL COLLEGES, 2014-2016.....</i>	<i>127</i>
<i>FIGURE 59: TOP FIVE MALE DOMINATED PROGRAMMES IN TECHNICAL VOCATIONAL COLLEGES.....</i>	<i>128</i>
<i>FIGURE 60: TOP FIVE FEMALE DOMINATED PROGRAMMES IN TECHNICAL VOCATIONAL COLLEGES, 2014-2016 .....</i>	<i>129</i>
<i>FIGURE 61: OUTTURNS BY LEVEL IN TECHNICAL VOCATIONAL COLLEGES, 2014-2016.....</i>	<i>130</i>
<i>FIGURE 62: OUTTURNS BY SKILL LEVEL AND SEX IN TECHNICAL VOCATIONAL COLLEGES.....</i>	<i>131</i>
<i>FIGURE 63: TOP FIVE OUTTURNS BY PROGRAMMES IN VOCATIONAL TRAINING CENTRES, 2014-2016.....</i>	<i>135</i>
<i>FIGURE 64: TOP FIVE MALE DOMINATED PROGRAMMES IN VOCATIONAL TRAINING CENTRES, 2014-2016.....</i>	<i>136</i>
<i>FIGURE 65: TOP FIVE FEMALE DOMINATED PROGRAMMES IN VOCATIONAL TRAINING CENTRES, 2014-2016.....</i>	<i>136</i>
<i>FIGURE 66: OUTTURNS BY LEVEL AND SEX IN VOCATIONAL TRAINING CENTRES, 2014-2016.....</i>	<i>137</i>
<i>FIGURE 67: OUTTURNS BY LEVEL AND SEX IN VOCATIONAL TRAINING CENTRES, 2014-2016.....</i>	<i>138</i>
<i>FIGURE 68: AVERAGE OUTTURNS BY LEVEL IN VOCATIONAL TRAINING CENTRES, 2014-2016 .....</i>	<i>139</i>
<i>FIGURE 69: OUTTURNS BY PROGRAMME IN VOCATIONAL REHABILITATION CENTRES, 2014-2016.....</i>	<i>142</i>
<i>FIGURE 70: MALE DOMINATED PROGRAMMES IN VOCATIONAL REHABILITATION CENTRES, 2014-2016.....</i>	<i>142</i>
<i>FIGURE 71: FEMALE DOMINATED OUTTURNS BY PROGRAMME IN VOCATIONAL REHABILITATION CENTRES.....</i>	<i>143</i>
<i>FIGURE 72: OUTTURNS BY LEVEL IN VOCATIONAL REHABILITATION CENTRES, 2014-2016.....</i>	<i>144</i>
<i>FIGURE 73: OUTTURNS BY LEVEL AND SEX IN VOCATIONAL REHABILITATION CENTRES, 2014-2016 .....</i>	<i>145</i>
<i>FIGURE 74: THREE (3) YEARS AVERAGE OUTTURNS BY LEVEL IN VOCATIONAL REHABILITATION CENTRES, 2014-2016.....</i>	<i>146</i>
<i>FIGURE 75: TOP FIVE OUTTURNS BY PROGRAMME IN COMMERCIAL COLLEGES, 2014-2016.....</i>	<i>156</i>
<i>FIGURE 76: TOP FIVE MALE DOMINATED PROGRAMMES IN COMMERCIAL COLLEGES, 2014-2016.....</i>	<i>157</i>
<i>FIGURE 77: TOP FIVE FEMALE DOMINATED PROGRAMMES IN COMMERCIAL COLLEGES, 2014-2016.....</i>	<i>158</i>
<i>FIGURE 78: OUTTURNS BY LEVEL IN COMMERCIAL COLLEGES, 2014-2016.....</i>	<i>159</i>
<i>FIGURE 79: OUTTURNS BY LEVEL AND SEX IN COMMERCIAL COLLEGES, 2014-2016.....</i>	<i>160</i>
<i>FIGURE 80: THREE (3) YEARS AVERAGE OUTTURNS IN COMMERCIAL COLLEGES, 2014-2016 .....</i>	<i>161</i>

## **FOREWORD**

The Ministry of Labour and Social Protection has the mandate of providing policy guidance on human resource planning and development for the national economy and achievement of national development goals. The overarching objective is to guide development of a skilled human resource base that will effectively contribute to national development, through bridging the gap between the knowledge and skills provided by our local training institutions and demands of the labour market. The Kenya Vision 2030, which aims at transforming Kenya into a globally competitive and prosperous country by 2030, identifies education and training as one of the levers that will drive Kenya into becoming an industrialized, middle-income economy. The Vision places great emphasis on the link between training and industry, the need to create entrepreneurial skills and competencies, and strengthen partnerships with the private sector in investment and provision of education and training in the country.

Kenya's global competitiveness depends on the country's ability to create a human resource base with the requisite skills that are in tandem with the dynamics of the rapidly changing labour market, both locally and internationally. Human resource development and institutional capacity building have been identified as some of the prerequisite strategic objectives for achieving the Vision 2030, and generally for the realization of national development aspirations as well as attainment of global competitiveness.

For the next five years, the government has embarked on the Big Four agenda-which aims at achieving food and nutrition security, universal health care, decent housing and a more productive manufacturing sector. For each of these agenda to be realized, the importance of adequate and high quality human resource cannot be gainsaid.

However, the country's education and training system is currently driven by social demand as opposed to labour market demand, resulting in oversupply in certain skills amidst critical shortages in others. In addition, there is also an apparent disharmony between national development aspirations as contained in major blue prints such as the Vision 2030 and those of institutions and agencies charged with the responsibility of making them happen. A case in point is the challenges the country has had to face in providing skilled manpower for the Standard Gauge Railway (SGR). The same may be said about other emerging occupations such as oil and gas exploration as well as coal and titanium mining, whose skill requirements ought to have been planned for much earlier.

The importance of Labour Market Information (LMI) to the efficient functioning of both the local and international labour markets has increased with the expanding globalization of economic activity. However, lack of this information has been identified as one of the major challenges in effective forecasting, development and utilization of manpower in the country. Easily accessible and high-quality LMI is a key ingredient to the success of a modern economy.

Ideally, labour market information can improve both the short and long-term matches of labour supply and demand, ensuring that individuals acquire the skill sets required by the Industry for today's dynamic labour market. The newly developed Kenya Labour Market Information System (KLMIS) is designed to serve as a labour market Observatory for the entire economy through provision of timely, relevant and reliable labour market information. The information obtained from the STLI will provide useful input into the KLMIS and hopefully spur intervention measures from the recommendations contained therein.

I am confident that the findings and recommendations of this Survey will prove quite invaluable to policy makers, human resource practitioners and all players in the education and training sector. I am also optimistic that members of the private sector will find them useful as well.

**HON. (AMB.) UKUR YATANI  
CABINET SECRETARY  
MINISTRY OF LABOUR AND SOCIAL PROTECTION**

## **PREFACE**

The Survey on Training in Local Institutions (STLI) is one of the regular programmes carried out by the State Department for Labour to obtain current, training-related labour market information for use by policy makers in government, training providers, investors and other stakeholders, including prospective trainees. The STLI also serves as one of the sources of data for updating the Kenya Labour Market Information System (KLMIS) content.

The main objective of the STLI 2017 was to determine and monitor the type, size and levels of skills flow into the labour market. Specifically, the study aimed at establishing the number and types of local training institutions at all levels as well as outturns by programme, level and sex. Both public and private training institutions were covered. The survey also assessed the status of staffing in our local institutions and documented the various challenges affecting the delivery of training. The findings and recommendations on staffing levels and shortages have been presented in a separate report.

Due to the extensive nature of the exercise, the survey was scheduled to be done in three phases between September 2016 and January 2017. However, unprecedented industrial strikes in our public universities involving both lecturers and staff posed a challenge to the survey, stretching follow ups to the month of April.

Elaborate analysis has been undertaken on the data collected during the survey taking into account key parameters. One of such parameters is the ILO requirement for sex disaggregated data aimed at illustrating how males and females fair in relation to any type of data collected. The purpose of this requirement is to isolate any elements of gender disparities to enable affirmative action where necessary. Towards this end, the total overall outturn percentages for both males and females obtained from all training institutions have been indicated. These have been further analyzed in terms of the distribution of these at University level as well as all the other levels of training institutions. Programmes that recorded higher outturns for each sex have also been indicated.

The survey report contains a number of important findings and recommendations that provide a platform for not only intervention measures by all concerned but also further engagement on the issues raised. The report could also serve as a baseline for any interested labour market researchers who may wish to delve deeper into the issues.

**HON. ABDUL BAHARI  
CHIEF ADMINISTRATIVE SECRETARY  
MINISTRY OF LABOUR AND SOCIAL PROTECTION**

## **ACKNOWLEDGEMENTS**

Sincere acknowledgments go out first and foremost to our Cabinet Secretary, Ministry of Labour and Social Protection, Hon. (AMB.) Ukur Yatani; for strategic policy direction in this important national undertaking and secondly, our Chief Administrative Secretary, Hon. Abdul Bahari for moral and technical support.

The Commission for University Education (CUE) is hereby appreciated for provision of data on registered Universities in the country and the courses they are authorized to offer, Chancellors of both public and private Universities and their Heads of Faculties, for providing information specific to their respective Universities, Principals and Heads of Departments in National Polytechnics, Institutes of Technology (ITs), Technical Training Institutes (TTIs), Teacher Training Colleges (TTCs), Medical Training Colleges (MTCs), Kenya School of Government (KSG), Training Institutions under Government Ministries and Agencies, National Youth Service (NYS) training institutions, Agriculture-related Training Institutions, Technical Vocational Colleges (TVCs), Vocational Training Centres (VTCs), Vocational Rehabilitation Centres (VRCs), and Commercial Colleges covered. All concerned are deeply appreciated for interrupting their busy schedules to grant audience to our officers.

The Technical Vocational Education and Training Authority (TVETA) was also very helpful in mobilizing Directors of TVET within counties, and so was the Council of Governors in facilitating our smooth access to the county-based training institutions. Everyone else who facilitated the success of this exercise in one way or the other is hereby highly appreciated.

Acknowledgement also goes to the staff of the State Department for Labour, who either directly participated in the survey or contributed in one way or the other to its success.

Finally, I wish to appreciate the Director, National Human Resource Planning and Development Department (NHRPD), Mrs. Catherine Waema and her staff for a job well done.

**DR. IBRAHIM M. MOHAMED, CBS**  
**PRINCIPAL SECRETARY**  
**STATE DEPARTMENT FOR LABOUR**

## **EXECUTIVE SUMMARY**

Training plays a vital role in the economic growth and development of a country, both in providing skills required in the economy and enhancing employability by generating skills that match the demands of the labour market. Kenya lacks a comprehensive database on skill generation as well as the stock of skills available to facilitate better planning for the country's human resource.

The survey undertaken between November 2016 and April 2017 was designed to collect information to: build a master file of training institutions, develop a data base of the skills being generated in the country, take stock of skills available among the academic staff in training institutions and identify areas of shortages. This information would inform the development of evidence-based policies that would be useful in configuring the national training systems to respond to the socio-economic needs of the country.

The survey adopted the descriptive research methodology using questionnaires to collect both qualitative and quantitative data on the outturns from all categories of training institutions and the skills available among the academic staff. Since this was a census, the survey was carried out in all the Counties in Kenya targeting all categories of training institutions.

The sample frame was compiled of all known training institutions in the country as per the Master File of training institutions of 2012 and list of accredited institutions drawn from the CUE and TVETA websites. Within this frame, 1431 training institutions were surveyed comprising 736 public institutions and 695 private institutions representing 54.1 and 48.6 percent respectively. The results were indicative of a wide spectrum of training institutions found in Kenya ranging from Universities, Technical and Vocational colleges, as well as Commercial Colleges, among others.

Although the survey was designed to be a census, it encountered difficulty particularly in covering some public Universities due to two industrial strikes by lecturers and one by University staff that took place during implementation of the survey. This resulted to nonresponse in some cases in spite of several call backs.

The report is organized into four (4) chapters as follows: Chapter One (1)- Background and Methodology, Chapter Two (2) - Data Analysis, Chapter Three (3) Summary of Findings and Chapter Four (4)-Conclusion and Recommendations.

The survey findings revealed that the programmes with highest outturns over the three-year period out of the 24 programmes captured were Business and Administration at 29.9 percent, followed by Engineering and Engineering Trades at 13.6 and Computing at 13.3 percent while the lowest were Personal Development and Literacy at 0.01 percent. Certificate level skills were produced in the highest numbers accounting for at least 34.5 percent, followed by Diploma at 22.9 percent and Bachelors at 16.9 percent. The lowest was PhD and PGD at 0.01 percent each. A separate report has been prepared on staffing levels, skill profiles of academic staff as well as shortages.

## **ACRONYMS/ABBREVIATIONS**

<b>CoG</b>	Council of Governors
<b>CUE</b>	Commission for University Education
<b>DICECE</b>	District Centre for Early Childhood Education
<b>ECD</b>	Early Childhood Development
<b>ECDE</b>	Early Childhood Development and Education
<b>ICT</b>	Information and Communication Technology
<b>ICTA</b>	ICT Authority
<b>ISCED</b>	International Standard Classification of Education
<b>KISE</b>	Kenya Institute of Special Education
<b>KLMIS</b>	Kenya Labour Market Information System
<b>KSG</b>	Kenya School of Government
<b>NACECE</b>	National Centre for Early Childhood Education
<b>NHRPD</b>	National Human Resource Planning and Development Department
<b>NYS</b>	National Youth Service
<b>PTE</b>	Primary Teacher Education
<b>STLI</b>	Survey of Training in Local Institutions
<b>TVETA</b>	Technical Vocational Education and Training Authority
<b>TTC</b>	Teacher Training College
<b>TTI</b>	Technical Training Institute
<b>TVC</b>	Technical Vocational College
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>VRC</b>	Vocational Rehabilitation Centre



## DEFINITION OF TERMS

<b>Artisan level of training:</b>	An entry level for practical skills training, traditionally meant for primary school leavers.
<b>Bachelor's Degree:</b>	An academic degree awarded by Universities upon completion of an under-graduate course of study.
<b>County Governments:</b>	Are units of devolved governance resulting from the 2010 Constitution.
<b>Craft level of training:</b>	An entry level for practical training, traditionally meant for secondary school leavers or those with Artisan Grade I certificate.
<b>Government Agencies:</b>	These include State Corporations and Semi- Autonomous Government Agencies (SAGAs).
<b>Graduate:</b>	A person who has successfully completed a course of study or training.
<b>Vocational Training:</b>	Focuses on practical application of skills learnt and is generally unconcerned with theory or traditional academic skills.
<b>Labour Market:</b>	It is the interaction between the forces of labour supply and demand within an economy.
<b>Master file of Training Institutions:</b>	A register of all training institutions in the country their addresses and other pertinent details.
<b>Master's Degree:</b>	A post graduate degree following a Bachelor's degree and preceding a Doctorate.
<b>Outturns:</b>	It is the number of trainees exiting from a training institution after completing specific courses of instruction. This includes both certified and those awaiting certification.
<b>PhD:</b>	Highest academic degree after Master's, usually referred to as Doctor of Philosophy.
<b>Proficiency course:</b>	Supplementary training aimed at skills upgrading for improved performance and for career progression in specific cadres.
<b>Skill shortage:</b>	Unavailability of required skills within a training institution or a workplace.
<b>Vocational Rehabilitation Centres:</b>	Are institutions run by the state department responsible for Social Development to equip persons with disabilities with skills for employment and self-reliance.
<b>Vocational Trades:</b>	Relates to applied courses concerned with skills needed for an occupation.

# CHAPTER ONE

## 1.0 Background

The Global Human Capital Index released by the World Economic Forum in 2017 ranked Kenya at position 78 out of 130, up from position 120 in 2016. The report used four indices to determine the scores of different countries, which were Capacity, Deployment, Development and Know how. The jump to the top hundred was attributed to the country's strong educational foundation and the sizeable medium skilled employment sector. The country however still lags behind compared to other countries.

An Executive Briefing to the same Economic Forum on "the Future of Skills in Africa" indicated that 30 per cent of employers in Kenya cited the issue of an inadequately skilled workforce as a major constraint to the productivity of their businesses. Human capital development has been described as key to the workforce of the future.

The Kenya Vision 2030 and the second Medium Term Plan 2013-2017 emphasized on human resource development as key to national transformation. The Vision's three pillars on economic, social and political development will continue to rely greatly on the availability of a highly trained, adaptive and productive human resource base. For effective human resource planning and development to be realized, it is important that accurate and up to date data on the labour market is maintained. The development of a reliable and adequate database on skills in the labour market and outturns from training institutions will be a key factor to the achievement of the Vision.

In Kenya the training sector has expanded rapidly over the years to meet the rising demand for skills. Today there are over seventy (70) public and private Universities with several tertiary training institutions providing courses in various fields.

The Ministry plans to establish a national skills inventory through collection of labour market data in order to track the trends in skills supply from training institutions. The National Human Resource Planning and Development (NHRPD) department within the State Department for Labour undertakes the survey in local training institutions (STLI) to determine the profiles of skills entering the labour market by type and level and to update the Master File of training institutions. This is intended to strengthen the management and co-ordination of human resource planning, development and utilization in the country.

## **1.1 Objectives of the Survey**

The main objective of the Survey of Training in Local Institutions (STLI) was to determine and monitor the type, size and level of skills flow into the labour market. The specific objectives of the study were to: establish the number and types of local training institutions at all levels; establish the number of outturns by programme, level and sex and establish skill levels and gaps among academic staff.

## **1.2 Justification for the Survey**

In the past, efforts have been made to study the trends of the skills supply into the labour market from the training institutions in the country. Currently the data available on skills from training institutions is not up-to-date since the last survey was carried out in 2013. Therefore, there was need to undertake a survey to capture the skills being produced and ascertain their status owing to the fact that there has been transition where some of the institutions have changed their status. For instance, some national polytechnics and other middle level colleges have transformed into public Universities; Commercial Colleges which were formerly offering diploma programmes transformed into private Universities. The data collected will therefore inform the development of human resource planning and development policies.

## **1.3 Scope and Coverage**

The survey covered both public and private training institutions. The following categories of local training institutions were covered: Universities, National Polytechnics, Institutes of Technology, Technical Training Institutes, Teacher Training Colleges, Medical Training Colleges, Kenya School of Government (KSG) institutions, Training Institutions under Government Ministries and Agencies, Agriculture and related Training Institutions, National Youth Service training institutions, Technical Vocational Training Colleges, Vocational Training Centres, Vocational Rehabilitation Centres, and Commercial Training Colleges.

## **1.4 Methodology**

The survey was carried out as a census in all categories of training institutions mentioned under scope and coverage. A self-administered questionnaire was used to collect data on variables relating to: outturns, programmes offered, duration and examining body. All these were captured by gender and year.

The survey was conducted between September 2016 and April 2017. The survey team comprised of officers from the Ministry headquarters and the field offices.

## 1.5 Limitations and Constraints

There were a number of challenges encountered during the execution of the survey as follows: -

- i. The Master File on Training Institutions used for drawing the sample frame included those that were no longer in existence while excluding newly established ones. During data collection, it necessitated listing of the newly established training institutions and in some instances, institutions listed in the Master File were found to have either closed down or relocated. Consequently, a lot of time was taken in locating both new and old institutions.
- ii. Some training institutions ended up not responding despite several call-backs. This may have been occasioned by various factors that included strikes by some Universities at the time of the survey, exams and on-going graduation preparations. The timing of the survey also coincided with December holiday season when most training institutions were closing for holidays.
- iii. Although the survey is meant to be an annual exercise in order to give the most current position in respect to skills development status in the country, this had not been possible due to inadequacy of financial resources. The reference period for the survey was 2016. However, data had not been collected for the years 2014 and 2015. This was time consuming and therefore, stretched the period of survey due to the large amount of data required.
- iv. Records from various institutions were not uniformly maintained and not necessarily in the format required for the survey. In addition, some of the institutions data was manually maintained. Therefore, conversion of data into the required format occasioned delay in responding.
- v. During the period of the survey there were security concerns in some Counties. Therefore, a few Counties were not fully covered while Mandera County was not covered at all.
- vi. Some areas in certain Counties were inaccessible due to bad weather and terrain therefore limiting access to some training institutions.

## CHAPTER TWO - DATA ANALYSIS

### 2.0 Introduction

This chapter presents an analysis of data collected from all categories of training institutions in the country that responded during the survey. The information is presented in form of tables and figures.

#### 2.1.1 Data Coding

The International Standard Classification of Education and Training (ISCED- 1997 and 2011) fields of education under UNESCO coding system was used to aggregate the programmes offered in all levels of training institutions as in Appendix 1.

#### 2.1.2 Category and Type of Ownership of Training Institutions

Training institutions in Kenya are classified as either public or private. Table 1 illustrates the categories and types of ownership of training institutions covered. In this survey, training institutions have also been categorized on the basis of registration status of the institution and not necessarily on the levels of certificates that they award.

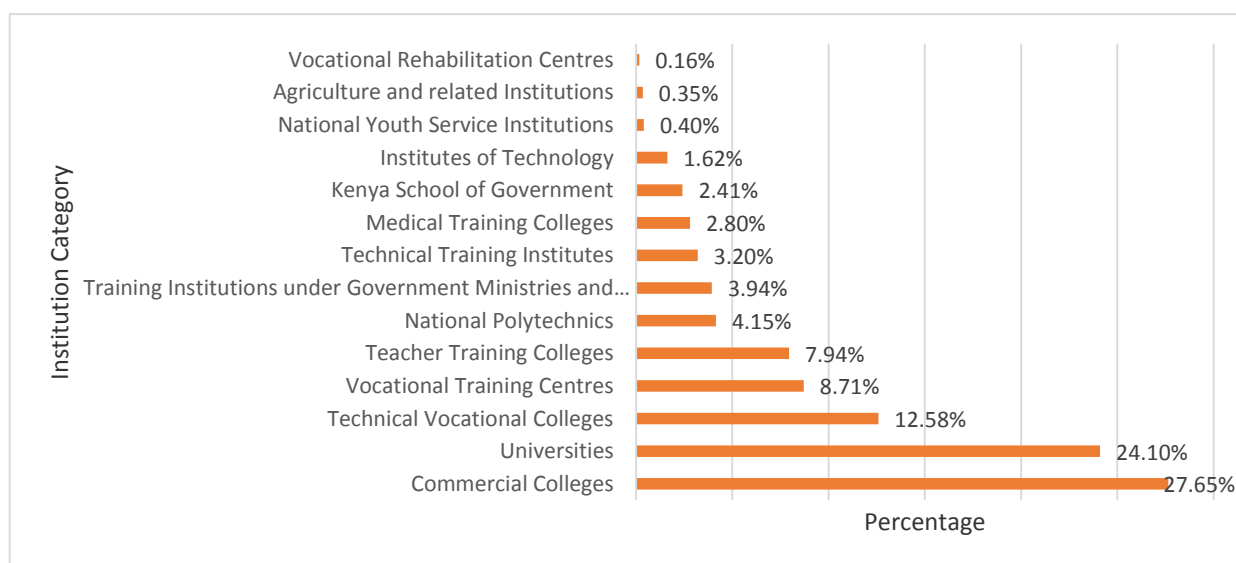
**Table 1:** Training Institutions that responded by Category and Type of Ownership

Category of Institutions	No. Responded	
	Public	Private
Universities	22	18
National Polytechnics	8	0
Institutes of Technology	10	2
Technical Training Institutes	23	9
Teacher Training Colleges	29	80
Medical Training Colleges	41	32
Kenya School of Government (KSG)	2	0
Other Training Institutions under Government Ministries and Agencies	9	0
Agriculture and related Training Institutions	5	3
National Youth Service	5	0
Technical Vocational Colleges	87	15
Vocational Training Centres	486	40
Vocational Rehabilitation Centres	9	1
Commercial Colleges	0	495
<b>Total</b>	<b>736</b>	<b>695</b>

*\*The numbers reflect only those institutions that responded and not the total number of institutions in the country.*

### 2.1.3 Outturns by Categories of Training Institutions

This section presents a summary of outturns by categories of institutions. The institutions covered include: Universities, National Polytechnics, Institutes of Technology, Technical Training Institutes, Teacher Training Colleges and Commercial Colleges, among others. Figure 1 below reveals that, Commercial Colleges had the highest outturns accounting for 27.65 percent, followed by Universities with 24.10, Technical Vocational Colleges with 12.58, Vocational Training Centres with 8.71 and Teacher Training Colleges with 7.94 percent respectively. Outturns from the rest of the categories together accounted for 19.03 percent.



**Figure 1:** Total outturns by Categories of Training Institutions, 2014-2016

### 2.1.4 Summary of Total Outturns by Programme for all Categories of Training Institutions, 2014 - 2016

Table 2 presents a summary of total outturns by programme for all categories of training institutions from 2014 to 2016 that responded. Business and Administration, Engineering and Engineering Trades, and Computing programmes had the highest outturns during the reference period. The survey showed that outturns in Business and Administration increased by 1.1 percent and 1.3 percent from 2014 to 2015 and 2015 to 2016 respectively. Outturns in Engineering and Engineering Trades dropped by the same margin at 0.6 percent from 2014 to 2015 and 2015 to

2016 respectively, while outturns in Computing programme increased by 2.1 and 1.4 percent from 2014 to 2015 and 2015 to 2016 respectively.

The programme with the lowest outturns was Literacy and Numeracy at 0.002 percent in 2014 and recorded no outturns in 2015 and 2016 followed by Veterinary programme that remained constant at 0.1 percent during the period under review.

In Business and Administration programme, males registered 14.1 percent of the total outturns while females had a slightly higher number at 14.9 percent. Males had 10.4 and 6.8 percent of the total outturns in Engineering and Engineering Trades and Computing respectively. Total outturns for females in Education stood at 7.3 percent and 6.5 percent in Computing. The lowest outturns for males was in Literacy and Numeracy and Personal Development while for females was in Generic Programmes and Qualifications, Veterinary and Personal Development.

During the period under review, males had the higher outturns at 51.3 percent while females had 48.7 percent.

**Table 2:** Summary of Total Outturns by Programme and Sex for all Categories of Training Institutions, 2014-2016

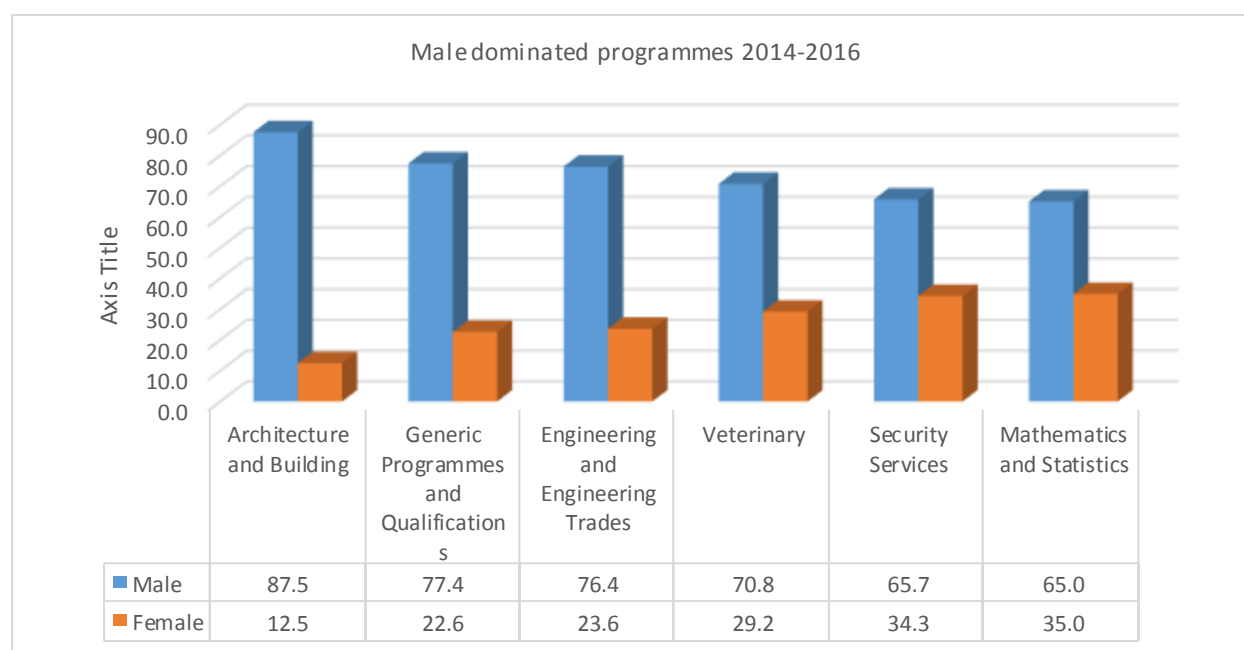
Programme	Percentage								
	2014			2015			2016		
	M	F	Total	M	F	Total	M	F	Total
Agriculture, Forestry and Fishery	0.5	0.3	0.9	0.6	0.4	1.0	0.7	0.5	1.2
Architecture and Building	1.9	0.3	2.2	1.8	0.2	2.0	1.8	0.2	2.0
Arts	0.2	0.2	0.4	0.2	0.2	0.4	0.3	0.3	0.5
Business and Administration	13.8	13.8	27.7	13.8	14.9	28.8	14.4	15.7	30.1
Computing	5.9	5.5	11.4	6.8	6.6	13.5	7.5	7.4	14.9
Education	6.2	8.0	14.3	5.5	7.0	12.5	5.1	7.0	12.1
Engineering and Engineering Trades	10.6	3.5	14.2	10.5	3.2	13.6	10.0	2.9	13.0
Environmental Protection	0.3	0.3	0.6	0.3	0.2	0.6	0.3	0.2	0.5
Generic Programmes and Qualifications	0.1	0.0	0.1	0.1	0.0	0.1	0.2	0.0	0.2
Health	2.4	3.1	5.5	2.2	3.0	5.2	1.9	2.6	4.4
Humanities	1.7	1.4	3.2	1.7	1.7	3.4	2.1	1.9	4.0
Journalism and Information	1.3	1.4	2.7	1.0	1.2	2.2	0.9	1.1	2.0
Law	0.2	0.3	0.5	0.3	0.3	0.6	0.3	0.4	0.6
Life Sciences	0.6	0.4	1.0	0.6	0.4	1.0	0.6	0.4	1.0
Literacy and Numeracy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing and Processing	0.4	1.0	1.4	0.4	1.0	1.5	0.4	1.2	1.6
Mathematics and Statistics	0.3	0.2	0.4	0.5	0.2	0.7	0.4	0.2	0.6
Personal Development	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Personal Services	2.8	5.1	7.9	1.8	4.9	6.7	1.6	4.8	6.4
Physical Sciences	0.2	0.1	0.3	0.3	0.2	0.4	0.3	0.2	0.4

Security Services	0.2	0.1	0.3	0.2	0.1	0.3	0.4	0.2	0.5
Social and Behavioral Sciences	0.5	0.4	0.9	0.5	0.5	1.0	0.6	0.5	1.1
Social Services	1.3	1.9	3.2	1.4	2.2	3.6	0.8	1.3	2.1
Transport Services	0.5	0.3	0.8	0.5	0.4	0.9	0.3	0.2	0.4
Veterinary	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1
<b>Total</b>	<b>52.1</b>	<b>47.9</b>	<b>100.0</b>	<b>51.0</b>	<b>49.0</b>	<b>100.0</b>	<b>50.9</b>	<b>49.1</b>	<b>100.0</b>

### 2.1.5 Top five outturns by Programme and Sex in all Training Institutions that responded

It is important to note that in the figure below and everywhere else in this report, programmes said to be dominated by males were those where males constituted higher outturns for the programmes in question as compared to females and vice versa.

From the figure below, males dominated in Architecture and Building programme, accounting for 87.5 percent. The other programmes dominated by males were Engineering and Engineering Trades (76.4), Veterinary Services (70.8), Security Services (65.7); and Mathematics and Statistics (65).

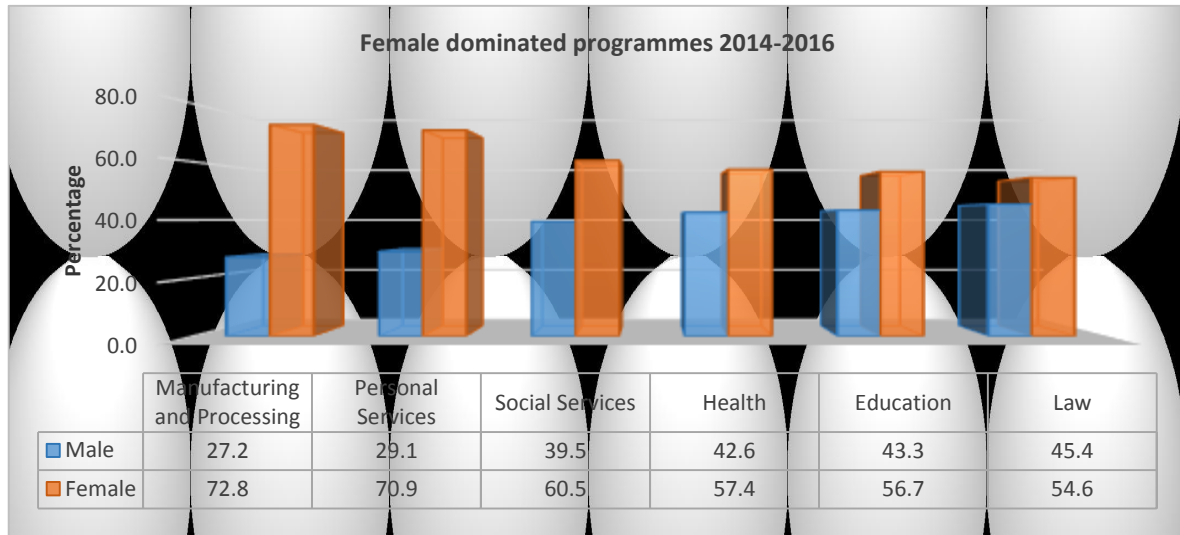


**Figure 2:** Top five male dominated programmes in all Training Institutions that responded, 2014-2016

Figure 3 shows the programmes that were dominated by females over the reference period. Manufacturing and Processing was the programme mostly dominated by females accounting for

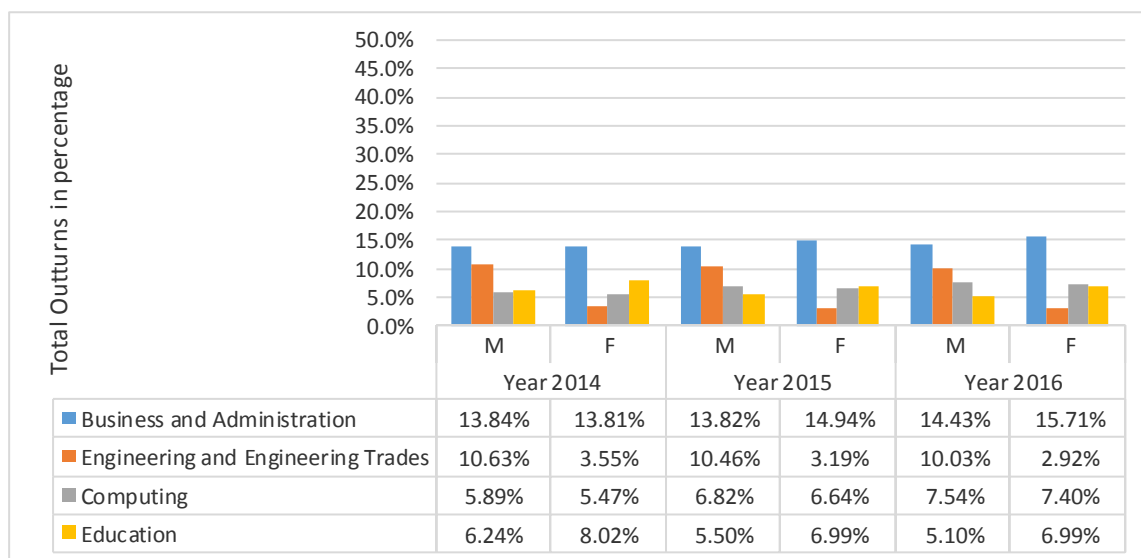


72.8 percent. The other programmes where females dominated included Personal Services (70.9), Social Services (60.5), Health (57.4), Education (56.7) and Law (54.6) in that order.



**Figure 3:** Top five female dominated programmes in all Training Institutions that responded, 2014-2016

Figure 4 shows that during the period under review, Business & Administration was the programme with the highest outturns in all the three years for males, followed by Engineering and Engineering Trades, then Education and Computing while for females, Business and Administration was followed by Education and Computing. Engineering and Engineering Trades programme was not popular with females.



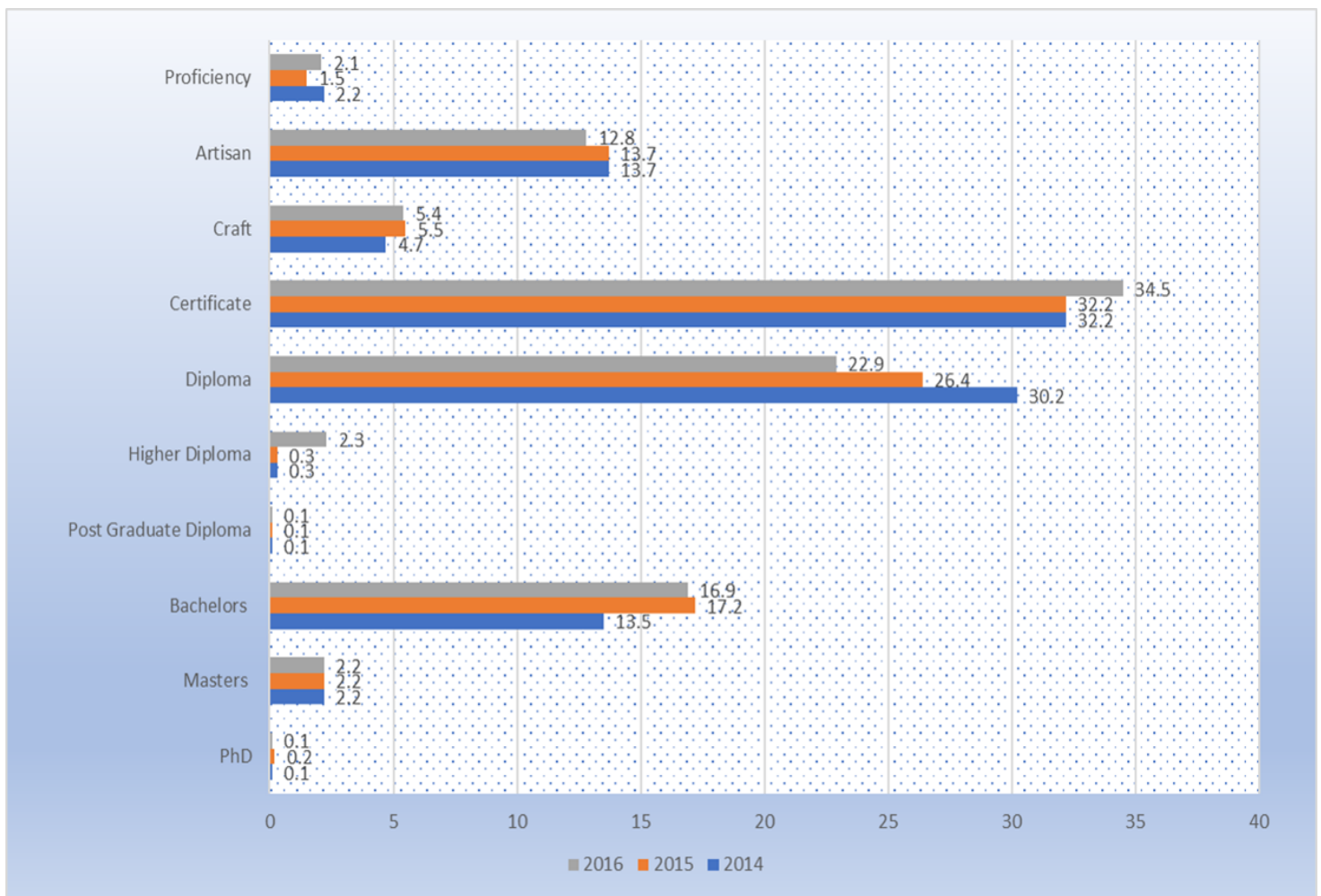
**Figure 4:** Top five outturns by programme and sex in all Training Institutions that responded

**2.1.6 Programmes with lowest Outturns in all Training Institutions that responded**

During the period under review, Personal Development programme had the lowest outturns followed by Veterinary and Security Services , Physical Sciences and Arts, all of which registered 0.005 percent each.

**2.1.7 Summary of Total Outturns by level of award for all Training Institutions that responded, 2014 - 2016**

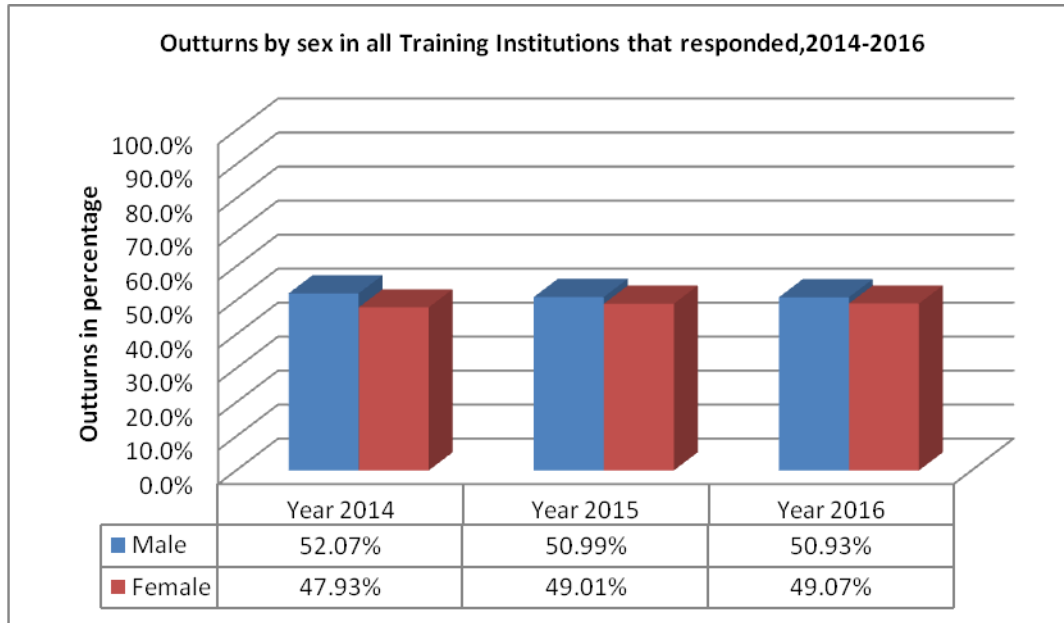
Figure 5 presents outturns by level of award for the three-year period. Certificate level had the highest outturns followed by Diploma and Bachelor’s, Artisan and Craft were fourth and fifth respectively while Master’s came at sixth position. Post graduate Diploma and PhD had the lowest outturns.



**Figure 5:** Outturns by Levels for All Training Institutions, 2014-2016

### 2.1.8 Summary of Outturns from all Training Institutions by Sex, 2014-2016

Figure 6 presents a summary of total outturns by sex for the three years under review. Male outturns recorded a marginal decline from 2014 to 2015 and 2016 while female outturns registered a similar marginal increase in the reference period.



**Figure 6:** Outturns by sex in all Training Institutions that responded, 2014-2016

## 2.2 UNIVERSITIES

During the period under review, there were 193,636 outturns captured for both public and private universities. Outturns captured for 2014 were 54,863 while for 2015 and 2016 they were 70,065 and 68,705 respectively.

### 2.2.1 Outturns by Programme, Level and Sex in Universities, 2014

The total outturns captured for the year was 54,863 out of which 54.3 per cent were male and 45.7 per cent female as shown in Table 3. The programmes with the highest outturns were Business and Administration at 35.7 per cent, followed by Education at 15 per cent and Health at a distant third position representing 7.1 percent. Programmes with the lowest outturns were Manufacturing and Processing, Security Services, Veterinary Services, Arts, Transport Services, Agriculture,

Forestry and Fisheries, Literacy and Numeracy, and Physical Sciences with less than 1 percent each.

Bachelor's degree level had the highest outturns at 61.5 per cent, followed by Diploma at 21.3 percent while Doctor of Philosophy (PhD), Post-graduate Diploma(PGD) and Higher Diploma had the lowest outturns at less than 1 percent each. At all levels, males had higher outturns except at Certificate level where they were at par with the females.

**Table 3: Distribution of Outturns by Programme, Level and Sex in Universities, 2014**

Programmes	Level														Sub-Total	Grand Total	%	
	PHD		Masters		Bachelors		Post-Graduate Diploma		Higher Diploma		Diploma		Certificate					
	M	F	M	F	M	F	M	F	M	F	M	F	M	F				
Education	8	5	134	96	3178	3312	87	46	0	0	548	720	36	82	3991	4261	8252	15
Arts	0	0	3	1	116	57	0	0	0	0	77	44	13	5	209	107	316	0.6
Humanities	98	7	632	206	871	871	0	0	0	0	362	174	51	50	2014	1308	3322	6.1
Social and Behavioral Sciences	21	17	238	236	473	402	4	2	0	0	39	26	0	0	775	683	1458	2.7
Journalism and Information	0	0	4	2	487	474	0	0	6	9	502	599	201	167	1200	1251	2451	4.5
Business and Administration	47	20	1806	1298	5789	5024	3	1	69	55	2134	2043	611	673	10459	9114	19573	35.7
Law	0	0	19	31	489	586	0	0	0	0	85	48	0	0	593	665	1258	2.3
Life Sciences	37	29	35	31	930	620	0	0	1	1	72	40	0	0	1075	721	1796	3.3
Physical Sciences	0	0	1	0	273	161	0	0	0	0	16	3	0	0	290	164	454	0.8
Mathematics and Statistics	5	1	18	7	521	347	0	0	0	0	39	10	10	6	593	371	964	1.8
Computing	0	1	126	48	1784	772	0	0	19	19	582	288	109	54	2620	1182	3802	6.9
Engineering and Engineering Trades	1	0	70	24	1003	227	0	0	24	0	242	34	127	15	1467	300	1767	3.2
Manufacturing and Processing	0	0	0	0	8	11	0	0	0	0	6	6	0	0	14	17	31	0.1

Architecture and Building	14	1	20	2	359	84	0	0	19	3	122	16	25	4	559	110	669	1.2
Agriculture, Forestry and Fishery	8	1	0	2	195	158	1	0	0	0	22	17	20	26	246	204	450	0.8
Veterinary	0	0	0	0	13	7	0	0	0	0	46	16	64	20	123	43	166	0.3
Health	5	5	120	142	972	1337	2	1	0	0	432	481	187	208	1718	2174	3892	7.1
Social Services	1	0	7	31	234	425	0	0	0	0	484	540	102	218	828	1214	2042	3.7
Personal Services	0	0	0	1	102	230	0	0	0	0	272	313	49	98	423	642	1065	1.9
Transport Services	0	0	0	0	0	0	0	0	0	0	14	3	12	5	26	8	34	0.1
Environmental Protection	15	9	27	25	389	373	0	0	0	0	49	34	0	0	480	441	921	1.7
<b>Security Services</b>	0	0	0	0	54	29	0	0	0	0	30	17	16	14	100	60	160	0.3
Literacy & Numeracy	0	0	0	0	0	0	0	0	0	0	0	0	12	8	12	8	20	0.02
<b>TOTAL</b>	<b>260</b>	<b>96</b>	<b>3260</b>	<b>2183</b>	<b>18240</b>	<b>15507</b>	<b>97</b>	<b>50</b>	<b>138</b>	<b>87</b>	<b>6175</b>	<b>5472</b>	<b>1645</b>	<b>1653</b>	<b>29815</b>	<b>25048</b>	<b>54863</b>	<b>100</b>
%	0.5	0.2	5.9	4	33.2	28.3	0.2	0.1	0.3	0.2	11.3	10	3	3	54.3	45.7	100	
<b>Total %</b>	0.7		9.9		61.5			0.3		0.5		21.3		6		100		

*\*Programme categories as per ISCED 2011 classification*

### **2.2.2 Outturns by Programme, Level and Sex in Universities, 2015**

The total outturns captured for the year 2015 were 70,065 out of which 55.3 per cent were male and 44.7 female as presented in Table 4. The programmes with the highest outturns were Business and Administration at 35 percent, Education at 17.2 per cent, and Computing at a distant third position representing 7.6 percent. The programmes with the least outturns were Manufacturing and Processing, Security Services, Veterinary Services, Arts and Transport Services, with less than 1 percent each.

Bachelor's degree level had the highest outturns at 67.3 percent, Diploma at 18.3 percent and Master's at 8.6 percent while Post-Graduate Diploma and Higher Diploma had less than 1 percent each. Males had higher outturns at all levels except at Higher Diploma where they were at par and Certificate level where female outturns were higher by 0.2 percent.

**Table 4: Distribution of Outturns by Programme, Level and Sex in Universities, 2015**

Programmes	Level														Sub-Total		Grand Total	%
	PHD		Masters		Bachelors		Postgraduate Diploma		Higher Diploma		Diploma		Certificate					
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	3	2	9	5	311	227	0	2	0	0	30	13	42	51	395	300	695	1
Architecture and Building	17	2	31	14	449	96	0	0	13	2	256	41	10	3	776	158	934	1.3
Arts	1	0	2	3	136	76	0	0	0	0	110	39	0	0	249	118	367	0.5
Business and Administration	77	46	1733	1262	8016	7073	4	4	0	0	2634	2213	722	742	13186	11340	24526	35
Computing	1	1	143	63	2489	1157	0	0	10	5	882	450	73	39	3598	1715	5313	7.6
Education	6	6	218	215	5316	4894	112	71	0	0	469	610	25	106	6146	5902	12048	17.2
Engineering and Engineering Trades	0	0	113	47	1009	277	0	0	4	0	410	37	48	2	1584	363	1947	2.8
Environmental Protection	11	30	14	21	431	299	0	0	0	0	38	30	0	0	494	380	874	1.2
Health	4	7	170	212	1428	1988	0	0	0	0	517	559	83	86	2202	2852	5054	7.2
Humanities	114	19	749	357	751	821	0	0	3	6	437	172	77	52	2131	1427	3558	5.1
Journalism and Information	0	0	13	7	594	577	0	0	0	0	477	530	139	193	1223	1307	2530	3.6



Law	2	0	25	26	549	748	0	0	0	0	132	51	0	0	<b>708</b>	<b>825</b>	<b>1533</b>	<b>2.2</b>
Life Sciences	18	4	38	31	1284	876	0	0	0	0	13	14	0	0	<b>1353</b>	<b>925</b>	<b>2278</b>	<b>3.3</b>
Manufacturing and processing	1	0	0	0	49	38	0	0	0	0	12	9	1	4	<b>63</b>	<b>51</b>	<b>114</b>	<b>0.2</b>
Mathematics and Statistics	3	1	14	9	1322	610	0	0	0	0	24	8	21	15	<b>1384</b>	<b>643</b>	<b>2027</b>	<b>2.9</b>
Personal Services	0	1	0	0	176	390	0	0	0	0	114	235	26	91	<b>316</b>	<b>717</b>	<b>1033</b>	<b>1.5</b>
Physical Sciences	165	55	0	0	436	219	0	0	0	0	25	13	0	0	<b>626</b>	<b>287</b>	<b>913</b>	<b>1.3</b>
Security Services	0	0	0	0	134	87	0	0	0	0	132	44	29	8	<b>295</b>	<b>139</b>	<b>434</b>	<b>0.6</b>
Social and Behavioral Sciences	32	13	272	174	767	609	0	0	0	0	95	74	3	4	<b>1169</b>	<b>874</b>	<b>2043</b>	<b>2.9</b>
Social Services	4	0	24	22	111	212	0	0	0	0	232	439	120	172	<b>491</b>	<b>845</b>	<b>1336</b>	<b>1.9</b>
Transport Services	0	0	0	0	0	0	0	0	56	55	47	42	0	0	<b>103</b>	<b>97</b>	<b>200</b>	<b>0.3</b>
Veterinary Services	0	0	0	0	16	4	0	0	0	0	82	27	74	16	<b>172</b>	<b>47</b>	<b>219</b>	<b>0.3</b>
<b>Total</b>	<b>459</b>	<b>187</b>	<b>3568</b>	<b>2468</b>	<b>25826</b>	<b>21283</b>	<b>116</b>	<b>77</b>	<b>86</b>	<b>68</b>	<b>7178</b>	<b>5664</b>	<b>1501</b>	<b>1584</b>	<b>38734</b>	<b>31331</b>	<b>70065</b>	<b>100</b>
<b>%</b>	<b>0.7</b>	<b>0.3</b>	<b>5.1</b>	<b>3.5</b>	<b>36.9</b>	<b>30.4</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>10.2</b>	<b>8.1</b>	<b>2.1</b>	<b>2.3</b>	<b>55.3</b>	<b>44.7</b>	<b>100</b>	
<b>Total %</b>	<b>1</b>		<b>8.6</b>		<b>67.3</b>		<b>0.3</b>		<b>0.2</b>		<b>18.3</b>		<b>4.4</b>		<b>100</b>			

*\*Programme categories as per ISCED 2011 classification*

### **2.2.3 Outturns by Programme, Level and Sex in Universities, 2016**

The total outturns captured for the year 2016 were 68,708 out of which 55.7 per cent were male and 44.3 per cent female as indicated in Table 5. During the period under review, the programmes that had the highest numbers were Business and Administration at 33.1 per cent, Education at 17.5 per cent and Computing at a distant third position with 6.9 percent. The programmes with the lowest outturns were Manufacturing and Processing, Transport Services, Veterinary Services, Arts and Social Services at less than 1 percent each. Bachelor's degree had the highest outturns at 69.5 percent while Diploma was 16 percent. On the other hand, PhD, PGD and Higher Diploma had the lowest outturns at less than 1 percent each. Males had higher outturns at all levels.

**Table 5: Distribution of Outturns by Programme, Level and Sex in Universities, 2016**

Programme	Level														Sub-Total		Grand Total	%
	PHD		Masters		Bachelors		PGD		Higher Dip		Diploma		Certificate					
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture,	3	6	33	16	411	358	0	0	0	0	62	86	46	53	<b>555</b>	<b>519</b>	<b>1074</b>	1.6
Architecture and Building	14	2	16	13	452	59	0	0	2	3	112	6	27	1	<b>623</b>	<b>84</b>	<b>707</b>	1
Arts	1	0	6	8	226	125	0	0	0	0	133	55	27	6	<b>393</b>	<b>194</b>	<b>587</b>	0.9
Business and Administration	61	18	1821	1216	7453	6450	3	2	11	9	2309	2223	547	638	<b>12205</b>	<b>10556</b>	<b>22761</b>	33.1
Computing	3	0	149	65	2234	996	22	7	7	3	611	357	180	120	<b>3206</b>	<b>1548</b>	<b>4754</b>	6.9
Education	33	28	186	205	5301	5276	90	53	0	0	403	455	6	17	<b>6019</b>	<b>6034</b>	<b>12053</b>	17.5
Engineering and Engineering Trades	1	2	45	24	1335	429	0	0	8	0	269	59	43	21	<b>1701</b>	<b>535</b>	<b>2236</b>	3.3
Environmental Protection	10	7	52	36	515	347	0	0	0	0	54	32	0	0	<b>631</b>	<b>422</b>	<b>1053</b>	1.5
Health	7	20	177	232	1278	1676	0	2	0	0	284	336	44	56	<b>1790</b>	<b>2322</b>	<b>4112</b>	6
Humanities	93	2	786	304	1111	901	8	5	18	10	686	411	154	82	<b>2856</b>	<b>1715</b>	<b>4571</b>	6.7
Journalism and Information	0	11	13	0	639	605	0	0	0	0	388	505	156	198	<b>1196</b>	<b>1319</b>	<b>2515</b>	3.7
Law	3	4	39	40	672	916	0	0	0	0	60	47	0	0	<b>774</b>	<b>1007</b>	<b>1781</b>	2.6
Life Sciences	14	8	58	31	1369	697	0	0	0	0	2	0	0	0	<b>1443</b>	<b>736</b>	<b>2179</b>	3.2
Manufacturing and Processing	0	0	0	0	0	0	0	0	0	0	0	0	1	7	<b>1</b>	<b>7</b>	<b>8</b>	0.01**
Mathematics and Statistics	5	2	40	14	1189	691	0	0	0	0	0	0	17	4	<b>1251</b>	<b>711</b>	<b>1962</b>	2.9
Personal Services	2	1	1	2	249	391	5	2			105	170	112	93	<b>474</b>	<b>659</b>	<b>1133</b>	1.6
Physical Sciences	1	2	3	1	573	286	0	0	20	8	2	4	0	0	<b>599</b>	<b>301</b>	<b>900</b>	1.3

Security Services	0	0	8	1	382	129	0	0	0	0	192	29	86	68	<b>668</b>	<b>227</b>	<b>895</b>	1.3	
Social and Behavioral Sciences	10	8	363	178	1024	845	0	1	0	0	61	61	0	0	<b>1458</b>	<b>1093</b>	<b>2551</b>	3.7	
Social Services	1	1	22	39	44	56	0	0	0	0	128	207	41	83	<b>236</b>	<b>386</b>	<b>622</b>	0.9	
Transport Services	0	0	0	0	0	0	0	0	0	0	40	17	0	0	<b>40</b>	<b>17</b>	<b>57</b>	0.1	
Veterinary Services	0	0	3	2	45	18	0	0	0	0	39	22	55	13	<b>142</b>	<b>55</b>	<b>197</b>	0.3	
<b>Total</b>	<b>26</b>	<b>2</b>	<b>122</b>	<b>3821</b>	<b>2427</b>	<b>26502</b>	<b>21251</b>	<b>128</b>	<b>72</b>	<b>66</b>	<b>33</b>	<b>5940</b>	<b>5082</b>	<b>1542</b>	<b>1460</b>	<b>38261</b>	<b>30447</b>	<b>68708</b>	100
%	0.4	0.2	5.6	3.5	38.6	30.9	0.2	0.1	0.1	0.1	8.6	7.4	2.2	2.1	55.7	44.3	100		
	0.6		9.1		69.5		0.3		0.2		16		4.3		100				

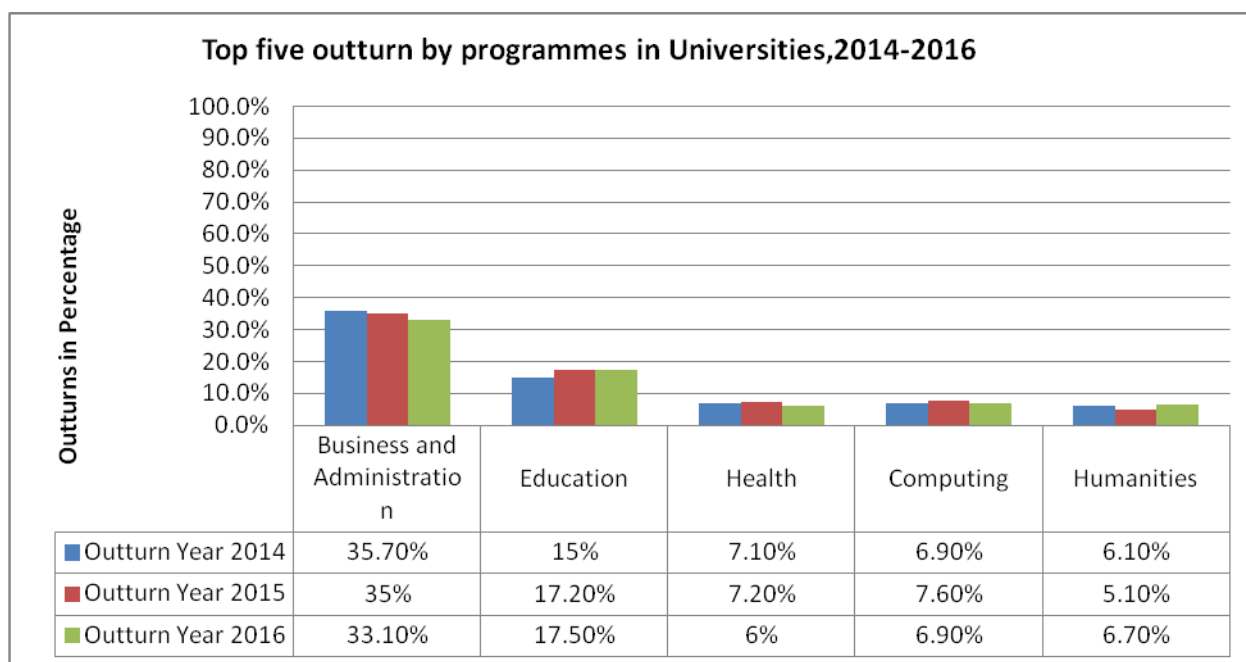
*\*Programme categories as per ISCED 2011 classification*

## 2.2.4 Trend Analysis of Outturns in Universities

This section presents trend analysis of outturns by programme, skill level, and sex for Universities, in years 2014 to 2016. A total of 22 programmes were captured under this category of institutions. The following skill levels were recorded: Doctor of Philosophy, Masters, Bachelors and Post graduate diploma; Higher Diploma, Diploma and Certificate.

### 2.2.4.1 Programmes with Highest Outturns

In figure 7 below, it is observed that Business & Administration and Education programmes occupied the top two positions in the three years, while Computing, Health and Humanities, took third position, fourth and fifth in the three years interchangeably.



*Figure 7: Top five outturns by Programme in Universities, 2014-2016*

### 2.2.4.2 Programmes with Lowest Outturns

During the period under review, the programmes that had the lowest outturns were Manufacturing & Processing, Transport Services, Veterinary Services, Security Services and Arts as shown in table 6. Manufacturing & Processing recorded 0.1 percent in 2014, while in 2015 and 2016 it recorded 0.2 and 0.01 percent respectively.

Table 6: Table 6: Programmes with Lowest Outturns in Universities, 2014-16

Programmes	Percentage		
	2014	2015	2016
Manufacturing & Processing	0.1	0.2	0.01
Transport Services	0.1	0.3	0.1
Veterinary Services	0.3	0.3	0.3
Arts	0.6	0	0.5
Security Services	0.3	0	0

### 2.2.4.3 Distribution of Outturns by Programme and Sex

Figures 8 and 9 below demonstrate the top five programmes that were dominated by males and females respectively from all Universities that responded in the survey.

From figure 8, it can be observed that males dominated in Architecture & Building as well as Engineering & Engineering Trades programmes for the three (3) years running. Flexibility was only observed in the programmes taking third position, which changed from Transport Services in 2014 to Veterinary Services in 2015 and Computing in 2016. On average, the male outturns were 85 percent for Architecture & Building and 80 percent for Engineering & Engineering Trades. The third position was taken by Veterinary Services which recorded 76.9 percent.

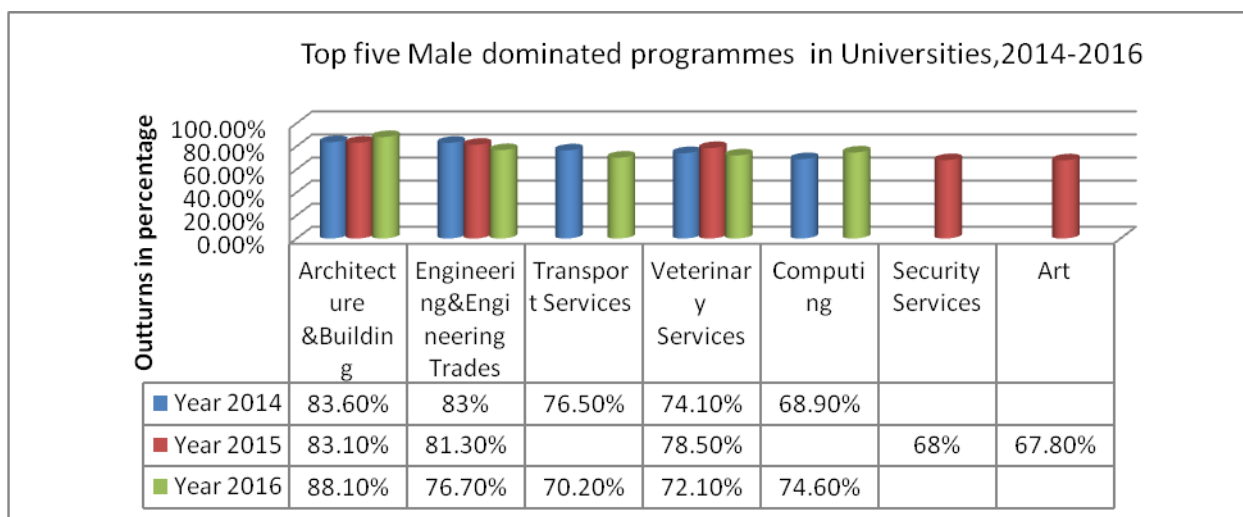
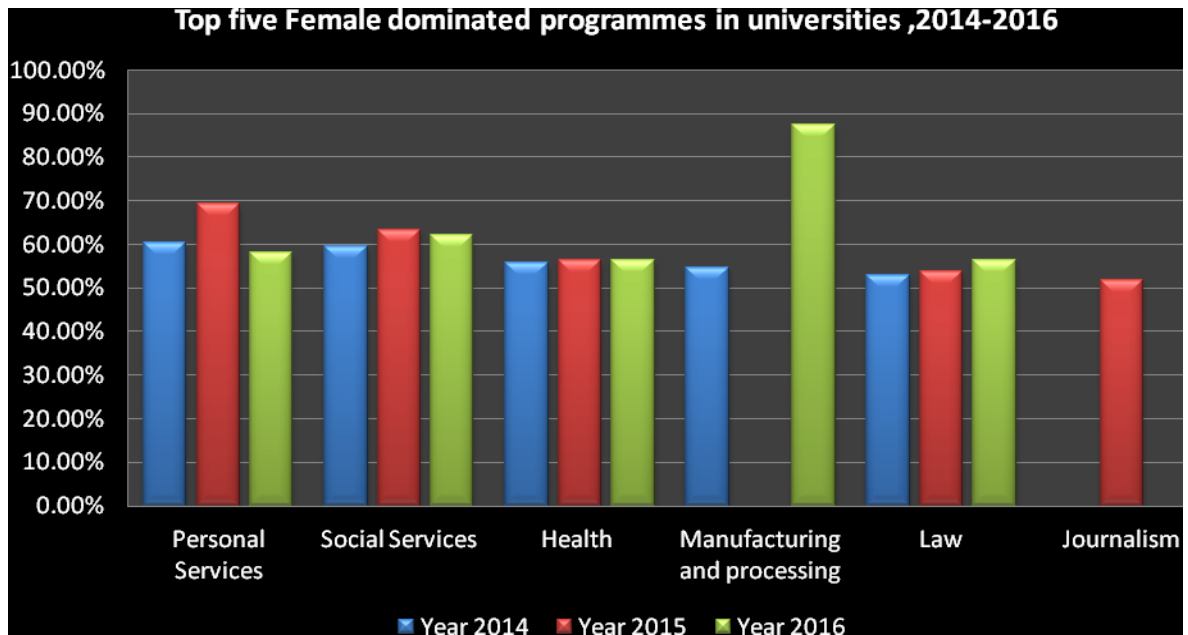


Figure 8: Top five Male dominated programmes in Universities, 2014-2016

Figure 9 presents top five female dominated programmes. Females dominated in Personal Services, Social Services, Health, Manufacturing & Processing and Law. In 2016, females comprised almost 90 percent of the year's outturns.

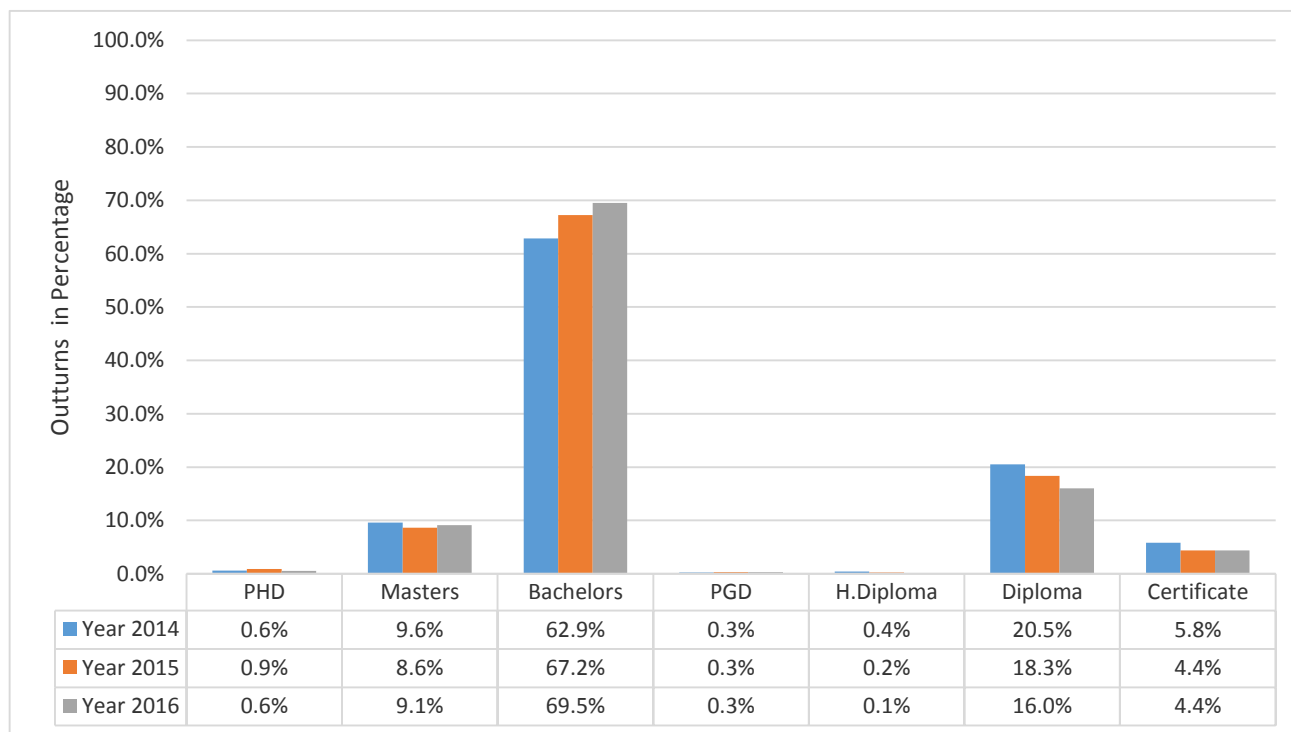


**Figure 9:** Top five Female dominated programmes in Universities, 2014-2016

#### 2.2.4.4 Overall change in Outturns per Skill Level

The survey revealed that out of the total outturns per level, PhD outturns increased from 0.6 percent to 0.9 percent between 2014 and 2015 then declined to 0.6 percent in 2016. At Bachelor’s level outturns increased by 4.3 and 2.3 percent from 2014 to 2015 and 2015 to 2016 respectively. This level recorded the highest growth during the period under review. Outturns at Diploma level recorded a general decline from 2.2 percent between 2014 and 2015 and further declined by 2.3 percent in 2016 as shown in Figure 10 below.

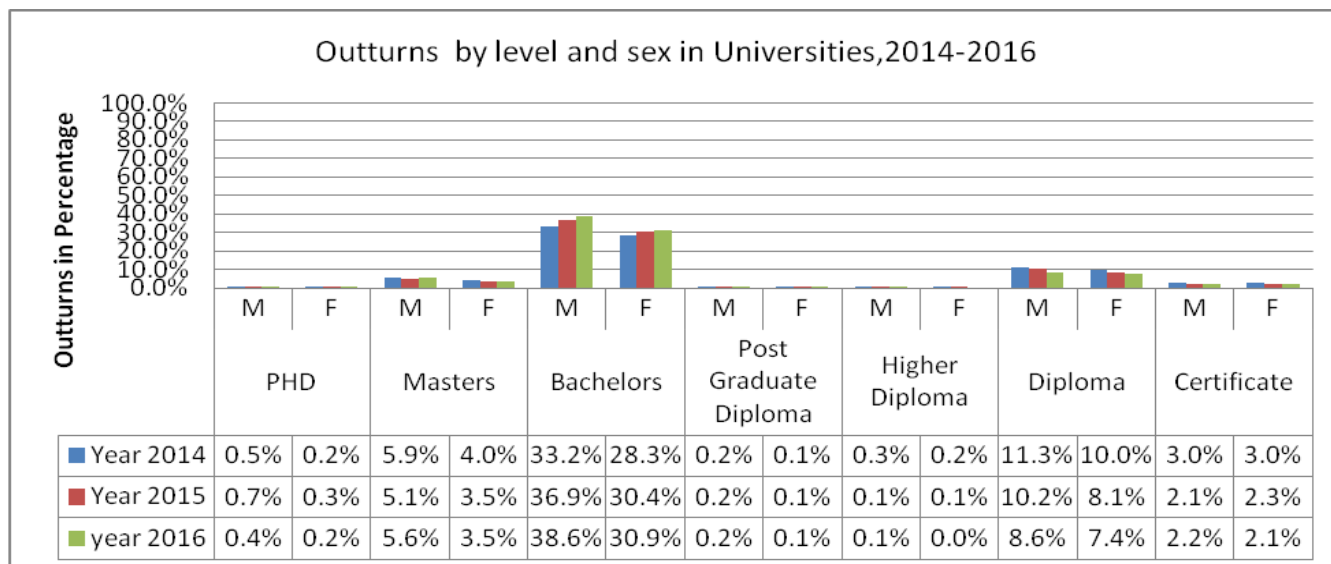
A general observation that can be made here is that in most of the levels, outturns showed a fluctuating trend while in others an increase was recorded. Bachelor’s level recorded an increase while PhD, Postgraduate Diploma and Higher Diploma remained more or less constant. On the other hand, Master’s, Diploma and Certificate levels showed a decreasing trend during the period under review.



**Figure 10:** Outturns by Level and Year in Universities, 2014-2016

#### 2.2.4.5: Distribution of Outturns by Skill Level and Sex

During the period under review, it was observed that there was a steady growth for both males and females outturns for Bachelor’s level. The opposite was however the case in regard to Diploma and Certificate levels. Fluctuation was observed in regard to Master’s level for both sexes. Outturns change for Postgraduate Diploma and Higher Diploma were minimal for both sexes as shown in figure 11.



**Figure 11:** Outturns by Level and Sex in Universities, 2014-2016



#### **2.2.4.6 Summary of Outturns by Year, Skill Level and Sex**

In the period under review, it can be observed that outturns fluctuated over the years by 27.7 percent between 2014 and 2015 and by 1.9 percent between 2015 and 2016. Male outturns were higher accounting for 55.7 per cent in 2016 compared to 44.3 percent for females followed by year 2015 with 55.3 percent against 44.7 percent and 54.3 percent in 2014 against 45.7 percent respectively.

Male outturns were higher at all levels except Higher Diploma and Certificate levels where both genders were at par.

Further, it can be observed that Bachelor's level had the highest number of outturns accounting for 66.4 percent of the total outturns for the three year followed by Diploma at 18.4 percent and Master's at 9.2 percent. PhD, Post-graduate Diploma, Higher Diploma and Certificate levels had less than 5 percent of the total outturns.

**Table 7: Summary of Universities Outturns by Year, Level and Sex, 2014-2016**

<b>LEVEL</b>																	
	PHD		Masters		Bachelors		P.G Diploma		Higher Diploma		Diploma		Certificate		Sub-Total		Grand Total
Year	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
2014	260	96	3260	2183	18240	15507	97	50	138	87	6187	5480	1633	1645	29815	25048	54863
%	0.5	0.2	5.9	4	33.2	28.3	0.2	0.1	0.3	0.2	11.3	10	3	3	54.3	45.7	100
2015	459	187	3568	2468	25826	21283	116	77	86	68	7178	5664	1501	1584	38734	31331	70065
%	0.7	0.3	5.1	3.5	36.9	30.4	0.2	0.1	0.1	0.1	10.2	8.1	2.1	2.3	55.3	44.7	100
2016	262	122	3821	2427	26502	21251	128	72	66	33	5940	5082	1542	1460	38261	30447	68708
%	0.4	0.2	5.6	3.5	38.6	30.9	0.2	0.1	0.1	0	8.6	7.4	2.2	2.1	55.7	44.3	100
Total	981	405	10649	7078	70568	58041	341	199	290	188	19305	16226	4676	4689	106810	86826	193636
%	0.5	0.2	5.5	3.7	36.4	30	0.2	0.1	0.1	0.1	10	8.4	2.4	2.4	55.2	44.8	100

## 2.3 NATIONAL POLYTECHNICS

The National Polytechnics were established by the Government mostly to train middle level personnel for both public and private sectors. Currently there are eight (8) National Polytechnics in the country. The total number of outturns from the National Polytechnics captured for the year 2014 was 8,067 while in 2015 and 2016 they were 10,873 and 14,376 respectively.

### 2.3.1 Outturns by Programme, Level and Sex in National Polytechnics, 2014

The total outturns captured for the year were 8,067 out of which 58.2 per cent male and 41.8 per cent female as shown in Table 8. The programmes with the highest outturns were Business and Administration at 30 per cent, followed by Engineering and Engineering Trades at 21.76 per cent and Architecture and Building at a distant third position representing 9.16 per cent. The programme with the lowest outturns was Humanities at less than 1 per cent.

Diploma level had the highest outturns at 59 per cent, followed by Certificate at 31.1 per cent while Higher Diploma had the lowest outturns at 0.5 per cent. Males had higher outturns in Diploma at 35.2 per cent with the females accounting for 23.8 per cent.

**Table 8: Distribution of Outturns by Programme, Level and Sex in National Polytechnics, 2014**

Programme	Level										Sub-Total	Grand Total	%	
	Higher Diploma		Diploma		Certificate		Artisan		Craft					
	M	F	M	F	M	F	M	F	M	F				M
Agriculture, Forestry and Fishery	0	0	102	57	39	30	0	0	0	0	141	87	228	2.83
Architecture and Building	0	0	543	66	108	16	2	0	4	0	657	82	739	9.16
Business and Administration	17	18	729	803	326	444	0	0	27	57	1099	1322	2421	30.01
Computing	0	0	131	77	194	130	0	0	1	0	326	207	533	6.61
Engineering and Engineering	2	3	666	70	514	113	268	35	76	8	1526	229	1755	21.76
Health	0	0	236	189	69	55	0	0	0	0	305	244	549	6.81
Humanities	0	0	0	0	0	0	0	0	19	33	19	33	52	0.64
Journalism and Information	0	0	35	97	21	71	0	0	13	18	69	186	255	3.16
Life Sciences	0	0	105	76	10	10	0	0	0	0	115	86	201	2.49
Manufacturing and Processing	0	0	24	87	17	61	12	37	0	0	53	185	238	2.95
Personal Services	0	0	27	71	6	69	13	49	23	45	69	234	303	3.76
Physical Sciences	0	0	16	18	23	23	0	0	9	13	48	54	102	1.26
Social Services	0	0	225	305	40	121	0	0	0	0	265	426	691	8.57
Transport services	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>19</b>	<b>21</b>	<b>2839</b>	<b>1916</b>	<b>1367</b>	<b>1143</b>	<b>295</b>	<b>121</b>	<b>172</b>	<b>174</b>	<b>4692</b>	<b>3375</b>	<b>8067</b>	<b>100</b>
%	0.2	0.3	35.2	23.8	16.9	14.2	3.7	1.5	2.1	2.2	58.2	41.8	100	
Total percentage	0.5		59		31.1		5.2		4.3		100			

*\*Programme categories as per ISCED 2011 classification*

### **2.3.2 Outturns by Programme and Level in National Polytechnics, 2015**

The total outturns captured for the year were 10,873 out of which 60.6 percent represented males and 39.4 percent females as shown in Table 9. The highest outturns were in Business and Administration at 29.9 percent, followed by Engineering and Engineering Trades at 24.8 percent, and Architecture and Building at 11.4 percent. The lowest outturns were in programmes under Transport Services and Humanities at less than 1 percent each.

Diploma level had the highest outturns at 64.2 per cent, followed by Certificate level at 27.7 percent, while Higher Diploma had the lowest outturns at less than 1 percent. It is noted that males had higher outturns in Diploma, Certificate and Artisan levels, while females had higher outturns in Craft level. However, at Higher Diploma level they were at par.

**Table 9: Distribution of Outturns by Programme, Level and Sex in National Polytechnics, 2015**

Programmes	Level										Sub-Total		Grand Total	%
	Higher Diploma		Diploma		Certificate		Artisan		Craft					
	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	229	135	86	51	0	0	0	0	315	186	501	4.6
Architecture and Building	0	0	903	129	173	19	6	1	7	7	1089	149	1238	11.4
Business and Administration	12	12	1001	1188	363	482	8	9	55	122	1439	1813	3252	29.9
Computing	0	0	289	142	134	103	0	0	3	2	426	247	673	6.2
Engineering and Engineering Trades	2	0	1179	132	809	117	348	13	68	26	2406	288	2694	24.8
Health	0	0	207	197	37	25	0	0	0	0	244	222	466	4.3
Humanities	1	0	0	0	0	0	0	0	10	33	11	33	44	0.4
Journalism and Information	0	0	43	85	8	38	0	0	4	6	55	129	184	1.7
Life Sciences	0	0	91	119	3	19	0	0	0	0	94	138	232	2.1
Manufacturing and Processing	0	0	12	63	35	72	11	17	9	31	67	183	250	2.3
Personal Services	0	0	28	103	2	47	2	54	7	3	39	207	246	2.3
Physical Sciences	0	0	23	29	30	30	0	0	0	0	53	59	112	1
Social Services	0	0	259	396	87	235	0	0	0	0	346	631	977	9
Transport Services	0	0	0	0	4	0	0	0	0	0	4	0	4	0.01
<b>TOTAL</b>	<b>15</b>	<b>12</b>	<b>4264</b>	<b>2718</b>	<b>1771</b>	<b>1238</b>	<b>375</b>	<b>94</b>	<b>163</b>	<b>223</b>	<b>6588</b>	<b>4285</b>	<b>10873</b>	<b>100</b>
%	0.1	0.1	39.2	25	16.3	11.4	3.4	0.9	1.5	2.1	60.6	39.4	100	
Total percentage	0.2		64.2		27.7		4.3		3.6		100			

*\*Programme categories as per ISCED 2011 classification*

### **2.3.3 Outturns by Programme, Level and Sex in National Polytechnics, 2016**

The total outturns captured for the year were 14,376 out of which 60.4 percent represented males and 39.6 percent females as shown in Table 10. Analysis of programmes offered indicated that the highest outturns were in Business and Administration at 24.6 percent, followed closely by Engineering and Engineering Trades at 24.3 percent and in third position was Architecture and Building at 13.1 percent. The lowest outturns were recorded in programmes under Physical Sciences with 1.1 percent and Journalism & Information and Humanities with 1.3 percent each.

Diploma level had the highest outturns at 65 percent, followed by Certificate level at 24.5 percent, Artisan at 5.3 per cent and Craft at 2.9 per cent. Higher Diploma had the lowest outturns at 1.6 percent. It is noted that males had higher outturns in Diploma, Certificate and Craft, while females had higher outturns in Higher Diploma and Artisan levels.

**Table 10: Distribution of Outturns by Programme, Level and Sex in National Polytechnics, 2016**

Programme	Level										Sub-Total		Grand Total	%
	Higher Diploma		Diploma		Certificate		Artisan		Craft					
	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	313	184	90	66	0	0	0	0	403	250	653	4.5
Architecture and Building	0	0	1417	223	208	12	8	0	3	1	1643	236	1879	13.1
Business and Administration	7	16	1064	1338	376	537	3	14	59	125	1509	2030	3539	24.6
Computing	0	243	550	208	146	0	0	0	2	0	709	453	1162	8.1
Engineering and Engineering Trades	6	1	1610	185	967	94	484	42	77	2	3170	324	3494	24.3
Health	0	0	283	235	23	35	0	0	0	0	306	270	576	4
Humanities	0	0	56	71	0	0	0	0	12	49	68	120	188	1.3
Journalism and Information	0	0	38	67	15	51	0	0	14	8	67	126	193	1.3
Life Sciences	0	0	161	156	7	25	0	0	0	0	168	181	349	2.4
Manufacturing and Processing	0	0	30	119	24	144	11	28	17	36	82	327	409	2.8
Personal Services	0	0	40	122	37	173	16	158	2	6	95	459	554	3.9
Physical Sciences	0	0	0	0	69	82	0	0	8	4	77	86	163	1.1
Social Services	0	0	307	567	86	257	0	0	0	0	393	824	1217	8.5
<b>Total</b>	<b>13</b>	<b>260</b>	<b>5869</b>	<b>3475</b>	<b>2048</b>	<b>1476</b>	<b>194</b>	<b>231</b>	<b>522</b>	<b>242</b>	<b>8690</b>	<b>5686</b>	<b>14376</b>	<b>100</b>
%	0.1	1.8	40.8	24.2	14.2	10.3	1.3	1.6	3.6	1.7	60.4	39.6		
Total percentage	1.8		65		24.5		2.9		5.3		100			

*\*Programme categories as per ISCED 2011 classification*

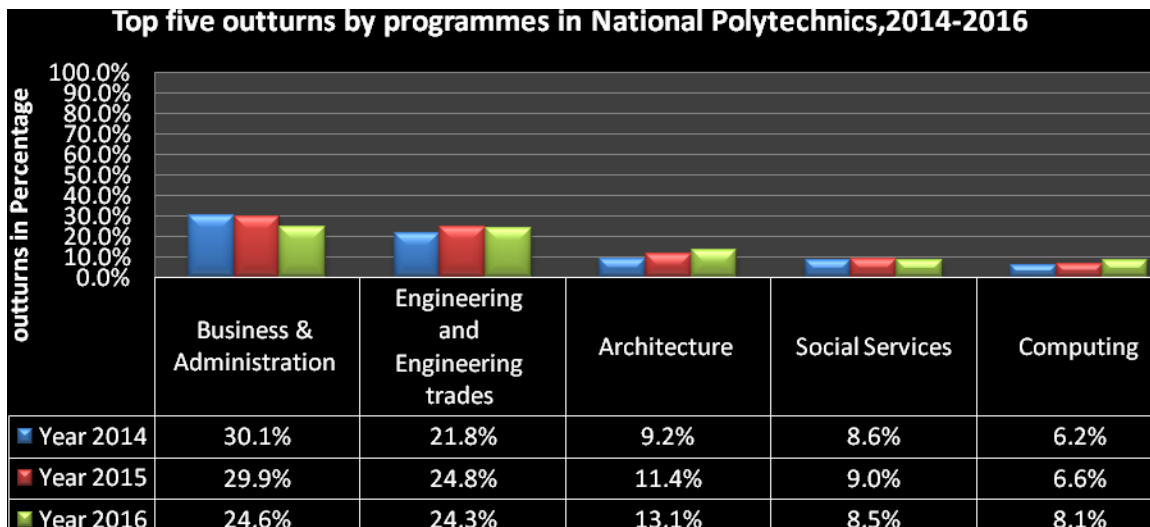


### 2.3.4 Trend Analysis on Outturns in National Polytechnics, 2014-2016

This section presents trend analysis of outturns by programme, skill level, and sex for National Polytechnics, in years 2014 to 2016. A total of 14 programmes were captured under this category of institution. The following skill levels were recorded: Higher Diploma, Diploma, Certificate, Artisan and Craft.

#### 2.3.4.1 Programmes with Highest Outturns

For the three-year period, Business and Administration programme maintained the leading position in outturn levels comprising 30.01 percent share of outturns from all the 13 programmes captured in 2014. It stood at 29.9 percent in 2015 and 24.6 percent in 2016 as shown in Figure 12 below. Similarly, Engineering & Engineering Trades programme maintained second position throughout the period under review, and that was the same case for Architecture & Building that maintained third position.



**Figure 12:** Top five outturns by programme in National Polytechnics, 2014-2016

#### 2.3.4.2 Programmes with Lowest Outturns

In the period under review, the programmes that had the lowest outturns were Transport Services, Humanities, Physical Sciences and Journalism & Information and Life Sciences as indicated in Table 11. It was generally observed that they maintained the lowest outturn levels throughout the period.

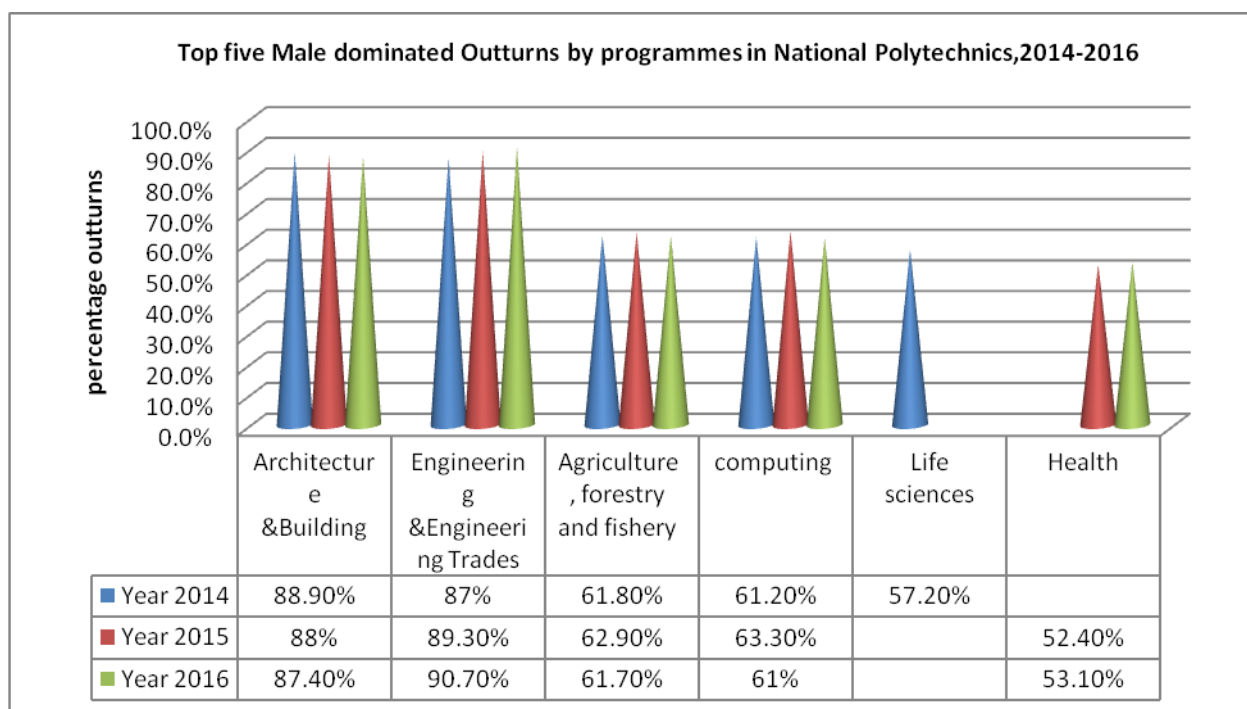
**Table 11:** Lowest Outturns by programme and year in National Polytechnics

Programmes	Percentage		
	2014	2015	2016
Transport services	0	0.01	0
Humanities	0.64	0.4	1.3
Physical Sciences	1.26	1	1.1
Journalism and Information	3.16	1.7	1.3
Life Sciences	2.49	2.1	2.4

### 2.3.4.3 Distribution of Outturns by Programme and Sex

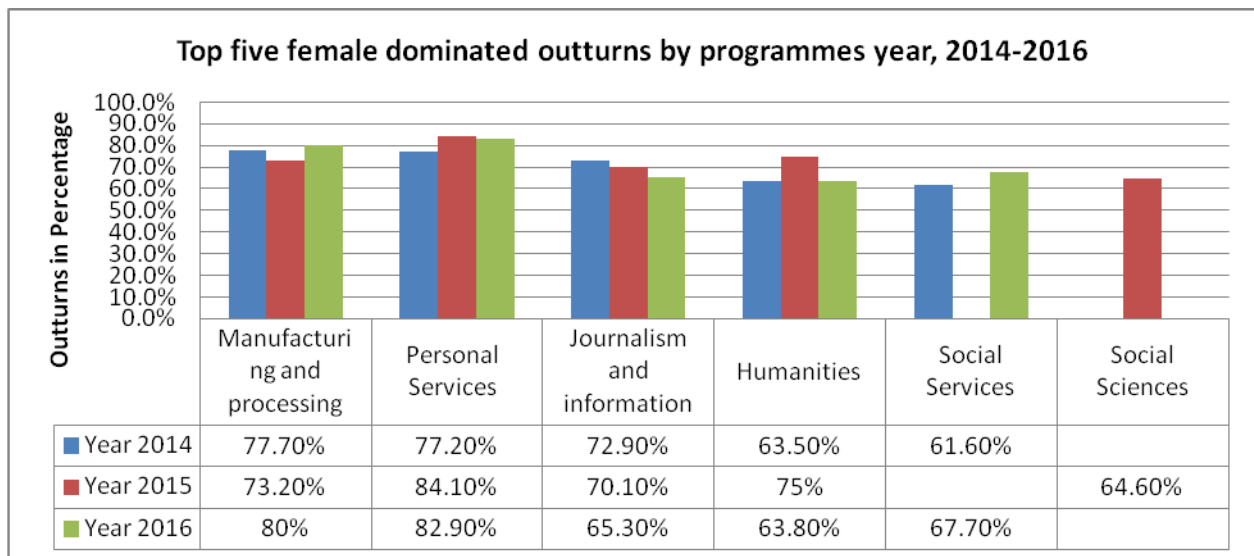
Figures 13 and 14 demonstrate the top five programmes that were dominated by males and females respectively from National Polytechnics.

From Figure 13, it can be observed that males dominated in Architecture & Building, Engineering & Engineering Trades; Agriculture, Forestry & Fishery and Computing for the period under review. On average, the male outturns were 89 percent for Engineering & Engineering Trades and 88.1 percent for Architecture & Building. The third position was taken by Agriculture, Forestry & Fishery; and Computing which recorded 61.8 percent each.



**Figure 13:** Top five male dominated programmes in National Polytechnics, 2014 - 2016

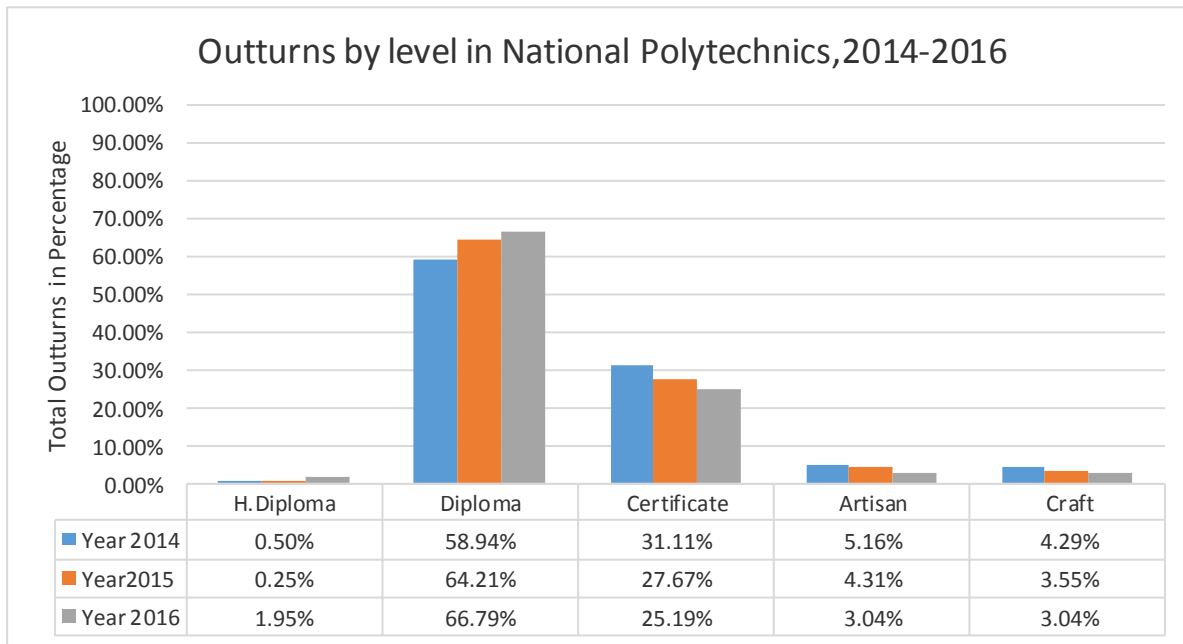
Figure 14 presents top five female dominated programmes. Females dominated in Personal Services programme, Manufacturing & Processing, Journalism & Information, Humanities and Social Services. Social Services programme dominated for two out of the three years while Social Sciences featured once.



**Figure 14:** Top five female dominated programmes in National Polytechnics, 2014-2016

#### 2.3.4.4 Overall change in Outturns per Skill Level

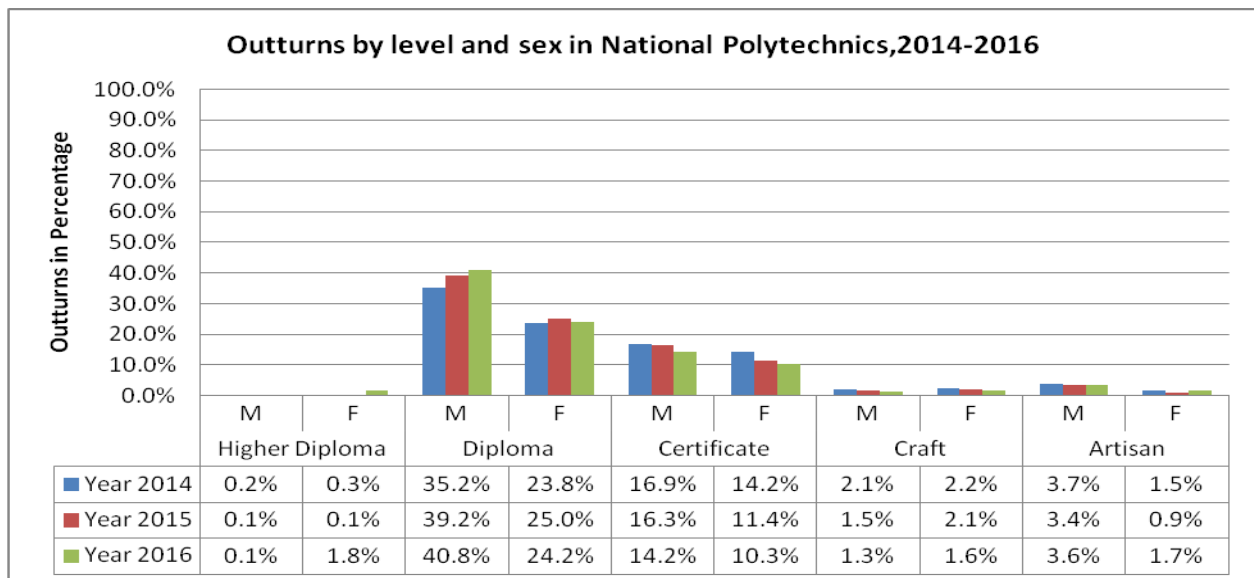
The survey revealed that out of the total outturns per level, Higher Diploma outturns declined to 0.25 percent from 0.5 percent between 2014 and 2015 then increased to 1.95 percent in 2016. At Diploma level, there was a steady increase in outturns from 58.94 percent in 2014 to 64.21 percent in 2015, and a further increase to 66.79 percent in 2016. There was a steady decline in outturns at Artisan level throughout the period under review.



**Figure 15:** Outturns by Level in National Polytechnics, 2014-2016

#### 2.3.4.5: Distribution of Outturns by Skill Level and Sex

During the period under review, it was observed that outturns for males retained a steady growth at Diploma level. The opposite was however the case in regard to Certificate and Craft levels. Fluctuation was observed in regard to Artisan level outturns. For the females, a clear decrease can be observed in regard to outturns at Certificate level whereas fluctuation is evident in Diploma, Artisan and Craft levels as shown in Figure 16.



**Figure 16:** Outturns by level and sex in national polytechnics, 2014-2016

### 2.3.4.6: Summary of outturns by Year, Skill Level and Sex

In the period under review, it was observed that male outturns were more than those of females in all the three years accounting for 58.2 per cent in 2014 and 60.6 percent and 60percent in 2015 and 2016 respectively as shown in Table 12.

Diploma level had the highest outturns for both males and females. However, it can be observed that male outturns surpassed those of females in the three years at Diploma, Certificate and Artisan levels. The trend however changed at Higher Diploma and Craft level where female outturns surpassed those of males in the three years other than 2015 where males surpassed females at Higher Diploma level.

**Table 12:** Summary of Outturns by Year, Level and Sex in National Polytechnics, 2014-2016

Year	LEVEL												Grand Total
	Higher Diploma		Diploma		Certificate		Craft		Artisan		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	
2014	19	21	2839	1916	1367	1143	172	174	295	121	4692	3375	8067
%	0.2	0.3	35.2	23.8	16.9	14.2	2.1	2.2	3.7	1.5	58.2	41.8	100
2015	15	12	4264	2718	1771	1238	163	223	375	94	6588	4285	10873
%	0.1	0.1	39.2	25	16.3	11.4	1.5	2.1	3.4	0.9	60.6	39.4	100
2016	13	260	5869	3475	2048	1476	194	231	522	242	8690	5686	14376
%	0.1	1.8	40.8	24.2	14.2	10.3	1.3	1.6	3.6	1.7	60.4	39.6	100

## 2.4 INSTITUTES OF TECHNOLOGY

Institutes of Technology are registered by the Ministry of Education, Science and Technology to offer technical, vocational and entrepreneurial training. However, these institutes are held in trust for the community by Boards of Trustees (BOT) which serve in an advisory role. The core function of these institutes is therefore to undertake education and training in TVET programmes, promote research and technological development, and disseminate information on innovations.

### 2.4.1 Outturns by Programme, Level and Sex in Institutes of Technology, 2014

The total outturns captured for the year were 3,428 outturns out of which 54.7 percent were male and 45.3 percent female as shown in Table 13. It can be observed that Business and Administration programme had the highest outturns accounting for 36.4 percent followed by

Engineering and Engineering Trades at 18.8 percent, Architecture and Building at 9.3 percent. Programmes with the lowest outturns were Life Sciences and Physical Sciences at 0.6 percent each. Diploma level had the highest outturns at 57.2 percent, followed by Certificate level at 34.1 percent while the levels with lowest outturns were Higher Diploma and Artisan at 2.8 and 1.7 percent respectively.

**Table 13: Distribution of Outturns by Programme, Level and Sex in Institutes of Technology, 2014**

Programmes	Higher Diploma		Diploma		Certificate		Artisan		Craft		Sub-Total		Grand Total	%
	M	F	M	F	M	F	M	F	M	F	M	F		
Education	0	0	13	30	8	37	0	0	0	0	21	67	88	2.6
Humanities	0	0	0	0	19	74	0	0	0	0	19	74	93	2.7
Journalism and Information	10	5	19	12	0	0	0	0	0	0	29	17	46	1.3
Business and Administration	30	16	381	560	63	117	0	0	34	47	508	740	1248	36.4
Life Sciences	4	5	6	3	2	1	0	0	0	0	12	9	21	0.6
Physical Sciences	0	0	0	0	3	14	0	0	3	1	6	15	21	0.6
Computing	0	0	72	42	64	79	0	0	0	0	136	121	257	7.5
Engineering and Engineering Trades	0	0	163	17	344	26	36	2	53	3	596	48	644	18.8
Manufacturing and Processing	0	0	21	33	23	63	10	11	0	0	54	107	161	4.7
Architecture and Building	23	3	179	23	84	7	0	0	0	0	286	33	319	9.3
Agriculture, Forestry and Fishery	0	0	20	4	21	6	0	0	0	0	41	10	51	1.5
Social Services	0	0	86	187	18	37	0	0	0	0	104	224	328	9.6
Personal Services	0	0	36	53	28	34	0	0	0	0	64	87	151	4.4
<b>Total</b>	<b>67</b>	<b>29</b>	<b>996</b>	<b>964</b>	<b>677</b>	<b>495</b>	<b>46</b>	<b>13</b>	<b>90</b>	<b>51</b>	<b>1876</b>	<b>1552</b>	<b>3428</b>	<b>100.0</b>
%	2.0	0.8	29.1	28.1	19.7	14.4	1.3	0.4	2.6	1.5	54.7	45.3	100	
<b>Total percentage</b>	<b>2.8</b>		<b>57.2</b>		<b>34.1</b>		<b>1.7</b>		<b>4.1</b>		<b>100</b>			

*\*Programme categories as per ISCED 2011 classification*

#### **2.4.2 Outturns by Programme, Level and Sex in Institutes of Technology, 2015**

The total outturns captured for the year 2015 was 4,902 out of which 69.3 per cent were male and 30.7 female as presented in Table 14. The programme with the highest outturns was Engineering and Engineering Trades at 43.1 percent while Business and Administration followed at 23.6 percent and Architecture and Building came a distant third at 7.6 percent. The programmes with the least outturns were Life Sciences, Physical Sciences and Health programmes which had less than 1 percent each.

Certificate level had the highest outturns at 46.6 percent, followed by Diploma at 44.5 percent with the rest accounting for less than 10 percent. Male outturns were generally higher at all levels.



**Table 14:** Distribution of Outturns by Programme, Level and Sex in Institutes of Technology, 2015

Programmes	Level												Grand Total	%
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Sub- Total			
	M	F	M	F	M	F	M	F	M	F	M	F		
Education	0	0	11	22	9	13	0	0	34	23	54	58	112	<b>2.3</b>
Humanities	0	0	0	0	19	59	0	0	0	0	19	59	78	<b>1.6</b>
Journalism and Information	0	0	39	37	0	1	0	0	0	0	39	38	77	<b>1.6</b>
Business and Administration	30	54	411	441	51	85	0	0	47	36	539	616	1155	<b>23.6</b>
Life Sciences	9	12	15	8	0	1	0	0	0	0	24	21	45	<b>0.9</b>
Physical Sciences	0	0	0	0	3	17	0	0	1	1	4	18	22	<b>0.4</b>
Computing	0	0	83	59	74	64	0	0	0	0	157	123	280	<b>5.7</b>
Engineering and Engineering Trades	14	0	320	37	1560	28	22	5	118	8	2034	78	2112	<b>43.1</b>
Manufacturing and Processing	0	0	27	60	32	93	2	5	0	0	61	158	219	<b>4.5</b>
Architecture and Building	9	0	215	45	82	11	0	0	9	0	315	56	371	<b>7.6</b>
Agriculture, Forestry and Fishery	0	0	31	8	6	9	0	0	0	0	37	17	54	<b>1.1</b>
Health	0	0	10	7	0	0	0	0	0	0	10	7	17	<b>0.3</b>
Social Services	0	0	39	152	10	16	0	0	0	0	49	168	217	<b>4.4</b>
Personal Services	0	0	38	63	16	26	0	0	0	0	54	89	143	<b>2.9</b>
Total	62	66	1239	939	1862	423	24	10	209	68	3396	1506	4902	
%	1.3	1.3	25.3	19.2	38	8.6	0.5	0.2	4.3	1.4	69.3	30.7		<b>100</b>
Total percentage	<b>2.6</b>		<b>44.5</b>		<b>46.6</b>		<b>0.7</b>		<b>5.7</b>		<b>100</b>			

**\*Programme categories as per ISCED 2011 classification**

### **2.4.3 Outturns by Programme, Level and Sex in Institutes of Technology, 2016**

The total outturns captured for the year 2016 were 4,706 out of which 65.8 per cent were male and 34.2 female as presented in Table 15. The programmes with the highest outturns was Engineering and Engineering Trades at 37.2 percent while Business and Administration was second at 28 percent and Architecture and Building came a distant third at 8.2 percent. The programmes with the lowest outturns were Education, Physical Sciences and Health programmes which all had less than 1 percent each.

Diploma level had the highest outturns at 49.3 percent, followed by Certificate level at 40.5 percent with the rest accounting for 11.2 percent. Male outturns were higher at all levels except at Higher Diploma level.

**Table 15: Distribution of outturns by programmes, level and sex in Institutes of Technology, 2016**

	LEVEL												Grand Total	%	
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Sub-Total				
	M	F	M	F	M	F	M	F	M	F	M	F			
Education	0	0	2	1	2	0	0	0	0	0	0	4	1	5	0.1
Humanities	0	0	0	0	10	50	0	0	0	0	10	50	60	60	1.3
Journalism and Information	16	20	33	9	0	3	0	0	0	0	49	32	81	81	1.7
Business and Administration	68	72	397	556	59	68	0	0	45	52	569	748	1317	1317	28
Life Sciences	21	28	11	10	0	2	0	0	0	0	32	40	72	72	1.5
Physical Sciences	0	0	0	0	2	13	0	0	1	0	3	13	16	16	0.3
Computing	0	0	96	70	89	115	0	0	0	0	185	185	370	370	7.9
Engineering & Engineering Trades	3	0	378	32	1183	34	32	2	83	5	1679	73	1752	1752	37.2
Manufacturing and Processing	0	0	19	29	48	114	1	8	0	0	68	151	219	219	4.6
Architecture and Building	0	0	263	64	36	5	0	0	20	0	319	69	388	388	8.2
Agriculture, Forestry & Fishery	0	0	30	17	19	5	0	0	0	0	49	22	71	71	1.5
Health	0	0	9	5	0	0	0	0	0	0	9	5	14	14	0.3
Social Services	0	0	34	63	7	18	0	0	0	0	41	81	122	122	2.6
Personal Services	0	0	69	123	8	15	1	3	0	0	78	141	219	219	4.6
Total	108	120	1341	979	1463	442	34	13	149	57	3095	1611	4706	4706	<b>100</b>
%	2.3	2.5	28.5	20.8	31.1	9.4	0.7	0.3	3.2	1.2	65.8	34.2			
<b>Total percentage</b>	<b>4.8</b>		<b>49.3</b>		<b>40.5</b>		<b>1</b>		<b>4.4</b>		<b>100</b>				

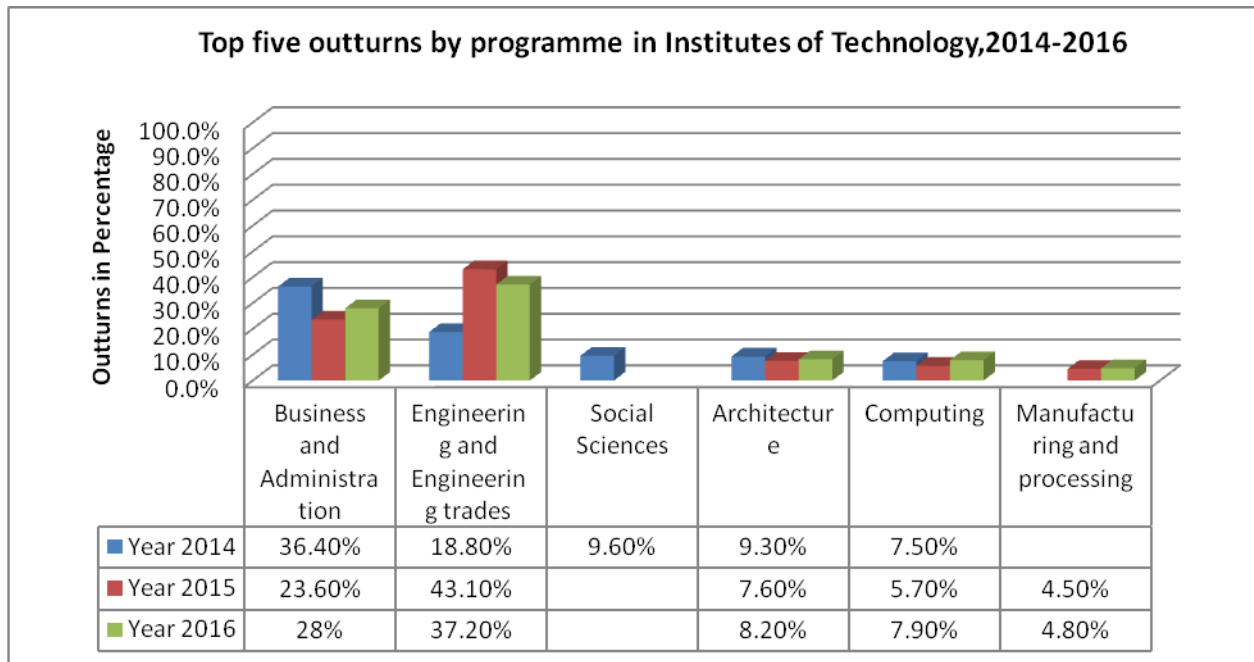
*Programme categories as per ISCED 2011 classification \**

#### 2.4.4 Trend Analysis on Outturns in Institutes of Technology, 2014-2016

This section presents trend analysis of outturns by programme, sex and skill level for Institutes of Technology, in the years 2014 to 2016. A total of 15 programmes were captured under this category of institutions. The following skill levels were recorded: Higher Diploma, Diploma, Certificate, Artisan and Craft.

##### 2.4.4.1 Programmes with Highest Outturns

Figure 17 gives a pictorial representation of the programmes with the highest outturns in each of the three years under review. For the three-year period, Engineering & Engineering Trades programme and Engineering & Engineering Trades were the top two, with Engineering being slightly higher. Architecture & Construction and Computing appeared to tie.



**Figure 17:** Top five Outturns by Programme in Institutes of Technology, 2014-2016

##### 2.4.4.2 Programmes with Lowest Outturns

In the period under review, the programmes that had the lowest outturns were Education, Health, Physical Sciences, Life Sciences and Journalism & Information as indicated in Table 16. It was generally observed that they maintained the lowest outturn levels throughout the period.

**Table 16:** Distribution of programmes with the lowest Outturns in Institutes of Technology, 2014-2016

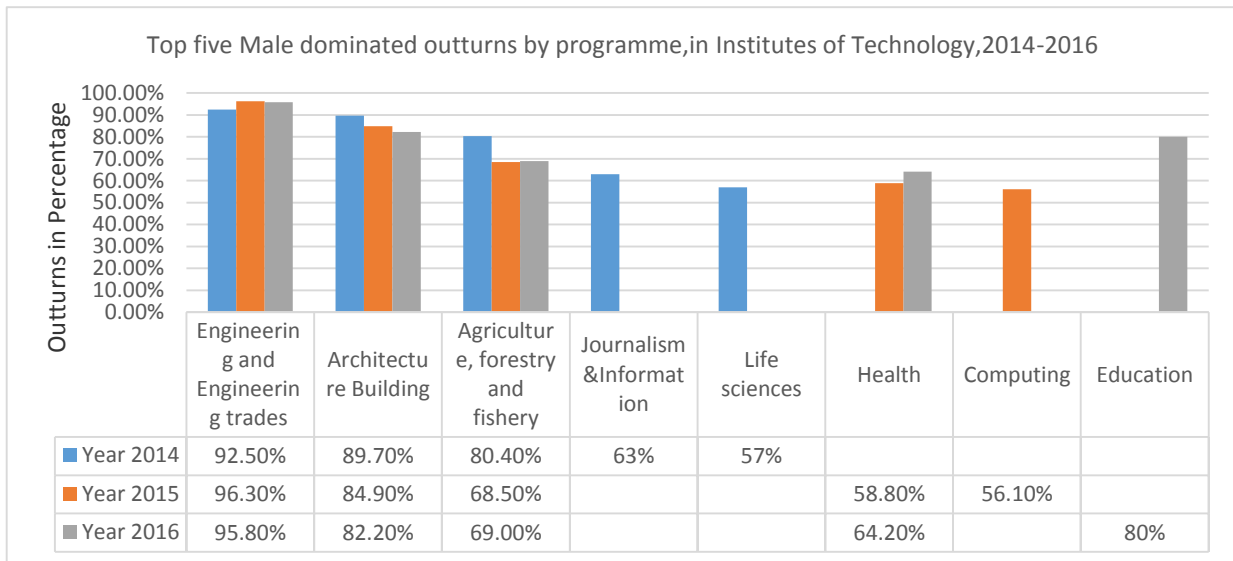
Programmes	Percentage		
	2014	2015	2016
Life Sciences	0.6	0.9	0
Physical Sciences	0.6	0.4	0.3
Journalism & Information	1.3	0	0
Health	0	0.3	0.3
Education	0	0	0.1

#### 2.4.4.3 Distribution of Outturns by Programme and Sex

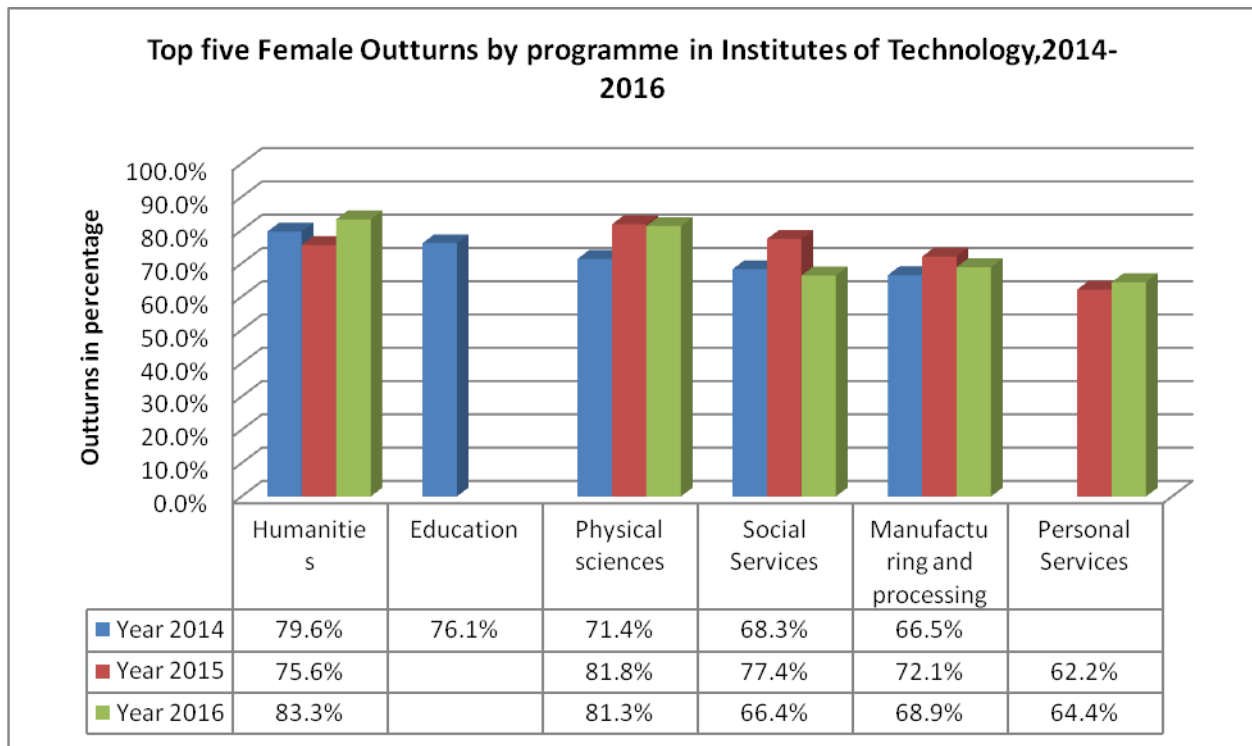
The analysis shows that males dominated in Engineering & Engineering Trades and in Architecture & Building during the period under review recording over 90 percent and 80 percent in each of the years respectively. Agriculture, Forestry & Fishery, Journalism and Information, Life Sciences, Health, Computing and Education completed the list of top five in each of the years respectively.

Female outturns were consistently higher in the following programmes: Humanities and Physical Sciences at averages of 80 and 78 per cent respectively followed by Social Sciences at 76 per cent and Manufacturing 69 percent. In 2014, additional programmes with high outturns for female graduates were: Education at 76.1 percent, Social Services at 68.3 percent and Manufacturing & Processing at 66.5 percent.

Figures 18 and 19 give a pictorial presentation of top five male and female dominated programmes for the three years under review.



**Figure 18:** Top five Male dominated outturns by Programme in Institutes of Technology, 2014-2016



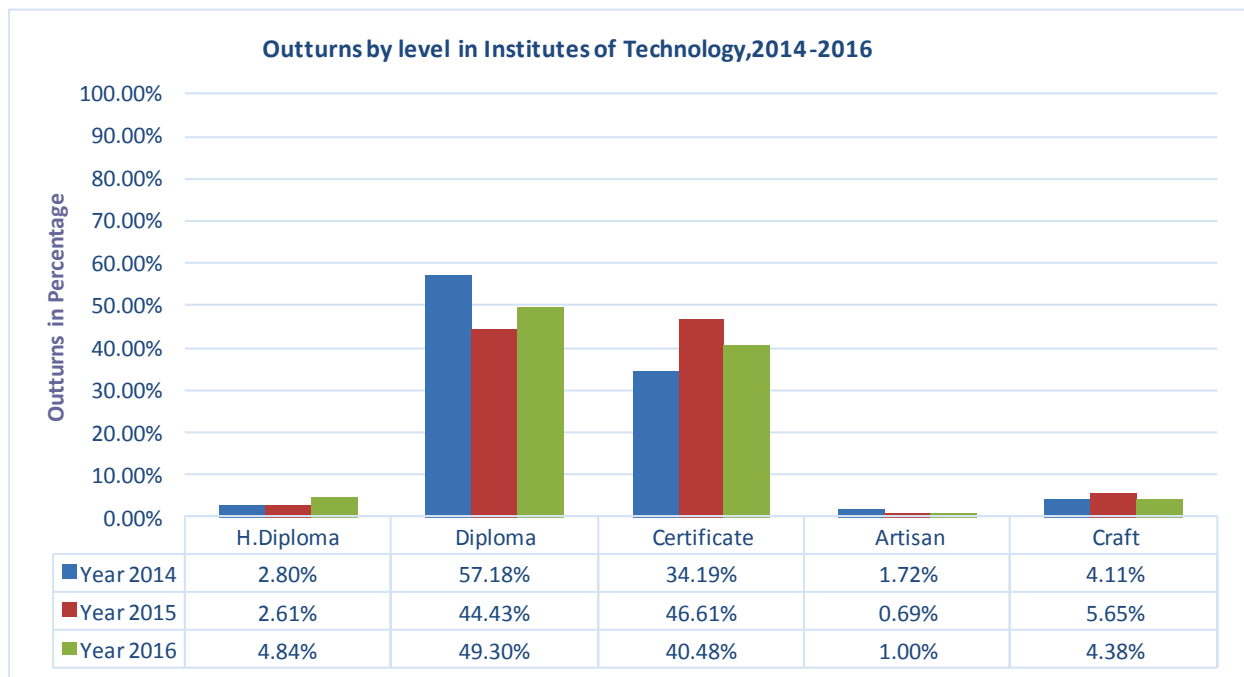
**Figure 19:** Top five Female dominated outturns by programme in Institutes of Technology, 2014-2016

#### 2.4.4.4 Overall change in Outturns per Skill Level

The survey revealed that total outturns increased by 43 percent between 2014 and 2015 but declined by 4 percent between 2015 and 2016. As per level, PhD outturns increased from 0.6 percent to 0.9 percent between 2014 and 2015 then declined to 0.6 percent in 2016. At Higher

Diploma level, outturns increased by 25 percent and 78 percent between 2014 and 2015, and between 2015 and 2016 respectively. At Diploma level, outturns increased by 11 percent between 2014 and 2015 and further increased by 6.5 percent between 2015 and 2016. The highest growth of 96 percent was recorded at Craft level between 2014 and 2015 as shown in Figure 20.

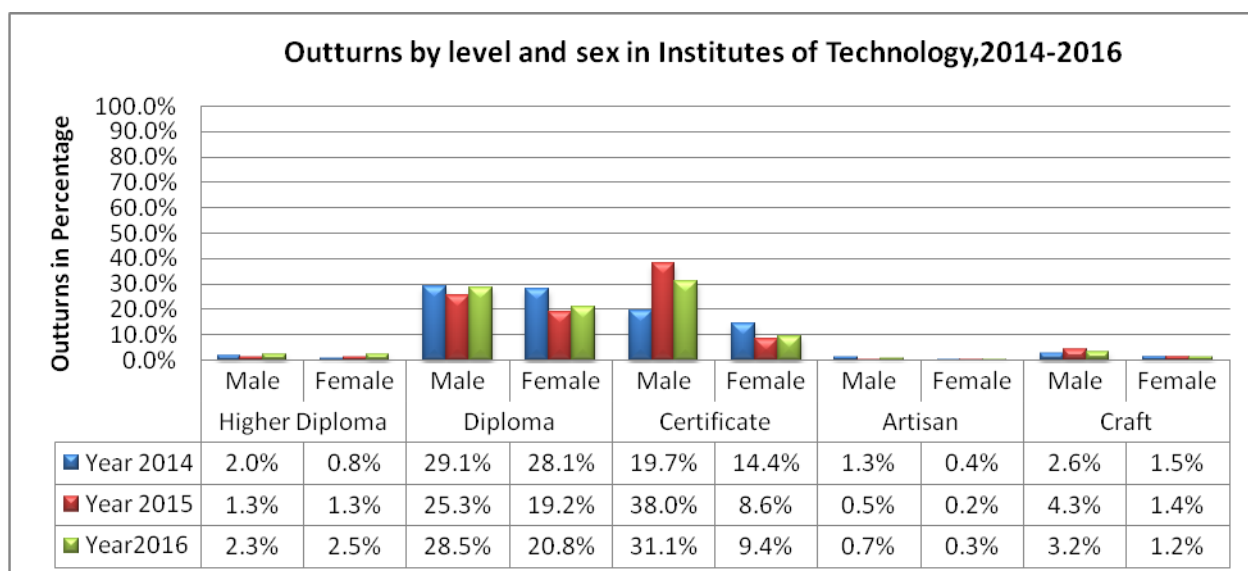
A general observation that can be made here is that in most of the levels, outturns recorded a fluctuating trend while in Higher Diploma level, an increase was recorded. Fluctuations were observed at Diploma, Certificate, Artisan and Craft levels during the period under review.



**Figure 20:** Outturns by level in Institutes of Technology, 2014 -2016

#### 2.4.4.5 Distribution of Outturns by Skill Level and Sex

During the period under review, it was observed that there was fluctuation of outturns in virtually all levels for both males and females. There were more male outturns than females at all levels as shown in Figure 21. The highest outturns were in Diploma and Certificate levels. Male outturns were generally higher for all levels.



**Figure 21:** Outturns by level and sex in Institutes of Technology, 2014-2016

#### 2.4.4.6: Summary of outturns by Year, Skill Level and Sex

From Table 17 it can be observed that the highest outturns during this period were in Diploma at 57.2 percent, 44.5 percent and 49.3 percent for the three years respectively followed by Certificate with 34.1 percent, 46.5 percent and 40.5 percent respectively. The other levels recorded less than 5 percent in each of the three years under review.

Male outturns surpassed those of females at all levels in the three years other than at Higher Diploma where female outturns surpassed males in years 2015 and 2016.

**Table 17:** Summary of Outturns by Year, Level and Sex in Institutes of Technology 2014- 2016

Year	Level										Sub-Total		Grand Total
	Higher Diploma		Diploma		Certificate		Artisan		Craft				
	M	F	M	F	M	F	M	F	M	F	M	F	
2014	67	29	996	964	677	495	46	13	90	51	1876	1552	3428
%	2.1	0.8	29.1	28.1	19.7	14.4	1.3	0.4	2.6	1.5	54.7	45.3	100
2015	62	66	1239	939	1862	423	24	10	209	68	3396	1506	4902
%	1.3	1.3	25.3	19.2	38.0	8.5	0.5	0.2	4.3	1.4	69.3	30.7	100.0
2016	108	120	1341	980	1465	444	34	13	149	57	3097	1614	4711
%	2.3	2.5	28.5	20.8	31.1	9.4	0.7	0.3	3.2	1.2	65.7	34.3	100
Total	237	215	3576	2883	4004	1362	104	36	448	176	8369	4672	13041
%	1.8	1.6	27.4	22.1	30.7	10.4	0.8	0.3	3.4	1.3	64.2	35.8	100



## **2.5 TECHNICAL TRAINING INSTITUTES**

Technical Training Institutes (TTIs) form an integral part of Kenya's technical, industrial and vocational education and training. Initially, these institutions were started as trade schools with the aim of creating a reservoir of indigenous technical personnel in the country. With the introduction of the 8-4-4 education system in 1985, the Secondary Technical Schools were eventually converted into the current Technical Training Institutes which kept on expanding from 20 TTIs in 2004 to 43 both public and private which are currently operating in the country.

### **2.5.1 Outturns by Programme, Level and Sex in Technical Training Institutes, 2014**

There were 6,253 outturns, out of which 51.9 percent were male and 48.1 percent female as shown in Table 18. The programme with the highest outturns was Business and Administration at 30.8 per cent, followed by Engineering and Engineering Trades at 23.4 percent and Personal Services at a distant third position representing 7.9 percent. Programmes with the lowest outturns were Environmental Protection, Physical Sciences and Education with less than 1 percent each.

Diploma level had the highest outturns at 62.1 percent, followed by Certificate at 18.5 percent while Higher Diploma and Proficiency levels had the lowest outturns at less than 1 percent each. At all levels males had higher outturns except at Proficiency and Certificate levels where they were at par with the female.

**Table 18: Distribution of Outturns by Programme, Level and Sex in Technical Training Institutes, 2014**

Programmes	Level												Sub-Total		Grand Total	%
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency					
	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	69	56	31	28	0	0	12	6	0	0	112	90	202	3.2
Architecture and Building	0	0	154	16	18	5	4	0	5	1	0	0	181	22	203	3.2
Business and Administration	0	0	571	816	165	242	5	12	41	77	0	0	782	1147	1929	30.8
Computing	0	0	116	91	35	61	0	0	10	5	10	33	171	190	361	5.8
Education	0	0	1	4	16	18	0	0	0	0	0	0	17	22	39	0.6
Engineering and Engineering Trades	0	0	550	100	39	13	298	66	329	69	0	0	1216	248	1464	23.4
Environmental Protection	0	0	12	12	0	0	0	0	0	0	0	0	12	12	24	0.4
Health	0	0	117	155	24	32	0	0	0	0	0	0	141	187	328	5.2
Humanities	0	0	79	121	50	53	0	0	0	0	0	0	129	174	303	4.8
Journalism and Information	0	0	24	47	22	53	0	0	0	4	0	0	46	104	150	2.4
Life Sciences	5	6	53	55	0	0	0	0	0	0	0	0	58	61	119	1.9
Manufacturing and Processing	0	0	24	80	3	14	2	17	17	79	0	0	46	190	236	3.8
Personal Services	0	0	151	189	42	62	3	32	5	7	0	0	201	290	491	7.9
Physical Sciences	0	0	1	0	13	15	0	0	3	1	0	0	17	16	33	0.5
Social Services	0	0	64	152	44	63	0	0	8	40	0	0	116	255	371	5.9
<b>Total</b>	<b>5</b>	<b>6</b>	<b>1986</b>	<b>1894</b>	<b>502</b>	<b>659</b>	<b>312</b>	<b>127</b>	<b>430</b>	<b>289</b>	<b>10</b>	<b>33</b>	<b>3245</b>	<b>3008</b>	<b>6253</b>	
%	0.1	0.1	31.8	30.3	8	10.5	5	2	6.9	4.6	0.2	0.5	51.9	48.1		<b>100</b>
Total percentage	0.2		62.1		18.5		7		11.5		0.7		<b>100</b>			

*\*Programme categories as per ISCED 2011 classification*

### **2.5.2 Outturns by Programme, Level and Sex in Technical Training Institutes, 2015**

There were 9,409 outturns, out of which 54 percent were male and 46 percent female as shown in Table 19. The programme with the highest outturns was Engineering and Engineering Trades at 27.2 per cent, followed by Business and Administration at 23.3 percent and Computing at a distant third position representing 9.7 percent. Programmes with the lowest outturns were Environmental Protection, Physical Sciences, Security Services, and Social and Behavioral Sciences which all had less than 1 percent each.

Diploma and Certificate levels had the highest outturns across all programmes at 47.4 and 22.4 percent respectively. At all levels males had higher outturns except at Higher Diploma and Certificate levels where it was vice versa.

**Table 19: Distribution of Outturns by Programme, Level and Sex in Technical Training Institutes, 2015**

	LEVEL												Sub-Total	Grand Total	%	
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency					
	M	F	M	F	M	F	M	F	M	F	M	F				
Agriculture, Forestry and Fishery	0	0	114	110	54	58	7	5	24	27	0	0	199	200	399	4.2
Architecture and Building	0	0	317	45	39	8	6	0	55	0	0	0	417	53	470	5
Business and Administration	0	11	590	770	248	334	12	7	97	122	0	0	952	1244	2196	23.3
Computing	0	0	196	157	188	212	0	0	102	78	0	0	468	447	915	9.7
Education	0	0	14	29	51	58	0	0	0	0	0	0	65	87	152	1.6
Engineering and Engineering Trades	0	0	672	235	70	19	578	153	359	167	11	1	1987	575	2562	27.2
Environmental Protection	0	0	14	5	0	0	0	0	0	0	0	0	14	5	19	0.2
Health	0	0	113	135	29	52	0	0	0	0	0	0	142	187	329	3.5
Humanities	0	0	95	127	102	170	0	0	0	0	0	0	197	297	494	5.3
Journalism and Information	2	0	52	72	25	72	0	0	19	20	0	0	97	164	261	2.8
Life Sciences	2	5	52	81	10	4	0	0	0	0	0	0	64	90	154	1.6
Manufacturing and Processing	0	0	48	100	5	14	8	23	81	176	0	0	142	313	455	4.8
Personal Services	0	0	149	231	32	65	6	45	5	28	0	0	192	369	561	6
Physical Sciences	0	0	5	0	11	9	0	0	1	1	0	0	17	10	27	0.3
Security Services	0	0	0	0	19	20	0	0	0	0	0	0	19	20	39	0.4

Social and behavioral Sciences	0	0	7	12	1	1	0	0	0	0	0	0	8	13	21	0.2
Social Services	0	0	50	139	42	81	0	0	11	32	0	0	103	252	355	3.8
<b>Total</b>	<b>4</b>	<b>16</b>	<b>2361</b>	<b>2101</b>	<b>926</b>	<b>1177</b>	<b>585</b>	<b>217</b>	<b>754</b>	<b>651</b>	<b>11</b>	<b>1</b>	<b>5083</b>	<b>4326</b>	9409	
%	0	0.2	25.1	22.3	9.8	12.5	6.2	2.3	8	6.9	0.1	0	54	46		<b>100</b>
Total percentage	0.2		47.4		22.3		8.5		14.9		0.1		<b>100</b>			

***\*Programme categories as per ISCED 2011 classification***

### 2.5.3 Outturns by Programme, Level and Sex in Technical Training Institutes, 2016

There were 10,044 outturns, out of which 53.6 percent were male and 46.4 percent female as shown in Table 20. The programme with the highest outturns was Engineering and Engineering Trades at 25.6 per cent, followed by Business and Administration at 23.7percent and Computing at a distant third position representing 7.3 percent. Programmes with the lowest outturns were Security Services, Environmental Protection, Physical Sciences, Social and Behavioral Sciences and Life Sciences which all had less than 1 percent.

Diploma level had the highest outturns at 47.4 percent followed by Certificate level at 22.1 percent while Proficiency level had the lowest outturns at 1 percent. Males had higher outturns at Diploma, Craft, Artisan and Proficiency levels while females outturns were higher at Higher Diploma and Certificate levels.

**Table 20: Distribution of Outturns by Programme, Level and Sex in Technical Training Institutes, 2016**

Programmes	LEVEL												Total	Grand	%	
	Higher		Diploma		Certificate		Artisan		Craft		Proficiency					
	M	F	M	F	M	F	M	F	M	F	M	F				
Agriculture,	0	0	164	103	78	35	0	0	46	29	0	0	288	167	<b>455</b>	4.5
Architecture and	0	0	431	65	33	0	1	102	10	0	0	0	475	167	<b>642</b>	6.4
Business and	1	2	709	795	241	351	2	9	98	174	0	0	1051	1331	<b>2382</b>	23.7
Computing	0	0	210	152	82	140	0	0	53	40	35	20	380	352	<b>732</b>	7.3
Education	0	0	0	8	49	59	0	0	0	0	0	0	49	67	<b>116</b>	1.2
Engineering and	0	0	835	182	133	14	507	151	604	99	31	11	2110	457	<b>2567</b>	25.6
Environmental	0	0	21	14	0	0	0	0	0	0	0	0	21	14	<b>35</b>	0.3
Health	0	0	172	393	53	108	0	0	0	0	0	0	225	501	<b>726</b>	7.2
Humanities	0	0	81	137	124	203	0	0	0	0	0	0	205	340	<b>545</b>	5.4
Journalism &	0	0	33	53	31	97	0	0	8	11	0	0	72	161	<b>233</b>	2.3
Life Sciences	5	8	38	38	0	0	0	0	0	0	0	0	43	46	<b>89</b>	0.9
Manufacturing	0	0	23	99	3	4	3	12	56	124	0	0	85	239	<b>324</b>	3.2
Personal Services	163	236	0	0	39	164	0	10	5	31	0	0	207	441	<b>648</b>	6.5
Physical Sciences	2	3	0	0	12	36	0	0	1	0	0	0	15	39	<b>54</b>	0.5
Security Services	0	0	0	0	20	13	0	0	0	0	0	0	20	13	<b>33</b>	0.3
Social and	12	21	0	0	0	4	0	0	0	0	0	0	12	25	<b>37</b>	0.4
Social Services	82	209	0	0	30	71	0	0	12	22	0	0	124	302	<b>426</b>	4.2
Totals	265	479	2717	2039	928	1299	513	284	893	530	66	31	5382	4662	10044	
%	2.6%	4.8%	27.1%	20.3%	9.2%	12.9%	5.1%	2.8%	8.9%	5.3%	0.7%	0.3%	53.6%	46.4%		<b>100</b>
Total percentage	7.4		47.4		22.1		7.9		14.2		1		<b>100</b>			

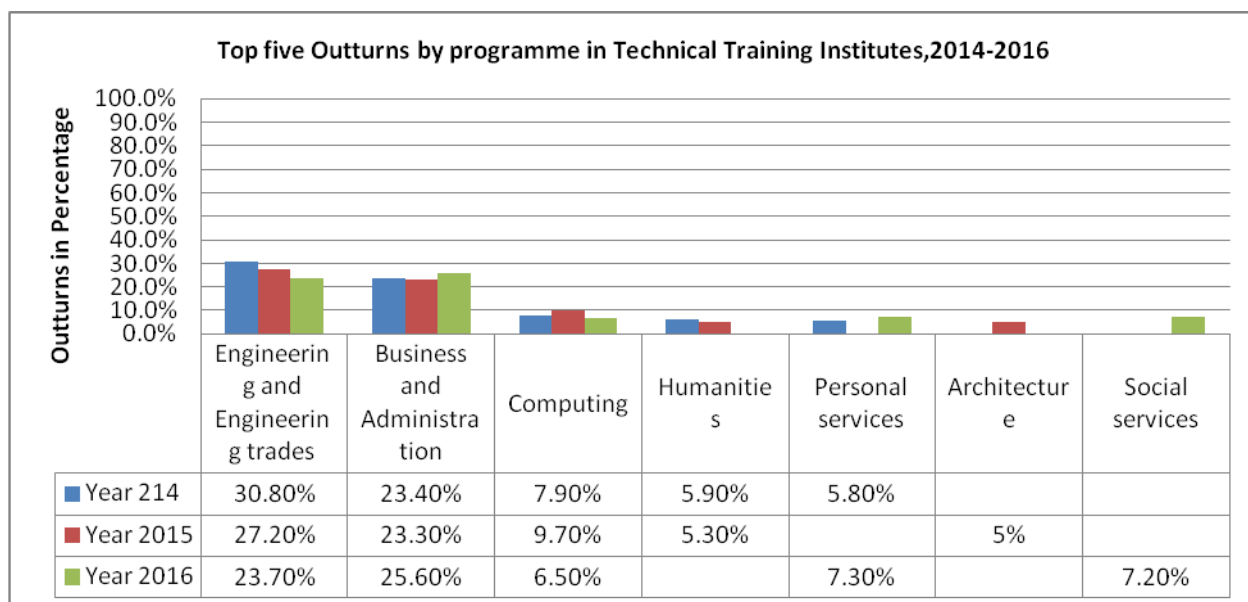
**\*Programme categories as per ISCED 2011 classification**

## 2.5.4 Trend Analysis on Outturns in Technical Training Institutes, 2014 - 2016

This section presents trend analysis of outturns by skill level, programme and sex for Technical Training Institutes, in years 2014 to 2016. A total of 17 programmes were captured under this category of institutions. The following skill levels were recorded: Higher Diploma, Diploma, Certificate, Artisan, Craft and Proficiency.

### 2.5.4.1 Programmes with Highest Outturns

During the period under review, Engineering & Engineering Trades programme had a slightly higher level of outturns than Business & Administration. Engineering & Engineering Trades had an average outturn score of 27.2 percent while Business & Administration had 24.1 percent. Computing was third position for two years running at an average of 9 percent.



**Figure 22:** Top five Outturns by Programme in Technical Training Institutes, 2014-2016

### 2.5.4.2 Programmes with Lowest Outturns

The table below indicates the programmes that performed worst in the 3-year period, occupying the Bottom 3 positions.

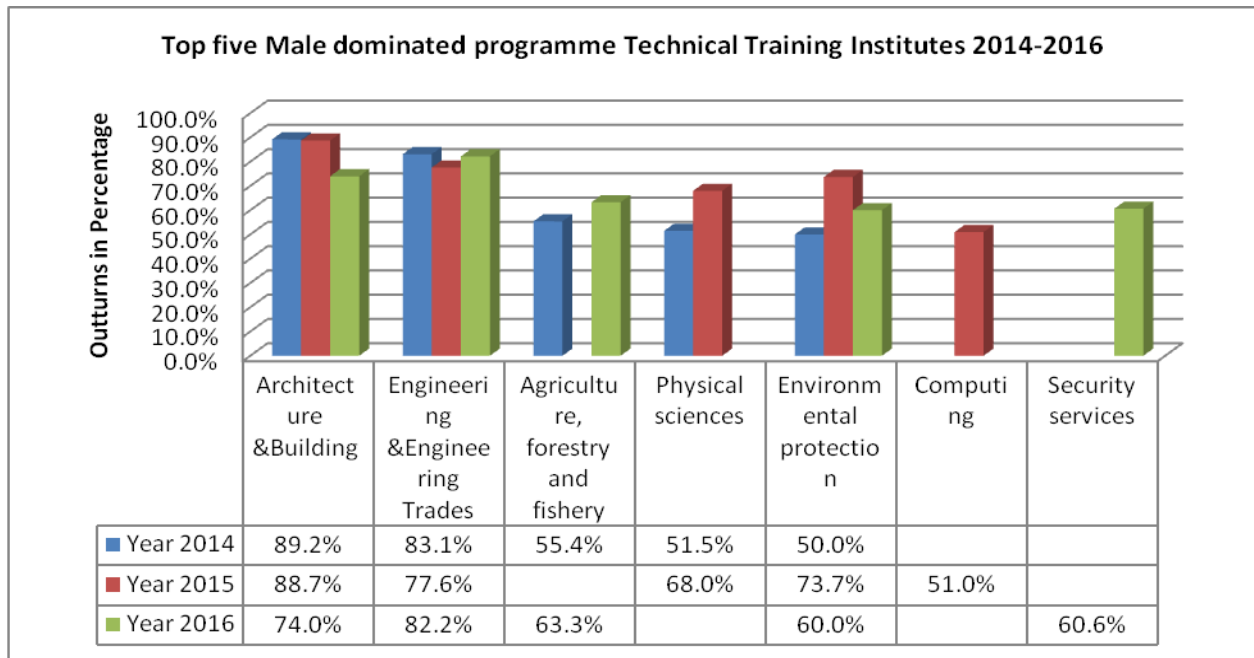
**Table 21:** Distribution of Programmes with the least Outturns by Year in Technical Training Institutes

Programme	Percentage		
	2014	2015	2016
Social and behavioral Sciences	0	0.2	0.4
Security Services	0	0.4	0.3
Environmental Protection	0.4	0.2	0.3
Physical Sciences	0.5	0.3	0.5
Journalism & Information	0	0	2.3
Education	0.6	1.6	1.2



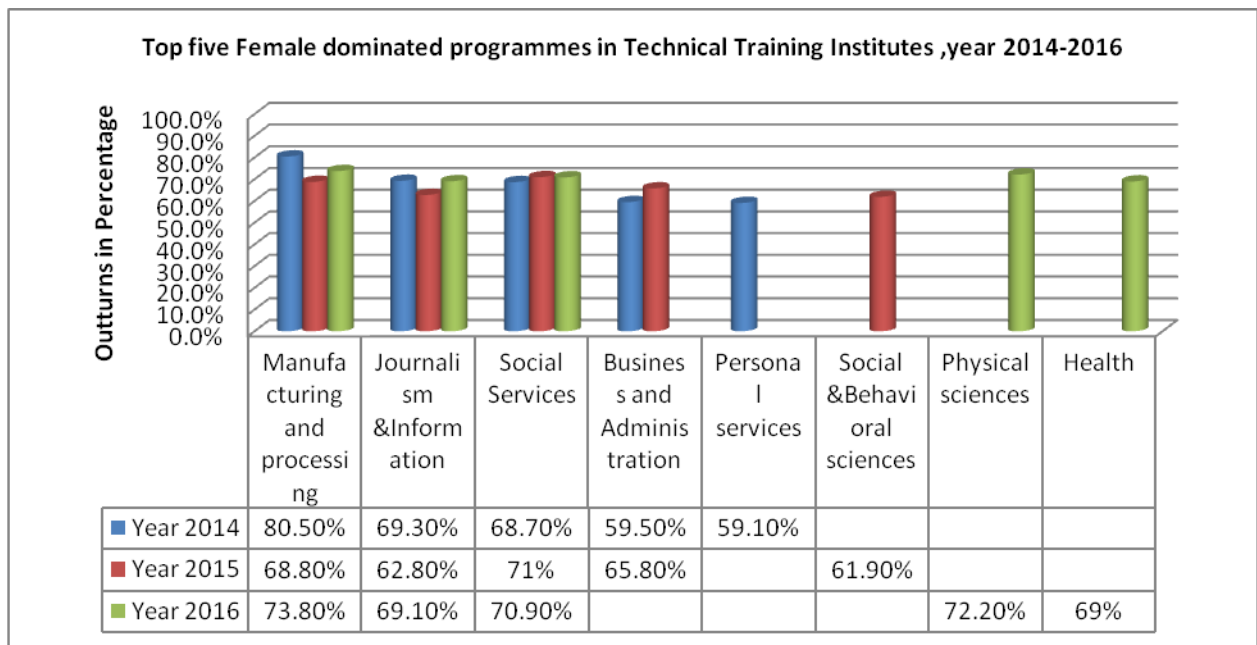
### 2.5.4.3 Distribution of Outturns by Programme and Sex

During the period under review, males dominated in Architecture & Building as well as Engineering & Engineering Trades programmes for the 3 years running. Male outturn share in Architecture & Building for the three year ranged from 74 to 89.2 percent while Engineering & Engineering Trades outturns ranged from 76.7 to 83.1 percent. In third position was Environmental Protection ranging from 50 to 73.7 percent. The rest had inconsistent outturns during the period under review as showed in Figure 23.



**Figure 23:** Top five male dominated Programmes in Technical Training Institutes, 2014-2016

Females dominated in Manufacturing & Processing with outturns ranging from 68.80 to 80.5 percent, followed by Social Services ranging from 68.7 to 71 percent and Journalism & Information, 62.8 to 69.3 percent. The rest had inconsistent outturns during the period under review as shown in Figure 24.

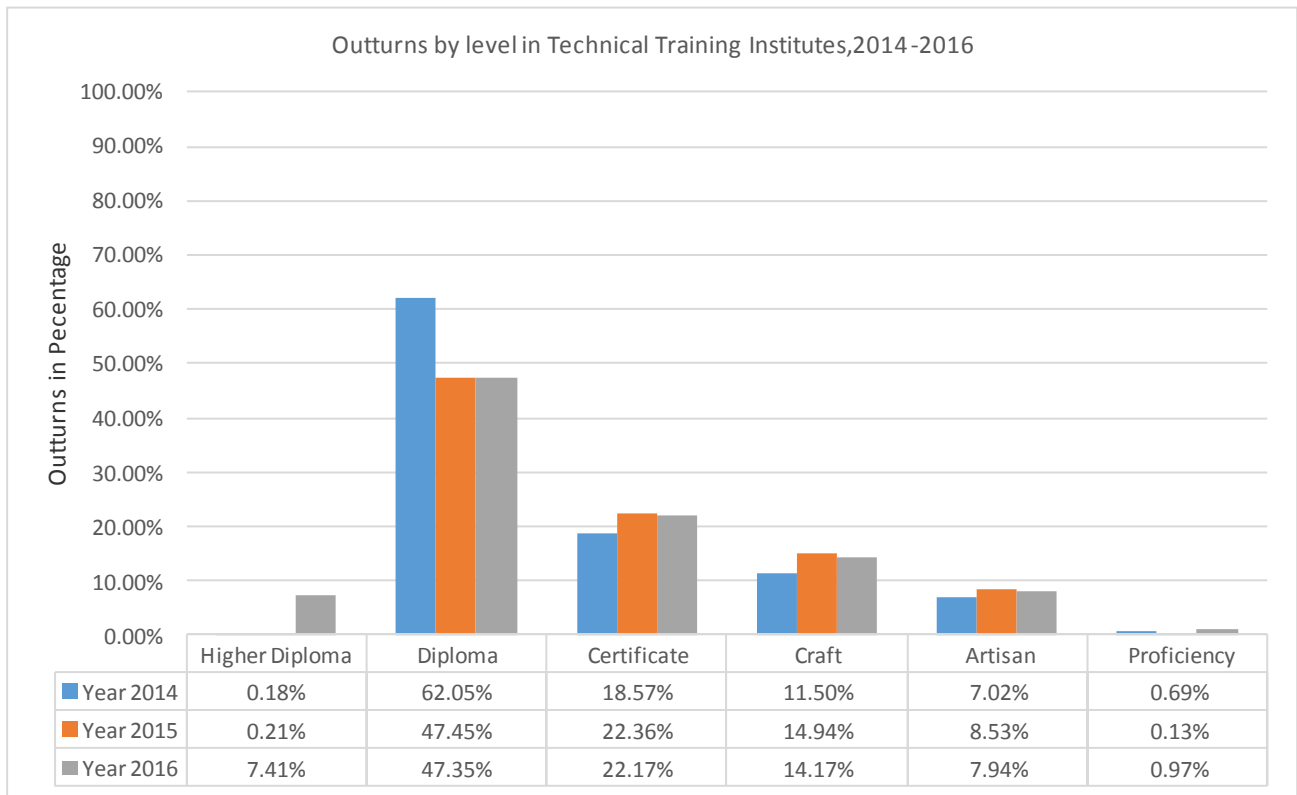


**Figure 24:** Top five Female dominated programmes in Technical Training Institutes, 2014-2016

#### 2.5.4.4 Overall change in Outturns per Skill Level

During the period under review, outturns increased by 50.47 percent between 2014 and 2015 and by 6.7 percent between 2015 and 2016.

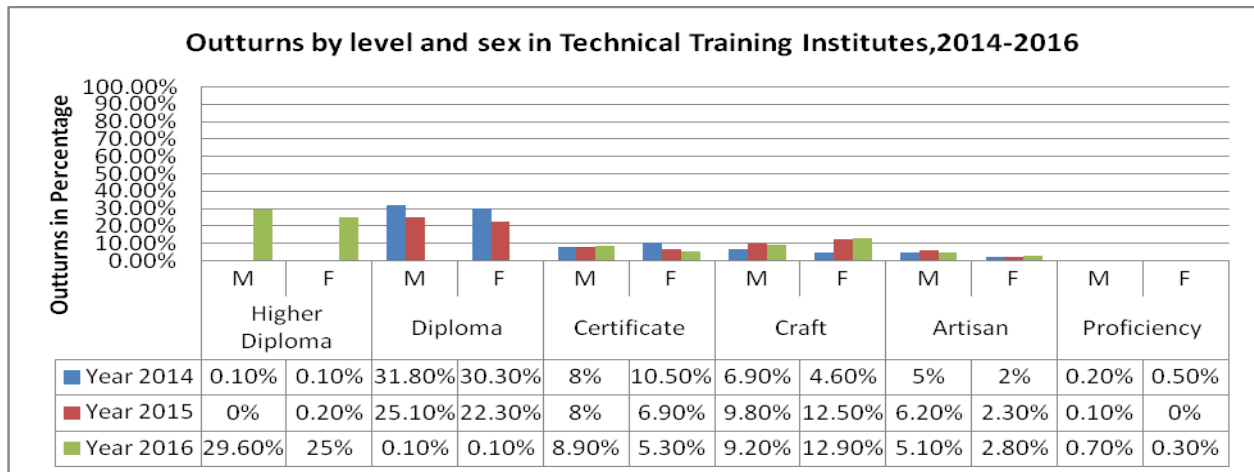
Figure 25 shows that outturns at Diploma level registered a decline in the three years under review. However, outturns at Certificate, Artisan and Craft levels registered a slight increase in year 2015 and decreased slightly in year 2016. There was an unusual increase at Higher Diploma level in year 2016 registering 7.41 percent against less than 1 percent in the previous two years.



**Figure 25:** Outturns by Level in Technical Training Institutes, 2014-2016

#### 2.5.4.5 Distribution of Outturns by Skill Level and Sex

In the period under review, it was observed that only Certificate, Artisan and Craft levels had outturns consistently. There were no outturns in Higher Diploma in the years 2014 and 2015 and that was the same case with Diploma level for the year 2016 as shown in Figure 26.



**Figure 26:** Outturns by level and sex in Technical Training Institutes, 2014-2016

### 2.5.4.6: Summary of outturns by Year, Skill Level and Sex

From Table 22 a steady increase of outturns was observed from one year to the next. Diploma level had the highest contribution at 51 percent, followed by Certificate at 18.6 percent and Craft at 16.5 percent. The other three levels were Artisan at 7.9, Higher Diploma at 3 percent and Proficiency at 0.6 percent.

Female outturns were lower at virtually all levels in all the three years. It's only at Certificate level where female outturns slightly surpassed males in year 2014 and 2016, and Craft in 2015 and 2016.

**Table 22:** Summary of Outturns by Year, Level and Sex in Technical Training Institutes, 2014-2016

Programme	Level												Total		Grand Total
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency				
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
2014	5	6	1986	1894	502	659	312	127	430	289	10	33	324	300	6253
%	0.1	0.1	31.8	30.3	8.0	10.5	5.0	2.0	6.9	4.6	0.2	0.5	51.9	48.1	
2015	4	16	2361	2101	754	651	585	217	926	1177	11	1	508	432	9409
%	0.0	0.2	25.1	22.3	8.0	6.9	6.2	2.3	9.8	12.5	0.1	0.0	54.0	46.0	
2016	26	479	2717	2039	928	1299	513	284	893	530	66	31	538	466	10044
%	2.6	4.8	27.1	20.3	9.2	12.9	5.1	2.8	8.9	5.3	0.7	0.3	53.6	46.4	
Total	27	501	7064	6034	2184	2609	1410	628	2249	1996	87	65	137	119	25706
%	1.1	1.9	27.5	23.5	8.5	10.1	5.5	2.4	8.7	7.8	0.3	0.3	53.3	46.7	
	<b>3.0</b>		<b>51</b>		<b>18.6</b>		<b>7.9</b>		<b>16.5</b>		<b>0.6</b>		<b>100</b>		

## 2.6 TEACHER TRAINING COLLEGES

Teacher Training Colleges offer very important training to those willing to join the Kenya labour market as teachers for both Primary and Secondary schools. There are five teacher education programmes in Kenya: -

- i. The Early Childhood Development and Education (ECDE), a teacher education programme in which teachers are trained through in-service courses in County centres for

Early Childhood Education. The National Centre for Early Childhood Education (NACECE) develops the curriculum, trains trainers and supervisors, and conducts monitoring and evaluation.

- ii. Secondary teacher education is provided at the diploma and degree levels in diploma teacher training colleges and Universities respectively.
- iii. Technical teacher education is offered at the Kenya Technical Teachers College in Nairobi which trains diploma level teachers for secondary schools, technical training institutes, primary teachers' colleges, institutes of technology and vocational polytechnics.
- iv. Special needs education teacher education is provided to professionally qualified practising teachers through a two-year diploma programme at the Kenya Institute of Special Education (KISE).
- v. Primary Teacher Education (PTE) which is provided in 18 certificate level colleges through a two-year, residential programme.

### 2.6.1 Outturns by Programme, Level and Sex in Teacher Training Colleges, 2014

Table 23 shows that the total outturns captured were 21,573 of which female outturns accounted for 56.9 percent and male 43.1 per cent. Education programme had the highest outturns accounting for 97.9 percent of the total outturns followed by Business and Administration at a mere 1.5 percent. The rest of the programmes recorded less than 1 percent. Female outturns outnumbered male outturns in all programmes except in Computing and Humanities, where male outturns surpassed female by small margins.

Certificate level had the highest outturns accounting for 78.5 percent, out of which females were 43.9 and males 34.6 percent. Those with Diploma level accounted for 20.9 percent, with 8.1 and 12.8 percent representing male and female respectively. Female outturns were the majority at all levels except at Proficiency level.

**Table 23 :** *Distribution of Outturns by Programme, Level and Sex in Teacher Training Colleges, 2014*

Programme	LEVEL										Grand Total	%
	Diploma		Certificate		Artisan		Proficiency		Sub-Total			
	M	F	M	F	M	F	M	F	M	F		
Business & Administration	134	183	8	4	0	0	0	0	142	187	329	1.5
Computing	1	1	19	6	0	0	0	0	20	7	27	0.1
Education	1581	2541	7439	9434	0	0	92	27	9112	12002	21114	97.9

Humanities	1	0	0	0	0	0	0	0	1	0	1	0
Manufacturing and Processing	0	0	2	13	1	12	0	0	3	25	28	0.2
Physical Sciences	4	11	0	0	0	0	0	0	4	11	15	0.1
Social and Behavioral Sciences	2	5	0	4	0	0	0	0	2	9	11	0.1
Social Services	20	28	0	0	0	0	0	0	20	28	48	0.2
<b>Total</b>	<b>1743</b>	<b>2769</b>	<b>7468</b>	<b>9461</b>	<b>1</b>	<b>12</b>	<b>92</b>	<b>27</b>	<b>9304</b>	<b>12269</b>	<b>21573</b>	<b>100</b>
<b>%</b>	<b>8.08</b>	<b>12.84</b>	<b>34.62</b>	<b>43.86</b>	<b>0</b>	<b>0.06</b>	<b>0.43</b>	<b>0.13</b>	<b>43.13</b>	<b>56.87</b>	<b>100</b>	
<b>Total percentage</b>	<b>20.9</b>		<b>78.5</b>		<b>0.06</b>		<b>0.56</b>		<b>100</b>			

**\*Programme categories as per ISCED 2011 classification**

## 2.6.2 Outturns by Programme, Level and Sex in Teacher Training Colleges, 2015

Table 24 shows that the total outturns captured were 21,643 with female outturns accounting for 58.4 percent and male 41.6 percent. It can be observed that Education had the highest outturns accounting for 97.2 percent followed Business and Administration at 1.8 percent, while the rest of the programmes had less than 1 percent. Female outturns outnumbered male in all programmes except in Personal Services where males recorded a slightly higher outturn level than females.

Certificate level had the highest outturns accounting for 76.3 percent followed by Diploma at 22.9 percent, comprising of 9.4 and 13.5 percent for male and female respectively. Female outturns were higher at all levels.

**Table 24:** Distribution of Outturns by Programme, Level and Sex in Teacher Training Colleges, 2015

Programme	Level								Grand Total	%
	Diploma		Certificate		Proficiency		Total			
	M	F	M	F	M	F	M	F		
Business & Administration	177	219	2	28	0	0	179	221	400	1.8
Computing	3	0	49	54	0	0	52	54	106	0.5
Education	1837	2661	6884	9459	25	172	8746	12292	21038	97.2
Humanities	0	1	4	15	0	0	4	16	20	0.1
Manufacturing & Processing	0	0	1	14	0	0	1	14	15	0.1
Personal Services	20	18	0	0	0	0	20	18	38	0.2
Physical Sciences	3	9	0	0	0	0	3	9	12	0.1
Social & Behavioral Sciences	4	10	0	0	0	0	4	10	14	0.1
<b>Total</b>	<b>2044</b>	<b>2918</b>	<b>6940</b>	<b>9570</b>	<b>25</b>	<b>172</b>	<b>9009</b>	<b>12634</b>	<b>21643</b>	<b>100</b>
<b>%</b>	<b>9.44</b>	<b>13.48</b>	<b>32.07</b>	<b>44.22</b>	<b>0.12</b>	<b>0.79</b>	<b>41.63</b>	<b>58.37</b>		
<b>Total Percentage</b>	<b>22.9</b>		<b>76.3</b>		<b>0.91</b>		<b>100</b>			

**\*Programme categories as per ISCED 2011 classification**

### 2.6.3 Outturns by Programme, Level and Sex in Teacher Training Colleges, 2016

Table 25 shows that the total outturns captured were 20,537 of which female were 60.9 percent and male 39.1 percent. Education and Business & Administration programmes had the highest outturns at 97.4 and 1.6 percent respectively, while the rest of the programmes had less than 1 percent. Female outturns were higher in all programmes.

Certificate level accounted for 78.1 percent, out of which male and female were 30.9 and 47.2 percent respectively. Outturns at diploma level accounted for 20.6 percent, with 7.9 and 12.7 percent representing male and female respectively. Female outturns were higher at all levels.

**Table 25:** Distribution of Outturns by Programme, Level and Sex in Teacher Training Colleges, 2016

Programme	LEVEL											
	Diploma		Certificate		Artisan		Proficiency		Sub-Total		Grand Total	%
	M	F	M	F	M	F	M	F	M	F		
Arts	0	0	0	8	0	0	0	0	0	8	8	0
Business & Administration	118	141	8	58	0	0	0	0	126	199	325	1.6
Computing	0	3	11	11	0	0	0	0	11	14	25	0.1
Education	1469	2405	6317	9589	0	0	53	179	7839	12173	20012	97.5
Health	0	0	0	0	0	0	0	6	0	6	6	0
Humanities	0	4	1	5	0	0	0	0	1	9	10	0
Manufacturing & Processing	0	0	15	12	2	24	0	0	17	36	53	0.3
Personal Services	16	26	0	0	0	0	0	0	16	26	42	0.2
Physical Sciences	0	10	0	0	0	0	0	0	0	10	10	0
Social & Behavioral Sciences	2	8	3	15	0	0	0	0	5	23	28	0.1
Social Services	18	19	0	0	0	0	0	0	18	19	37	0.2
<b>Total</b>	<b>1623</b>	<b>2616</b>	<b>6349</b>	<b>9698</b>	<b>1</b>	<b>12</b>	<b>53</b>	<b>185</b>	<b>8026</b>	<b>12511</b>	<b>20537</b>	<b>100</b>
<b>%</b>	<b>7.9</b>	<b>12.74</b>	<b>30.91</b>	<b>47.22</b>	<b>0</b>	<b>0.06</b>	<b>0.26</b>	<b>0.9</b>	<b>39.07</b>	<b>60.92</b>		
<b>Total Percentage</b>	<b>20.64</b>		<b>78.13</b>		<b>0.06</b>		<b>1.16</b>				<b>100</b>	

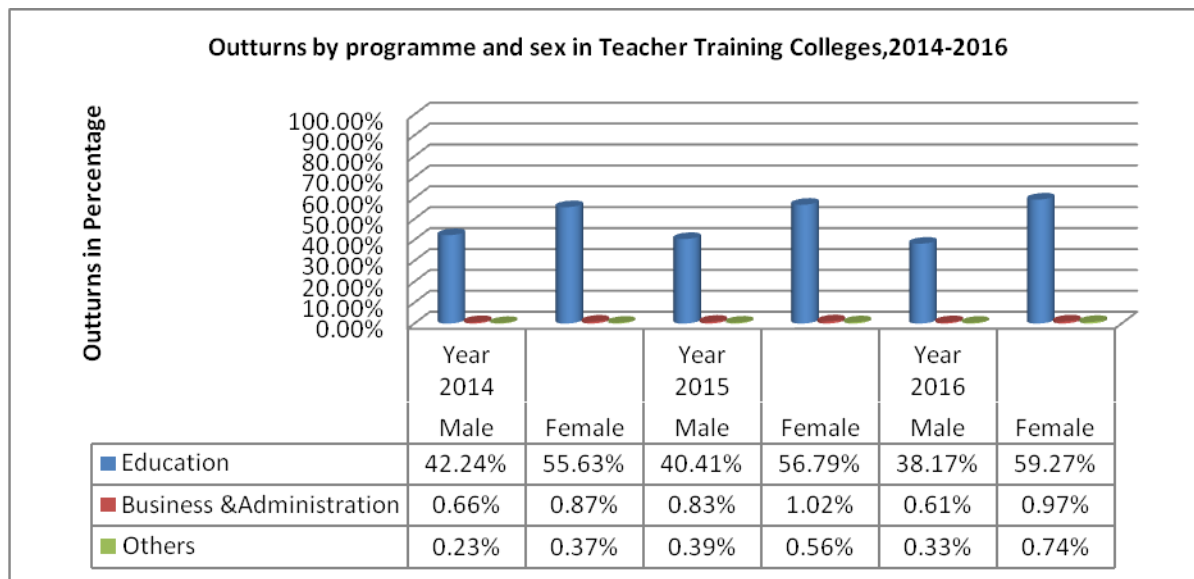
## 2.6.4 Trend Analysis on Outturns in Teacher Training Colleges, 2014-2016

This section presents trend analysis of outturns by programme, skill level and sex for Teacher Training Colleges, in years 2014 to 2016. The following skill levels were recorded: Diploma, Certificate, Artisan and Proficiency.

Only three programmes were captured under this category of institutions. However, two of the programmes had insignificant outturns, hence analysis in this category does not feature programmes with highest or lowest outturns.

### 2.6.4.1 Distribution of Outturns by Programme and Sex

During the period under review, it was observed that only Education programme had significant numbers for both males and females. The rest of the programmes had negligible outturns. For all the three years, female outturns surpassed those of males as indicated in Figure 27.

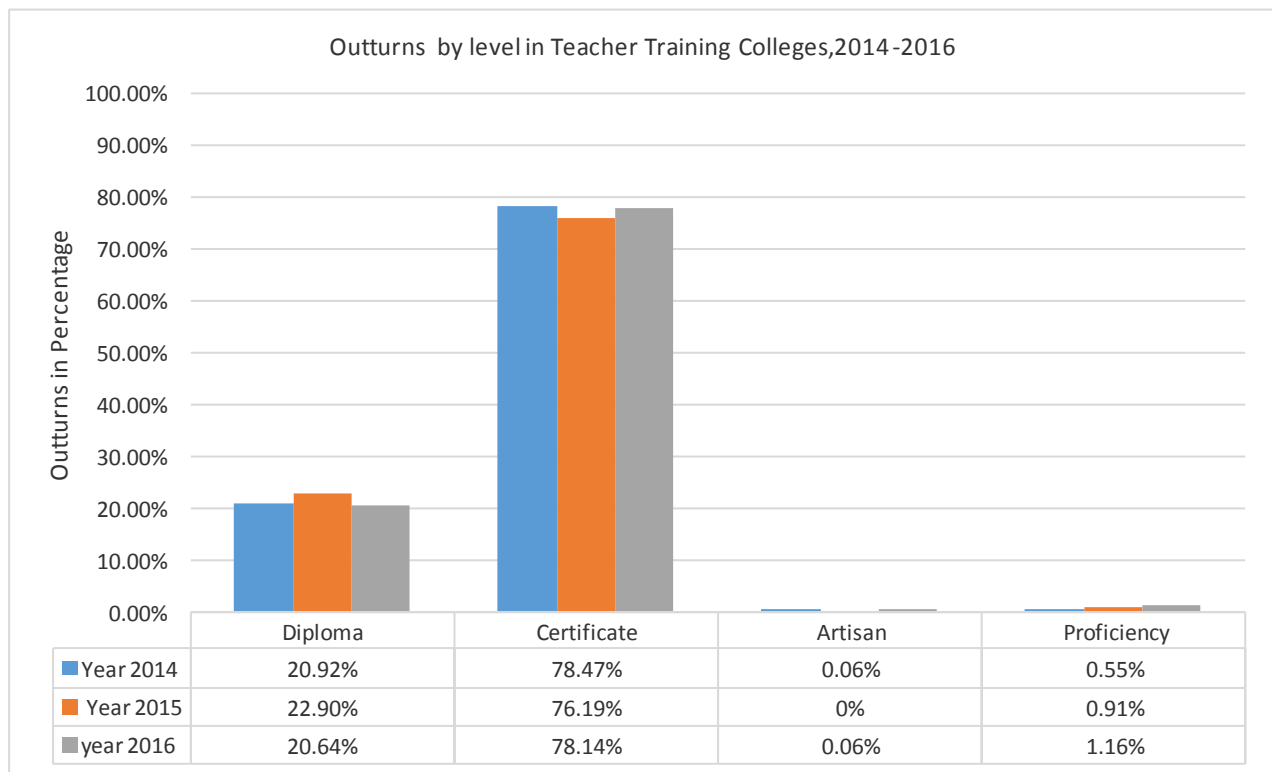


*Figure 27: Outturns by Programme and Sex in Teacher Training Colleges, 2014-2016*

### 2.6.4.2 Overall change in Outturns per Skill Level

The survey revealed that out of the total outturns per level, Diploma outturns increased from 20.9 to 22.9 percent from 2014 to 2015 and decreased to 20.6 percent in 2016. At the Certificate level, outturns decreased from 78.5 to 76.2 percent from 2014 to 2015 and increased to 78.1 percent in 2016. At Artisan level, a constant figure was reported in 2014 and 2016 but no outturns were captured for 2015. At Proficiency level, outturns increased from 0.55 to 0.91 percent from 2014 to 2015 and 1.16 percent increase in 2016 as shown in Figure 28.





**Figure 28:** Outturns by level in Teacher Training Colleges, 2014-2016

### 2.6.4.3: Summary of Outturns by Year, Skill Level and Sex

Table 26 indicates that those who completed with Certificate level award registered the highest outturns accounting for more than 77.5 percent of all the outturns in each of the three years and Diploma taking second position with about 21.5 percent in each of the years under review while Artisan level recorded the least outturns.

Female outturns were more than males at Diploma, Certificate, Artisan and Proficiency levels in all the three years other than in 2014 where male outturns were more than females at Proficiency level.

**Table 26:** Summary of Outturns by Year, Level and Sex in Teacher Training Colleges, 2014-2016

Year	LEVEL										Grand Total
	Diploma		Certificate		Artisan		Proficiency		Sub-Total		
	M	F	M	F	M	F	M	F	M	F	
2014	1743	2769	7468	9461	1	12	92	27	9304	12269	21573
%	8.08	12.8	34.62	43.86	0	0.1	0.4	0.1	43.1	56.86	100
2015	2044	2918	6940	9570	0	0	25	172	9009	12660	21669
%	9.44	13.48	32.07	44.2	0	0	0.12	0.79	41.63	58.47	100
2016	1623	2616	6349	9698	1	12	53	185	8026	12511	20537
%	7.9	12.78	30.91	47.22	0.01	0.06	0.26	0.9	39.08	60.96	100

Total	5410	8303	20757	28729	2	24	170	384	26339	37440	63779
	8.48	13.02	32.55	45.04	0	0.04	0.27	0.6	41.3	58.7	100
%	21.5		77.59		0.04		0.87		100		

*\*Programme categories as per ISCED 2011 classification*

## 2.7 MEDICAL TRAINING COLLEGES

The training of nurses is enshrined in an Act of Parliament that provides for the training, registration, enrolment and licensing of nurses; to regulate their conduct and to ensure their maximum participation in the health care of the citizenry.

The Nursing Council of Kenya has approved training of nurses at 3 levels, which include: Certificate, Diploma and Degree. Training at Diploma level is categorized into basic and post basic training. Post basic training is specialized and is undertaken only if the student has previously acquired a basic diploma.

Medical Training Colleges currently offer more than 50 courses at Certificate, Diploma and Post-Basic diploma levels. The main programmes offered include: Clinical Medicine (basic and Higher Diploma), Community Nutrition (Certificate and Diploma), Community Oral Health (Diploma), Dental Technology (Diploma), Environmental Health (Diploma and Higher Diploma), Health Education (Higher Diploma) and Health Records and Information (Certificate and Diploma).

Others include: Medical Education (Higher Diploma), Medical Engineering (Certificate, Diploma and Higher Diploma), Medical Imaging Science (Diploma and Higher Diploma), Medical Laboratory Science (Diploma and Higher Diploma), Nursing (Certificate, Diploma and Higher Diploma), Occupational Therapy (Diploma), Optometry Technology (Diploma), Orthopedic Technology (Diploma), Pharmacy (Diploma and Higher Diploma), Physiotherapy (Diploma), Orthopedic Plaster Technology (Certificate), Registered Nursing-Mental Health and Psychiatry (Diploma), Kenya Registered Neonatal Nurse (KRNeON) and Kenya Registered Accident and Emergency Nurse (KRAEN).

### 2.7.1 Outturns by Programme, Level and Sex in Medical Training Colleges, 2014

Table 27 shows that there was a total of 7,714 outturns captured for the year 2014 comprising of 57.7 percent female and 42.3 percent male. Health programme recorded the highest outturns at 81.7 percent followed by Journalism and Information and Environmental Protection programmes at 6.2 and 5.4 percent respectively. The rest of the programmes had less than 1 percent each.

Female outturns outnumbered their male counterparts in all programmes except in Engineering and Engineering Trades and Environmental Protection.

Diploma level had the highest outturns accounting for 81.3 percent comprising of 35.3 percent male and 46 percent female, followed by Certificate at 18 percent, while the rest of the levels contributed less than one percent.

**Table 27:** Distribution of Outturns by Programme, Level and Sex in Medical Training Colleges, 2014

Programmes	Level											
	Higher Diploma		Diploma		Certificate		Proficiency		Sub- Total		Grand Total	%
	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	1	8	0	0	0	0	1	8	9	0.12
Business and Administration	0	0	9	15	1	12	0	0	10	27	37	0.48
Computing	0	0	4	28	80	156	0	0	84	184	268	3.47
Education	0	0	1	0	0	0	0	0	1	0	1	0.01
Engineering and Engineering Trades	0	0	63	25	0	0	0	0	63	25	88	1.14
Environmental Protection	0	0	261	154	0	0	0	0	261	154	415	5.38
Health	12	19	2272	3161	329	489	3	14	2616	3683	6299	81.66
Journalism and Information	0	0	85	109	102	184	0	0	187	293	480	6.22
Life Sciences	0	0	26	51	10	15	0	0	36	66	102	1.32
Social and Behavioral Sciences	0	0	0	0	4	11	0	0	4	11	15	0.19
<b>Total</b>	<b>12</b>	<b>19</b>	<b>2722</b>	<b>3551</b>	<b>526</b>	<b>867</b>	<b>3</b>	<b>14</b>	<b>3263</b>	<b>4451</b>	<b>7714</b>	<b>100</b>
%	<b>0.16</b>	<b>0.25</b>	<b>35.29</b>	<b>46.03</b>	<b>6.82</b>	<b>11.24</b>	<b>0.04</b>	<b>0.18</b>	<b>42.3</b>	<b>57.7</b>		
<b>Total %</b>	<b>0.41</b>		<b>81.32</b>		<b>18.06</b>		<b>0.22</b>		<b>100</b>			<b>100</b>

*\*Programme categories as per ISCED 2011 classification*

### 2.7.2 Outturns by Programme, Level and Sex in Medical Training Colleges, 2015

Table 28 shows that there was a total of 7,732 outturns captured for 2015 comprising of 57.8 percent female and 42.2 percent male. Health programme had the highest number of outturns accounting for 81.5 percent of the total outturns, followed by Journalism and Information, and Environmental Protection at 6.2 percent and 5.4 percent respectively. The rest had less than 1 percent each. Female outturns in Health programme had the highest outturns at 58.5 percent.

Diploma level had the highest outturns at 81 percent followed by Certificate level at 18 percent with the rest accounting for less than 1 percent. Females had higher outturns at all levels.

**Table 28: Distribution of Outturns by Programme, Level and Sex in Medical Training Colleges, 2015**

Programmes	Level											Grand Total	%
	Higher Diploma		Diploma		Certificate		Proficiency		Sub-Total				
	M	F	M	F	M	F	M	F	M	F			
Agriculture, Forestry and Fishery	0	0	1	8	0	0	0	0	1	0	1	0.01	
Arts	0	0	0	0	3	15	0	0	3	15	18	0.23	
Business and Administration	0	0	9	15	1	12	0	0	10	27	37	0.48	
Computing	0	0	4	28	80	156	0	0	84	184	268	3.47	
Education	0	0	1	0	0	0	0	0	1	0	1	0.01	
Engineering and Engineering Trades	0	0	63	25	0	0	0	0	63	25	88	1.14	
Environmental Protection	0	0	261	154	0	0	0	0	261	154	415	5.37	
Health	12	19	2272	3161	329	489	3	14	2616	3683	6299	81.47	
Journalism and Information	0	0	85	109	102	184	0	0	187	293	480	6.21	
Life Sciences	0	0	26	51	10	15	0	0	36	66	102	1.32	
Social and Behavioral Sciences	0	0	0		4	11	0	0	4	11	15	0.19	
<b>Total</b>	<b>12</b>	<b>19</b>	<b>2722</b>	<b>3551</b>	<b>529</b>	<b>882</b>	<b>3</b>	<b>14</b>	<b>3266</b>	<b>4466</b>	<b>7732</b>	<b>100</b>	
%	<b>0.16</b>	<b>0.25</b>	<b>35.2</b>	<b>45.9</b>	<b>6.8</b>	<b>11.4</b>	<b>0.0</b>	<b>0.1</b>	<b>42.2</b>	<b>57.7</b>	<b>100</b>		
<b>Total %</b>	<b>0.41</b>		<b>81.13</b>		<b>18.25</b>		<b>0.22</b>		<b>100</b>				

*\*Programme categories as per ISCED 2011 classification*

### 2.7.3 Outturns by Programme, Level and Sex in Medical Training Colleges, 2016

Table 29 shows that there was a total of 7,004 outturns captured for 2016 comprising 58.4 male and 41.7 percent female. Health programmes had the highest outturns accounting for 83.9 percent, followed by Journalism and Information at 7 percent and Environmental Protection at 5.2 percent. The rest had less than 2 percent each.

Diploma level had the highest outturns at 84.6 percent, out of which 48.5 were male and 36.08 percent female, followed by Certificate level at 14.9 percent comprising 9.4 percent male and 5.5 percent female. Higher Diploma level had the least outturns at 0.2 percent, followed by Proficiency at 0.3 percent.

**Table 29: Distribution of Outturns by Programme, Level and Sex in Medical Training Colleges, 2016**

Programmes	Level											Grand Total	%
	Higher Diploma		Diploma		Certificate		Proficiency		Sub-Total				
	M	F	M	F	M	F	M	F	M	F			
Agriculture, Forestry and Fishery	0	0	5	3	0	0	0	0	5	3	8	0.11	
Arts	0	0	0	0	2	0	0	0	2	0	2	0.03	
Business and Administration	0	0	7	4	0	0	0	0	7	4	11	0.16	
Computing	0	0	87	34	4	0	0	0	91	34	125	1.78	

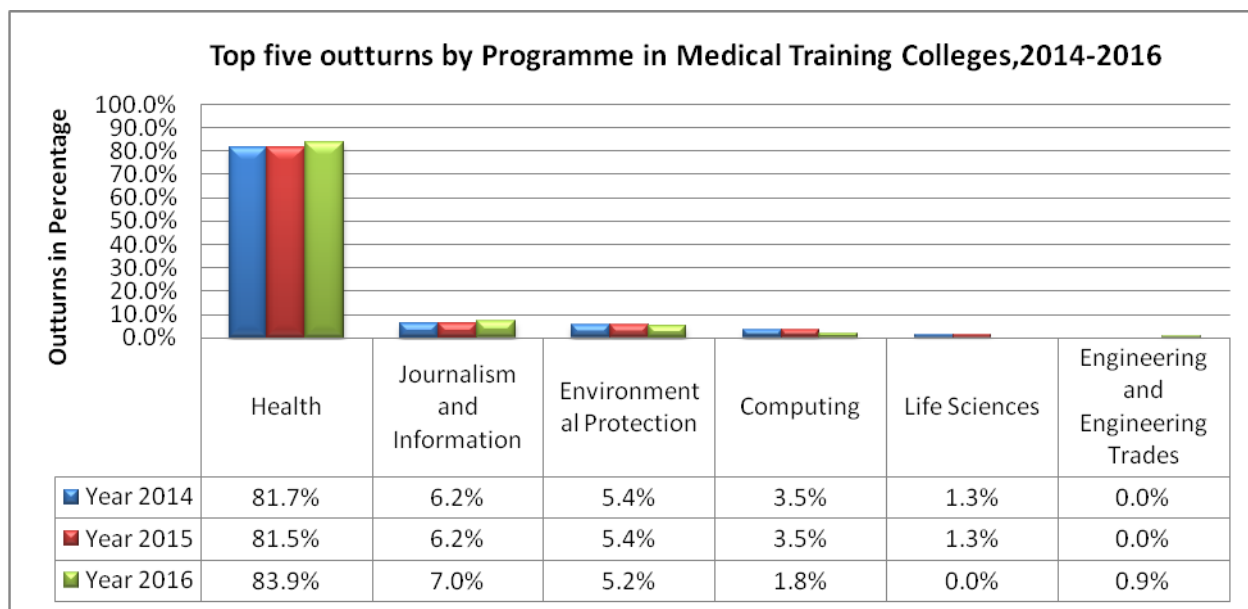
Engineering and Engineering Trades	0	0	18	42	0	0	0	0	18	42	60	0.86
Environmental Protection	0	0	175	190	0	0	0	0	175	190	365	5.21
Health	13	2	3072	2221	339	226	0	0	3424	2449	5873	83.85
Journalism and Information	0	0	0	0	316	156	14	6	330	162	492	7.02
Life Sciences	0	0	25	32	0	0	0	0	25	32	57	0.81
Social Services	0	0	10	1	0	0	0	0	10	1	11	0.16
<b>Total</b>	<b>13</b>	<b>2</b>	<b>3399</b>	<b>2527</b>	<b>661</b>	<b>382</b>	<b>14</b>	<b>6</b>	<b>4087</b>	<b>2917</b>	<b>7004</b>	<b>100</b>
%	<b>0.19</b>	<b>0.03</b>	<b>48.53</b>	<b>36.08</b>	<b>9.44</b>	<b>5.45</b>	<b>0.2</b>	<b>0.09</b>	<b>58.35</b>	<b>41.65</b>		
<b>Total %</b>	<b>0.22</b>		<b>84.6</b>		<b>14.89</b>		<b>0.29</b>		<b>100</b>			

## 2.7.4 Trend Analysis on Outturns in Medical Training Colleges, 2014- 2016

This section presents trend analysis of outturns by skill level, programme and sex for Medical Training Colleges, for years 2014 to 2016. A total of 11 programmes were captured under this category of institutions. The following skill levels were recorded: Higher Diploma, Diploma, Certificate and Proficiency.

### 2.7.4.1 Programmes with Highest Outturns

For the three-year period, Health programme had the highest outturns which ranged from 81.5 to 83.9 percent, followed by Journalism & Information ranging from 6.2 to 7 percent and Environmental Protection ranging from 5.2 to 5.4 percent. The rest ranged between 0 and 3.5 percent as seen in Figure 29.



**Figure 29:** Top five Outturns by Programme in Medical Training Colleges, 2014-2016

### 2.7.4.2 Programmes with Lowest Outturns

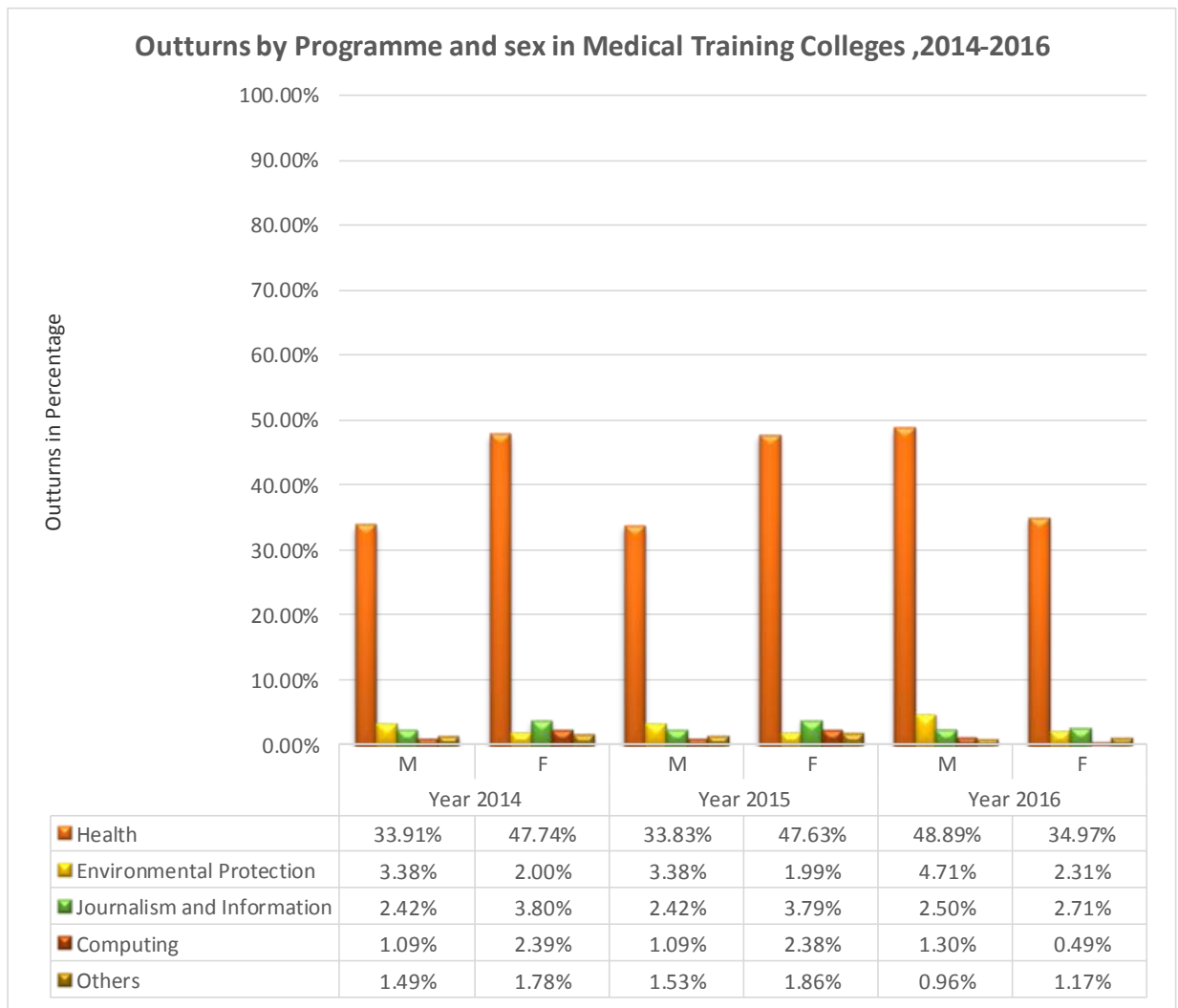
Table 30 indicates the programmes that had the lowest outturns in the three-year period. Out of these, Engineering and Engineering Trades had 1.14 percent in 2014 and 2015 and 0.86 in 2016. The rest had less than 0.5 percent.

**Table 30:** *Distribution of programmes with lowest Outturns, 2014-2016 in Medical Training Colleges*

Programmes	Percentage		
	2014	2015	2016
Social and Behavioural Sciences	0	0.19	0
Arts	0	0.23	0.03
Social Services	0	0	0.16
Education	0.01	0.01	0
Agriculture, Forestry and Fishery	0.12	0.01	0.11
Business and Administration	0.48	0.48	0.16
Engineering and Engineering Trades	1.14	1.14	0.86

#### 2.7.4.3: Distribution of Outturns by Programme and Sex

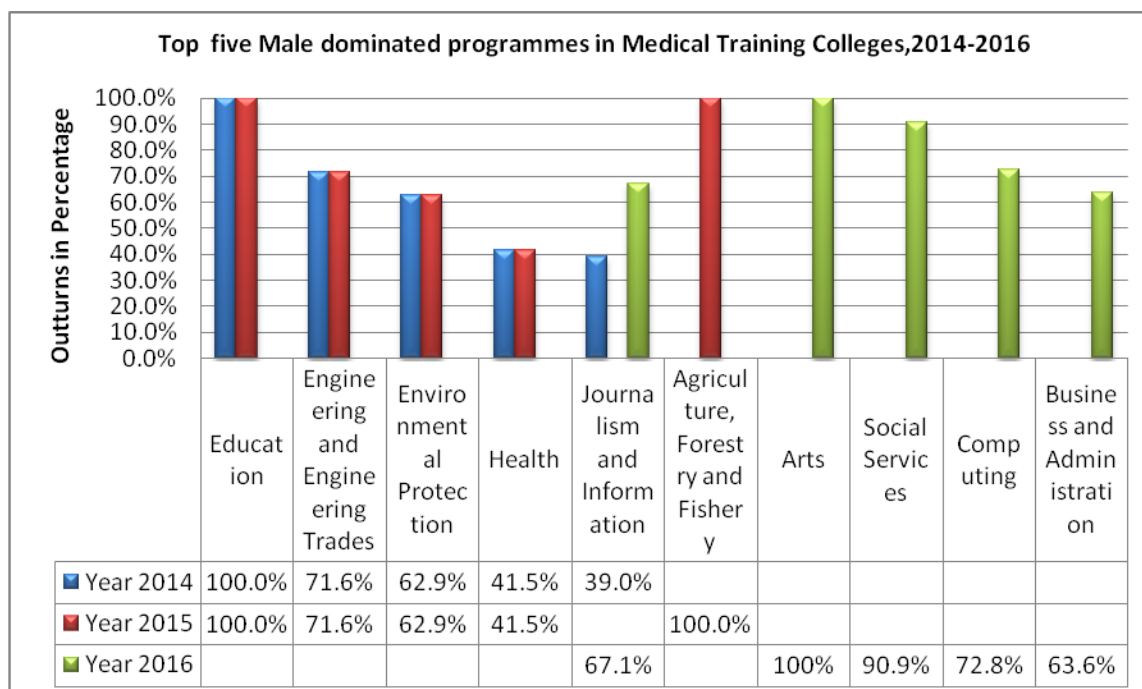
Figure 30 indicates that only Health programme had significant numbers for both male and female. In 2014 and 2015 female outturns in Health and Computing programmes surpassed those of males except in 2016. Female outturns were slightly more than male in Journalism and Information programmes, while male outturns were more than female in Environmental Protection programme in the period under review.



**Figure 30:** Outturns by programme and sex in Medical Training Colleges, 2014-2016

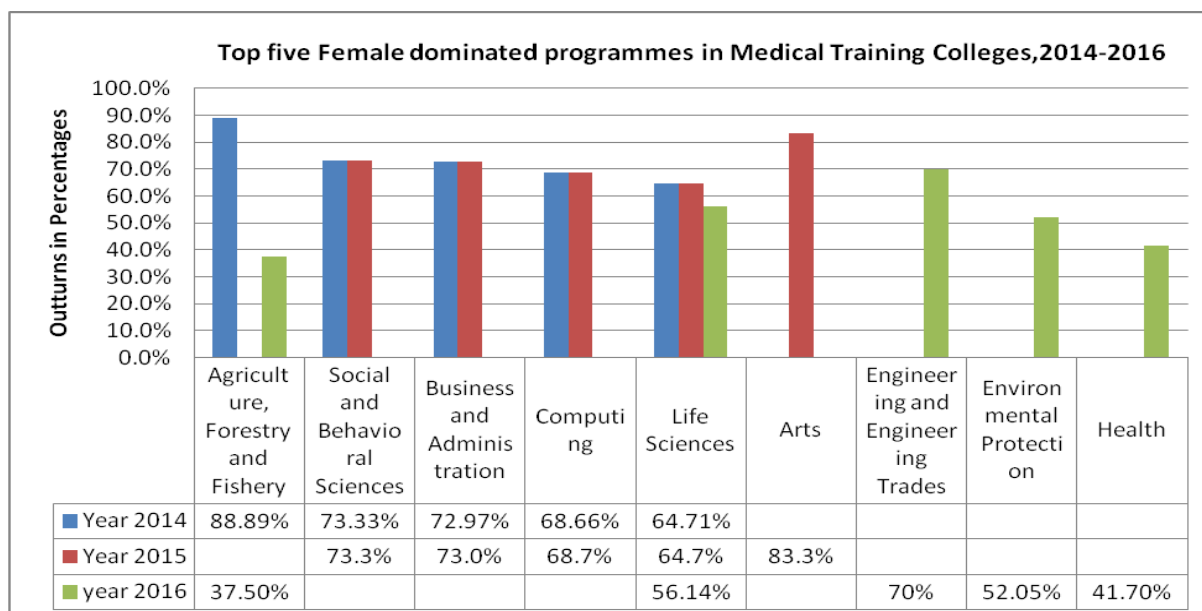
From the Figures 31 and 32 below, it can be observed that different programmes took position one and two for both male and female in all the years under review. Notably Health was not among the top three in any of the years for either of the two sexes, an indication that there was a near parity in the programme outturn share. Top programmes for both males and females featured only once or twice during the three year period.

In the years 2014 and 2015, all outturns in Education related programmes were 100 percent male. Similarly, all outturns in Agriculture, Forestry & Fishery and Arts programmes were 100 percent male in years 2015 and 2016 respectively as shown in Figure 31.



**Figure 31:** Top five Male dominated programmes in Medical Training Colleges, 2014-2016

In Figure 32, it is observed that females outturns were higher in Agriculture, Forestry & Fishery with 88.9 percent in 2014, Arts with 83.3 percent in 2015 and Engineering & Engineering Trades at 70 percent in 2016. It was only in Life Sciences programme that consistency was observed for three years running.

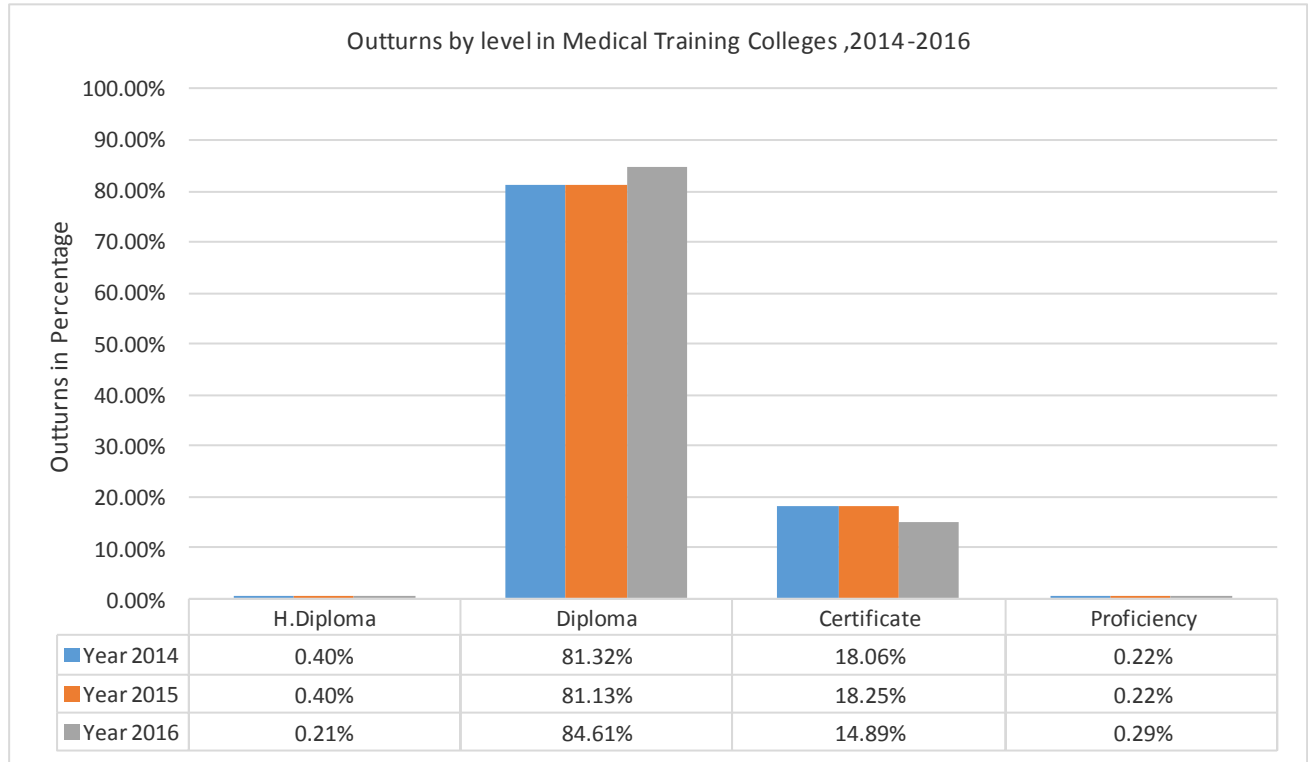


**Figure 32:** Top five Female dominated programmes in Medical Training Colleges, 2014-2016



#### 2.7.4.4 Overall change in Outturns per Skill Level

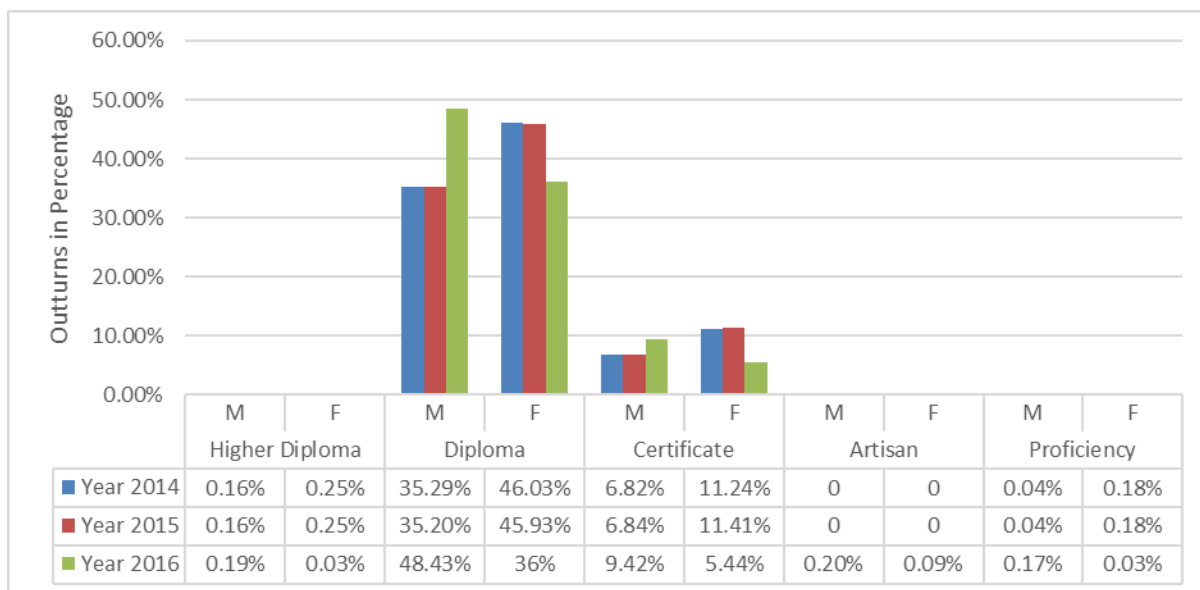
During the period under review, the total outturns at Higher Diploma and Proficiency levels were constant in the year 2014 and 2015 with minimal changes in 2016. However, at Diploma level there was a slight decrease from 81.3 to 81.1 percent in 2014 and 2015 and an increase of 84.61 percent in 2016. At Certificate level, outturns increased slightly from 2014 to 2015 and then decreased in 2016. Diploma and Certificate levels accounted for over 98 percent of the total outturns in each of the three years under review as indicated in Figure 33.



**Figure 33:** Outturns by Level in Medical Training Colleges, 2014-2016

#### 2.7.4.5: Distribution of Outturns by Skill Level and sex

During the period under review, the total female outturns at Higher Diploma, Diploma, Certificate and Proficiency levels were more than male outturns for year 2014 and 2015. However, males were more than females at all levels in year 2016 as indicated in Figure 34. At Diploma level, females registered a general decline over the three-year period from 46.03 percent in 2014 to 36 percent in 2016.



**Figure 34:** Outturns by level and sex in Medical Training Colleges, 2014-2016

#### 2.7.4.6: Summary of Outturns by Year, Skill Level and Sex

Table 31 indicates a fluctuation of outturns from one year to the next. Diploma level had the highest outturns for both males and females. However, it can be observed that female outturns surpassed those of males in all skill levels for two consecutive years in 2014 and 2015. The trend however changed in 2016 where male outturns surpassed those of females in all skill levels.

**Table 31:** Summary of Outturns by Year, Level and Sex in Medical Training Colleges, 2014-2016

Year	LEVEL										Total
	Higher Diploma		Diploma		Certificate		Artisan		Proficiency		
	M	F	M	F	M	F	M	F	M	F	
2014	12	19	2722	3551	526	867	0	0	3	14	7714
%	0.16	0.25	35.29	46.03	6.82	11.24	0	0	0.04	0.18	100
2015	12	19	2722	3551	529	882	0	0	3	14	7732
%	0.16	0.25	35.2	45.93	6.84	11.41	0	0	0.04	0.18	100
2016	13	2	3399	2527	661	382	14	6	13	2	7019
%	0.19	0.03	48.43	36	9.42	5.44	0.2	0.09	0.17	0.03	100
	0.22		84.43		14.86		0.29		0.2		

## 2.8 KENYA SCHOOL OF GOVERNMENT (KSG) TRAINING INSTITUTIONS

Kenya School of Government (KSG) institutions are owned and managed by the Government under the Ministry of Public Service, Youth and Gender Affairs. The institutions used to admit only civil servants and state corporations staff undergoing in-service and induction training. The main objective was to provide skills to civil servants as part of capacity building and enhancing public service performance. The institutions later opened their doors to include other interested individuals from private companies, NGOs, the general public and students from other countries.

There are five (5) Kenya School of Government campuses spread in 5 counties in the country, namely: Nairobi, Mombasa, Matuga, Embu and Baringo. The programmes offered are tailor made to the training needs of Government institutions and private organizations. They range from Higher National Diploma, National Diploma, Certificate and General Management, Social Work and Community Development, and Proficiency.

### 2.8.1 Outturns by Programme, Level and Sex, 2014

Table 32 shows the outturns by programme, level and sex for the year 2014. There was a total of 6,426 outturns captured, of which males accounted for 53.1 percent and females 46.9 percent. It can be observed that Kenya School of Government had nine different programmes and two levels at Certificate and Proficiency. Business and Administration programme had the highest outturns at 76.5 percent followed by Humanities and Personal Development at 9.3 and 5.5 percent respectively. Outturns in Journalism and Information, Arts, Security Services and Environmental Protection had less than 1 percent each. Certificate level had the highest outturns at 80.3 percent and Proficiency at 19.7 percent.

**Table 32:** Distribution of Outturns by Programme, Level and Sex in Kenya School of Government, 2014

Programmes	LEVEL						Grand Total	%
	Certificate		Proficiency		Sub-Total			
	Male	Female	Male	Female	Male	Female		
Arts	21	19	0	0	21	19	40	0.6
Humanities	294	211	62	29	356	240	596	9.3
Journalism & Information	12	9	7	9	19	18	37	0.6
Business & Administration	2128	1876	455	455	2583	2331	4914	76.5
Computing	17	17	86	93	103	110	213	3.3
Social Services	70	67	42	29	112	96	208	3.2
Environmental Protection	9	8	0	0	9	8	17	0.3
Security Services	33	12	0	0	33	12	45	0.7
Personal Development	176	180	0	0	176	180	356	5.5

Total	2760	2399	652	615	3412	3014	6426	100
%	43	37.3	10.1	9.6	53.1	46.9	100	
<b>Total Percent</b>	<b>80.3</b>		<b>19.7</b>		<b>100</b>			

*\*Programme categories as per ISCED 2011 classification*

### 2.8.2 Outturns by Programme, Level and Sex, 2015

Table 33 presents data on outturns for the year 2015. There was a total of 4,497 outturns captured, of which female outturns constituted the higher share at 57.5 percent and male at 42.5 per cent. Business and Administration programme recorded the highest number of outturns at 85 percent followed by Environmental Protection at 7.9 percent while Computing had the lowest number of outturns at less than 1 percent.

It is observed that during the year under review, outturns captured under KSG institutions that responded were at Certificate level only.

**Table 33:** Distribution of Outturns by Programme, Level and Sex in Kenya School of Government, 2015.

Programmes	Certificate		Total	Percentage
	Male	Female		
Business and Administration	1616	2205	3821	85
Computing	22	20	42	0.9
Social Services	118	161	279	6.2
Environmental Protection	156	199	355	7.9
<b>Total</b>	<b>1912</b>	<b>2585</b>	<b>4497</b>	<b>100</b>
<b>%</b>	<b>42.5</b>	<b>57.5</b>	<b>100</b>	

*\*Programme categories as per ISCED 2011 classification*

### 2.8.3 Outturns by Programme, Level and Sex, 2016

Table 34 presents data on outturns from Kenya School of Government for year 2016. From the table, there was a total of 8,465 outturns captured, of which female outturns were higher at 51.9 percent. Business & Administration programme had the highest outturns at 97.1 per cent followed by Computing and Environmental Protection and Social Services at distant second and third positions of at 1.2 and 1.0 percent respectively.

It is observed that during the year under review, outturns captured were at Certificate level only.

**Table 34:** Distribution of Outturns by Programme, Level and Sex in Kenya School of Government, 2016

Programmes	Certificate		Total	Percentage
	Male	Female		
Business and Administration	3982	4241	8223	97.1
Computing	43	60	103	1.2
Environmental Protection	30	58	88	1

Security Services	13	38	51	0.6
<b>Total</b>	4068 48.1%	4397 51.9%	8465	100

**\*Programme categories as per ISCED 2011 classification**

#### **2.8.4 Trend Analysis on Outturns in Kenya School of Government, 2014 – 2016**

This section presents trend analysis of outturns by programme, sex and skill level for years 2014 to 2016. A total of 9 programmes were captured under this category of institutions. Two skill levels were recorded- Certificate and Proficiency.

##### **2.8.4.1: Programmes with Highest Outturns**

For this category of training institutions, a maximum of nine programmes were recorded for year 2014. The main ones for this year were Business and Administration; Humanities and Personal Development. For year 2015, the main programmes recorded were Business and Administration; Environmental Protection and Social Services and for year 2015 Business and Administration programme took up virtually all outturns captured.

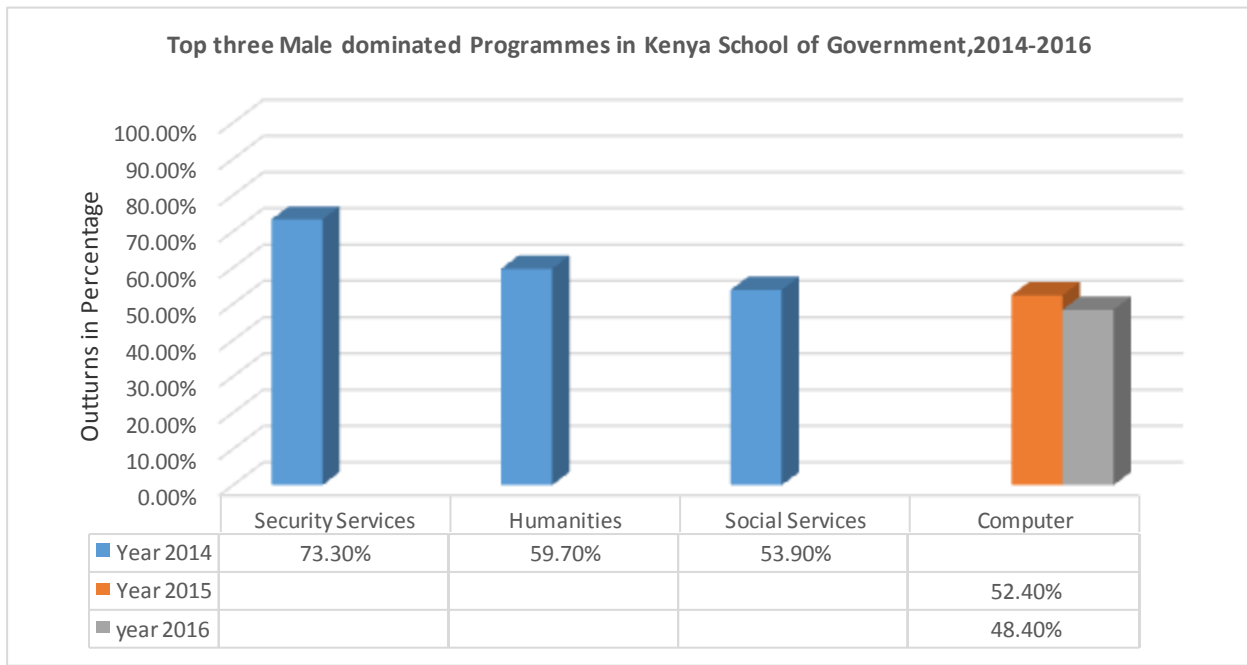
Overall, Business and Administration programme dominated throughout with 97 percent in 2016, 85 percent in 2015 and 76.5 percent in 2014.

##### **2.8.4.2 : Programmes with Lowest Outturns**

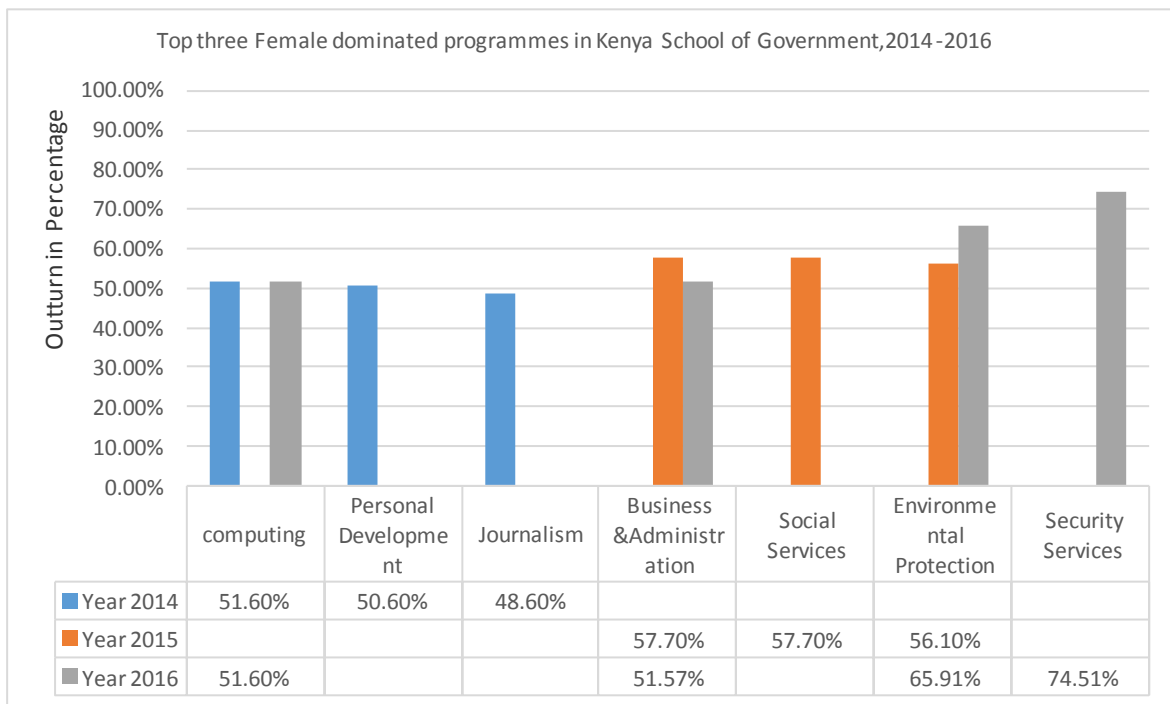
From Tables 32, 33 and 34, it was observed that apart from Business and Administration programme, all the rest had below 10 percent outturns. Others like Arts, Journalism and Information; Environmental Protection, Security Services and Computing had less than 1 percent on average.

##### **2.8.4.3 Distribution of Outturns by Programme and Sex**

Figures 35 and 36 are pictorial representations of the male and female dominated programmes in the Kenya School of Government during the period under review. It is observed that other than Security Services where males dominated in 2014 with 73.3 percent and female dominated the same programme in 2016 with 74.5 percent, and Environmental Protection with 65.9 percent for females in 2016, all the other programmes were near normal at average range of 50 percent.



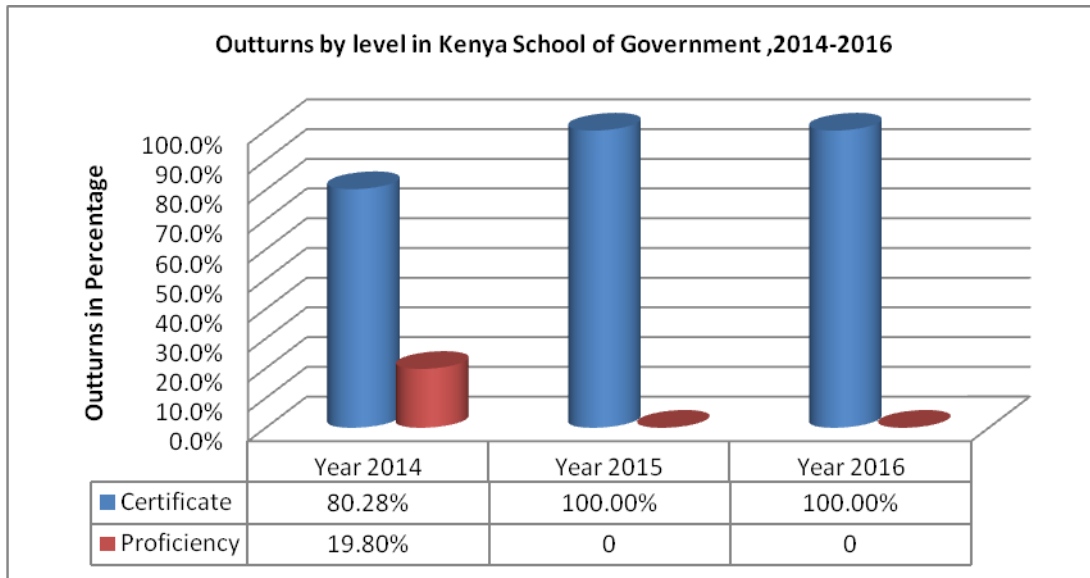
**Figure 35:** Top three Male dominated programmes in Kenya school of Government, 2014-2016



**Figure 36:** Top three Female dominated programmes in Kenya school of Government, 2014-2016

#### 2.8.4.4: Overall change in Outturns per Skill Level, 2014-2016

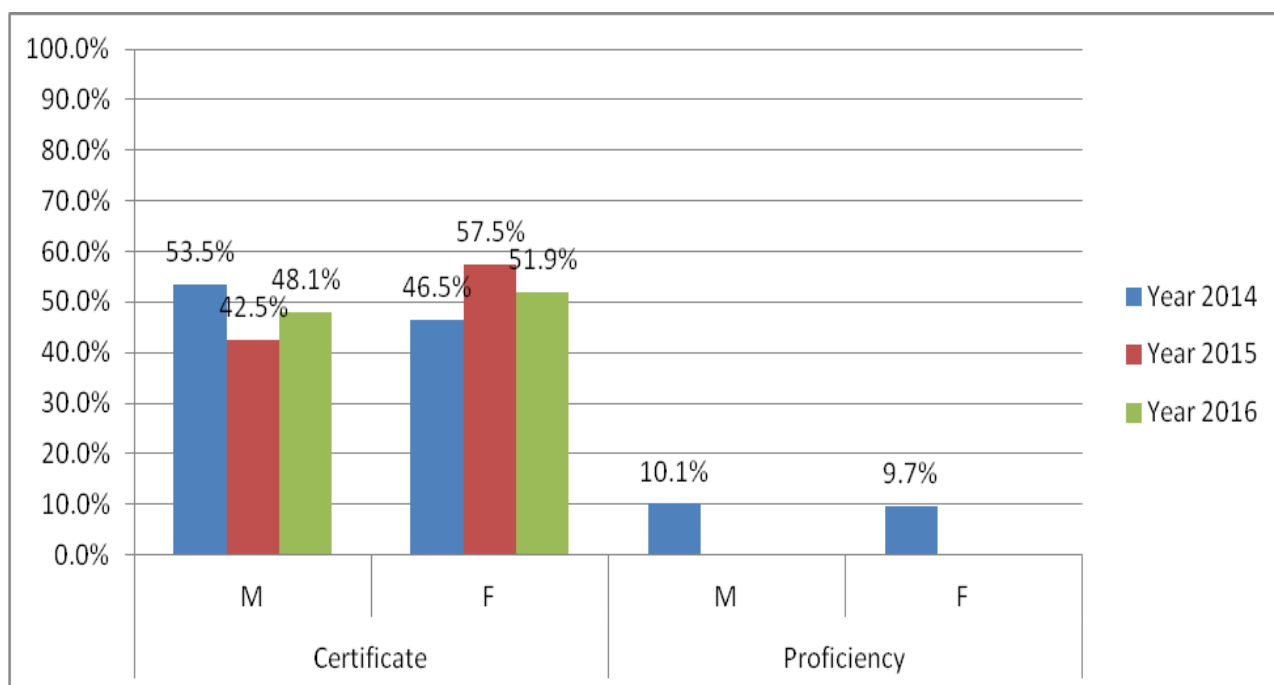
Figure 37 indicates that the total outturns for Certificate level for 2015 was at 80.28 percent while in the years 2015 and 2016, it was the only level that was awarded. Proficiency level had 19.80 percent outturns in 2014 and subsequent years had no outturns in institutions covered.



**Figure 37:** Outturns by level in Kenya School of Government, 2014-2016

#### 2.8.4.5 Distribution of Outturns by Skill Level and Sex

During the period under review, it can be observed that only Certificate level had significant numbers for both males and females. The figure below shows that there was a decrease for males from 2014 to 2015 but an increase from 2015 to 2016. For the females, an increase was observed from 2014 to 2015, followed by a drop in 2016. Proficiency was the only level awarded in 2014 as shown in Figure 38.



**Figure 38:** Outturns by level and sex in Kenya School of Government, 2014-2016

#### 2.8.4.6 Summary of Outturns by Year, Skill Level and Sex

Two skill levels were recorded under Kenya School of Government: Certificate and Proficiency. The year 2016 had the highest outturns followed by 2014. A decline was recorded in year 2015. Table 35 indicates that total Certificate outturns for the three years comprised 93.47 percent out of which males accounted for 45.08 percent while females accounted for 48.39 percent. On the other hand, Proficiency level registered 6.55 percent of all outturns, of which males accounted for 3.36 percent and female 3.17 percent. The programme did not have outturns in 2015 and 2016.

**Table 35:** Summary of Outturns by Year, Level and Sex in Kenya School of Government, 2014-2016

Year	Level						Grand Total
	Certificate		Proficiency		Sub-Total		
	M	F	M	F	M	F	
2014	2760	2399	652	615	3412	3014	6426
Percentage	42.95	37.33	10.1	9.7	53.09	46.91	100
2015	1912	2585	0	0	1912	2585	4497
Percentage	42.52	57.48	0	0	42.5	57.5	100
2016	4068	4397	0	0	4068	4397	8465
Percentage	48.06	51.94	0	0	48.05	51.95	100
Total	8740	9381	652	615	9392	9996	19388
Percentage	45.08	48.39	3.36	3.17	48.44	51.56	100



## **2.9 TRAINING INSTITUTIONS UNDER GOVERNMENT MINISTRIES AND AGENCIES**

Government Training Institutes are owned and managed by Ministries or State Agencies. Their main objective is to enhance skills of public servants working in those specific sectors to improve their performance. However, these institutions have opened their doors to members of the public who may be interested in acquiring skills in those sectors. The programmes offered are tailor made to address individual staff training needs ranging from diploma, certificate, artisan, craft and proficiency levels.

### **2.9.1 Outturns by Programme, Level and Sex in Training Institutions under Government Ministries and Agencies, 2014**

In the year 2014, the total number of outturns captured was 8,139 out of which 57.8 percent represented male and 42.2 per cent female respectively as presented in Table 36. The programme with the highest number of outturns was Business and Administration with 72.5 percent followed by Architecture and Building and Engineering and Engineering Trades at 14.3 and 9.9 percent respectively. Transport Services, Personal Development and Humanities programmes had the lowest number of outturns with less than 1 percent each.

Males highest outturns were in Personal Development, followed by Engineering and Engineering Trades and Transport Services; while the lowest were Architecture and Building followed by Law and Business and Administration. In Humanities, both male and female were at par. Females had the higher number of outturns in Business and Administration followed by Law and Architecture and Building while the lowest outturns were in Transport Services followed by Engineering and Engineering Trades and Personal Development.

Proficiency level had the highest outturns at 39.2 percent followed by Certificate level at 29.7 percent while the least number of outturns were recorded in Higher Diploma, Artisan and Craft, with less than 1 percent each.

In all levels male outturns outnumbered the female. It is also observed that even in the few programmes where female outturns were more than male, the margins were much smaller compared to those of the males.

**Table 36: Outturns by Programme, Level and Sex in Training Institutions under MDAs, 2014**

Pro-grammes	Higher Dip		Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total		Gra nd To- tal	%
	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
	Architec- ture & Building	0	0	523	261	232	148	0	0	0	0	0	0	755		
Business &Administr ation	28	20	705	604	800	791	0	0	53	31	1450	1419	3036	2865	5901	72.5
Engineer- ing &Eng. Trades	0	0	36	5	392	14	61	4	14	3	244	32	747	58	805	9.9
Humani- ties	0	0	0	0	0	0	0	0	0	0	25	25	25	25	50	0.6
Law	0	0	54	47	0	0	0	0	0	0	0	0	54	47	101	1.2
Personal Develop- ment	0	0	0	0	43	3	0	0	0	0	0	0	43	3	46	0.6
Transport Services	0	0	52	20	0	0	0	0	0	0	0	0	52	20	72	0.9
Total	28	20	1370	937	1467	956	61	4	67	34	1719	1476	4712	3427	8139	100
Percentage Total	0.34	0.25	16.83	11.51	18.02	11.75	0.75	0.05	0.82	0.42	21.12	18.13	57.89	42.11	100	

**\*Programme categories as per ISCED 2011 classification**

### 2.9.2 Outturns by Programme, Level and Sex in Training Institutions under Government Ministries and Agencies, 2015

In the year 2015, total outturns captured were 7,081 out of which 58.7 percent represented male and 41.3 percent female respectively. The programme with the highest outturns was Business and Administration with 64.1 percent followed by Engineering and Engineering Trades at 18.5 and Architecture and Building at 7 percent. The lowest were Law at 2.1 percent followed by Personal Development and Transport Services programmes with less than 1 percent each as indicated in Table 38.

Males had higher outturns in Personal Development, followed by Engineering and Engineering Trades and Transport Services. The lowest were Law followed by Business and Administration and Manufacturing and Processing. Females had higher outturns in Manufacturing and Processing, followed by Business and Administration and Law, while the lowest were Transport Services, Personal Development and Engineering and Engineering Trades.

Diploma level had the highest outturns at 39.6 percent followed by Proficiency level at 38.1 percent and Certificate level at 21 percent, while the lowest outturns were recorded in Artisan level at 1 percent, followed by Higher Diploma with less than 1 percent. In all levels male outturns outnumbered the female.

**Table 37: Outturns by Programme, Level and Sex in Training Institutions under MDAs, 2015**

Programme	Level												Grand Total	%
	Higher Dip		Diploma		Certificate		Artisan		Proficiency		Sub Total			
	M	F	M	F	M	F	M	F	M	F	M	F		
Architecture and Building	0	0	207	126	91	69	0	0	0	0	298	195	493	7
Business and Administration	0	0	735	770	366	350	0	0	1200	1170	2301	2237	4538	64.1
Engineering and Engineering Trades	3	0	235	74	531	66	73	0	288	39	1130	179	1309	18.5
Law	0	0	82	67	0	0	0	0	0	0	82	67	149	2.1
Manufacturing and Processing	0	0	140	139	0	0	0	0	0	0	140	139	279	3.9
Personal Development	0	0	0	0	24	4	0	0	0	0	24	4	28	0.4
Personal Services	0	0	141	97	0	0	0	0	0	0	141	97	238	3.4
Transport Services	0	0	39	8	0	0	0	0	0	0	39	8	47	0.7
Total	3	0	1579	1281	1012	489	73	0	1488	1209	4155	2926	7081	100
%	0.04	0	22.3	17.34	14.29	6.91	1.03	0	21.01	17.07	58.68	41.32	100	

### 2.9.3 Outturns by Programme, Year and Sex in Training Institutions under Government Ministries and Agencies, 2016

Table 38 presents an analysis of outturns by programme, level and sex. In the year under review, the total outturns captured was 9,686 out of whom male and female accounted for 56.1 and 43.9 percent respectively. The programmes that had the highest outturns were Business and Administration at 68.8 percent, followed by Engineering and Engineering Trades at 17.4 percent and Architecture and Building at 4.4 percent, while the lowest were Law at 1.8 percent, followed by Personal Development and Transport Services at less than 1 percent each.

Males had the highest outturns in Personal Development, followed by Engineering and Engineering Trades and Transport Services, while the lowest programmes for males were Business and Administration, followed by Personal Services and Manufacturing and Processing. Females had more outturns in Manufacturing and Processing, followed by Personal Services and Business and Administration, while the lowest were Transport Services, followed by Engineering and Engineering Trades and Personal Development.

Certificate level had the highest number of outturns at 40.6 percent, followed by Diploma 33.6 percent and Proficiency at 24.4 percent, while the lowest were Higher Diploma, Artisan and Craft with less than 1 percent each.

**Table 38: Outturns by Programme, Level and Sex in Training Institutions under MDAs, 2016**

Programmes	Level														Grand Total	%
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Architecture & Building	0	0	187	102	97	44	0	0	0	0	0	0	284	146	430	4.44
Business & Administration	28	20	878	796	1481	1447	0	0	0	0	974	1036	3361	3299	6660	68.76
Engineering & Engineering Trades	0	0	300	110	740	110	73	1	0	0	302	46	1415	267	1682	17.36
Law	0	0	84	78	0	0	0	0	0	0	0	0	84	78	162	1.67
Manufacturing & Processing	0	0	104	303	0	0	0	0	0	0	0	0	104	303	407	4.2
Personal Development	0	0	0	0	17	2	0	0	0	0	0	0	17	2	19	0.2
Personal Services	0	0	105	136	0	0	0	0	0	0	0	0	105	136	241	2.49
Transport Services	0	0	53	16	0	0	0	0	8	8	0	0	61	24	85	0.88
Total	28	20	1711	1541	2335	1603	73	1	8	8	1276	1082	5431	4255	9686	100
Percent	0.3	0.2	17.7	15.9	24.1	16.5	0.8	0	0.1	0.1	13.2	11.2	56.1	43.9	100	

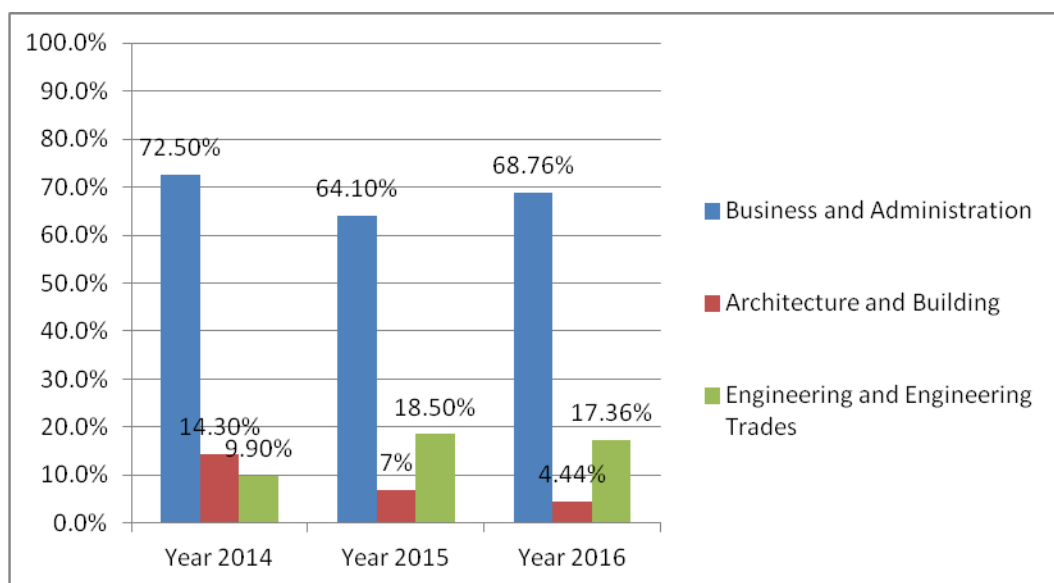
## 2.9.4 Trend Analysis on Outturns in Training Institutions under Government Ministries and Agencies, 2014 - 2016

This section presents trend analysis of outturns by programme, sex and skill level for training institutions under government Ministries and Agencies for years 2014 to 2016. A total of 8 programmes were captured under this category of institutions. The following skill levels were recorded: Higher Diploma, Diploma, Certificate, Artisan Craft and Proficiency.

### 2.9.4.1 Programmes with Highest Outturns

For the three-year period, Business & Administration programme maintained the leading position in outturns comprising an average of 68.5 percent share of outturns from all the 8 programmes captured. Second position alternated between Engineering & Engineering Trades programme and Architecture & Building, which had average outturns of 15.3 and 8.6 percent respectively as seen in the figure below.

From Figure 39 below, Business & Administration had the highest outturns in the three years under review accounting for 72.5 percent in 2014, 64.1 percent and 68.76 percent in 2015 and 2016 respectively. No other programmes recorded outturns more than 20 percent.



**Figure 39:** Top three Outturns by Programme and Year for Institutions under Government Ministries

#### 2.9.4.2 Programmes with Lowest Outturns

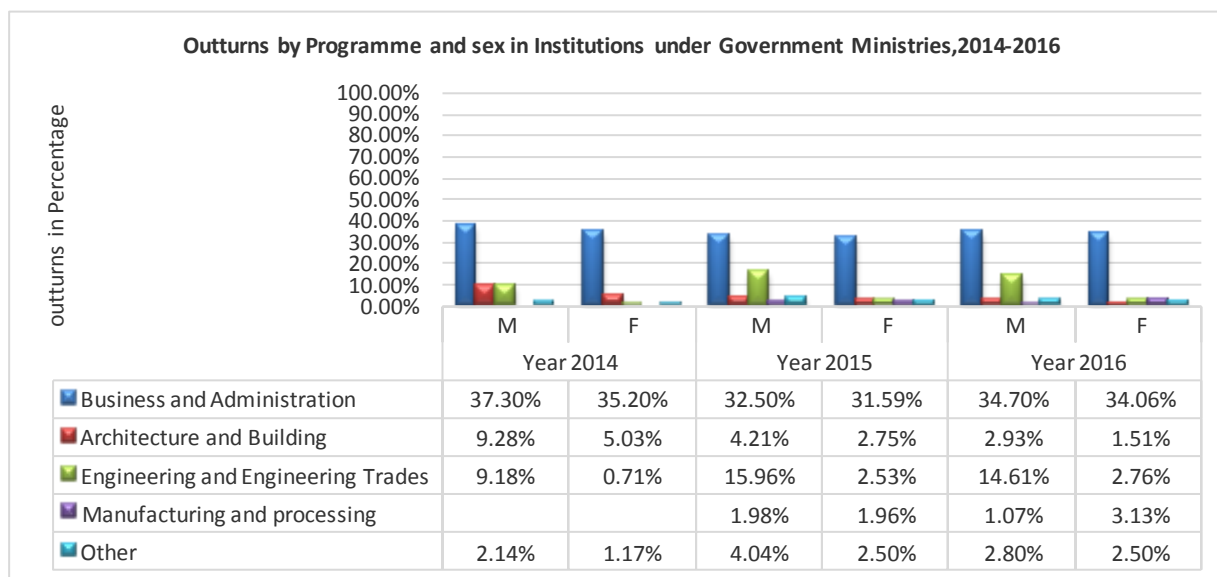
The Table below indicates the programmes that performed worst in the 3-year period, occupying the Bottom 3 positions.

**Table 39:** Distribution of bottom three outturns by programme for institutions under Government Ministries and Agencies

Programmes	Percentage		
	2014	2015	2016
Humanities	0.06	0	0
Personal development	0.06	0.4	0.2
Law	0.2	2.1	1.7
Transport	0	0.7	0.9

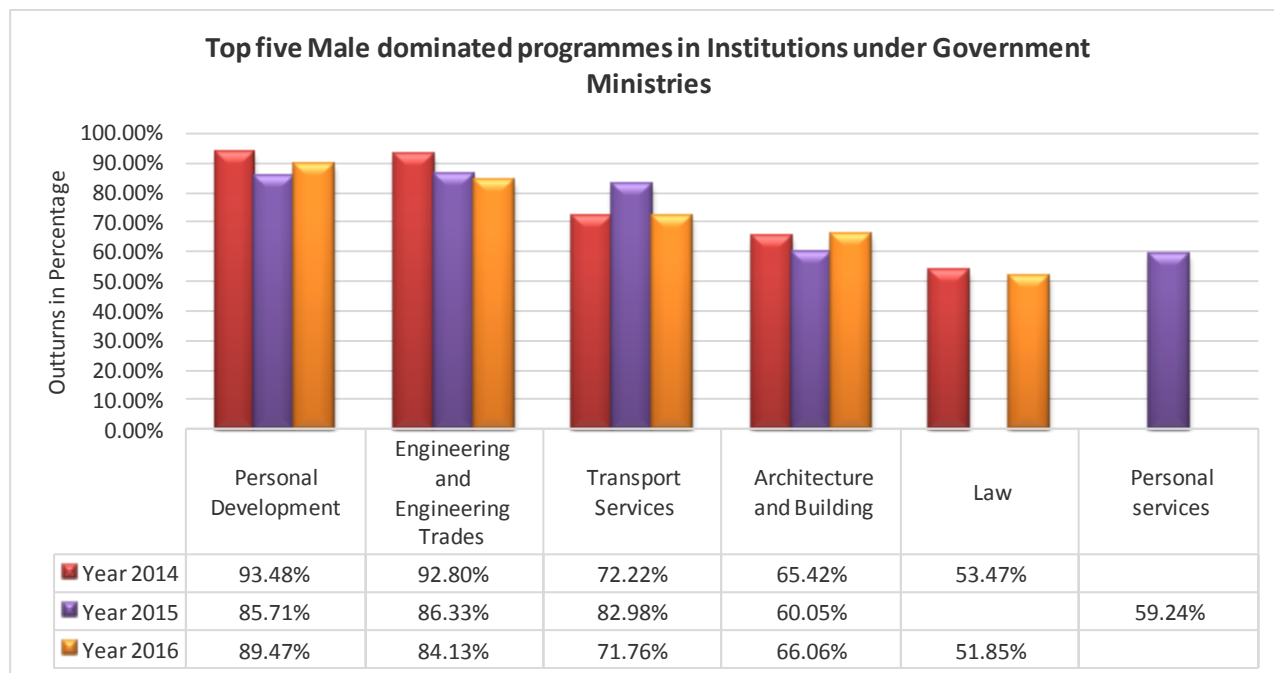
#### 2.9.4.3 Distribution of Outturns by Programme and Sex

Figure 40 indicates that Business & Administration programme had significant numbers for both males and females. For male outturns, the other programmes with notable numbers were Architecture & Building and Engineering & Engineering Trades. Numbers for the other programmes were negligible. Programmes under ‘others’ category included Law, Personal Development, Personal Services, Transport Services and Humanities.

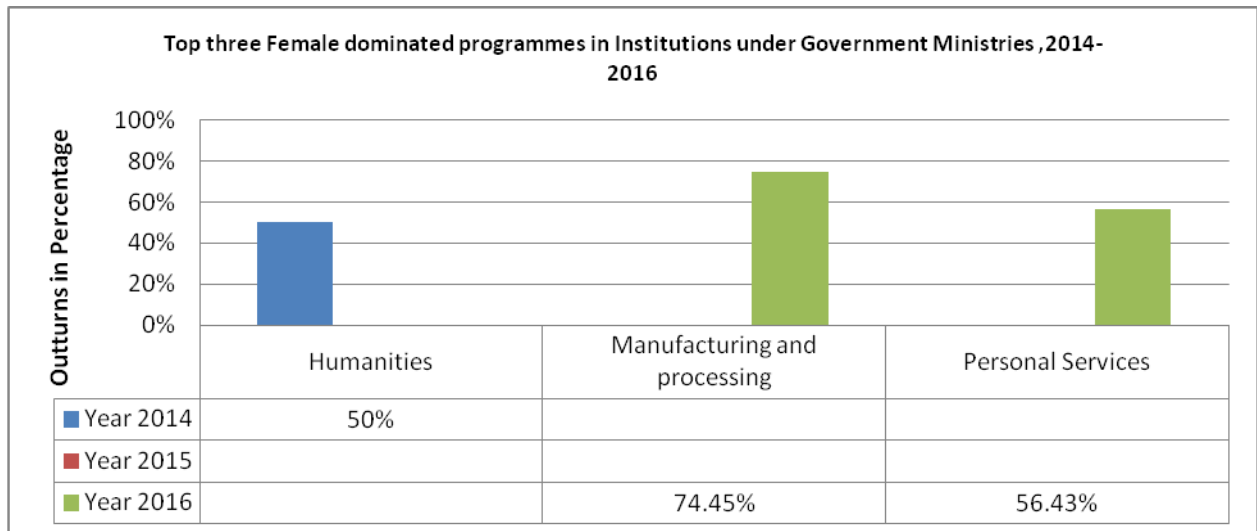


**Figure 40:** Outturns by Programme and Sex in Institutions under Government Ministries 2014-2016

Figures 41 and 42 present the top three male and female dominated programmes in the three years under review. Personal Development, Engineering, Transport and Architecture topped for males in all the three years while for female outturns, Humanities topped in 2014 with Manufacturing & Processing topping in 2015 and 2016. Notably, none of the programmes managed to get more than 50 percent for the females in year 2015.



**Figure 41:** Top five Male dominated programmes for Institutions under Government Ministries, 2014-2016



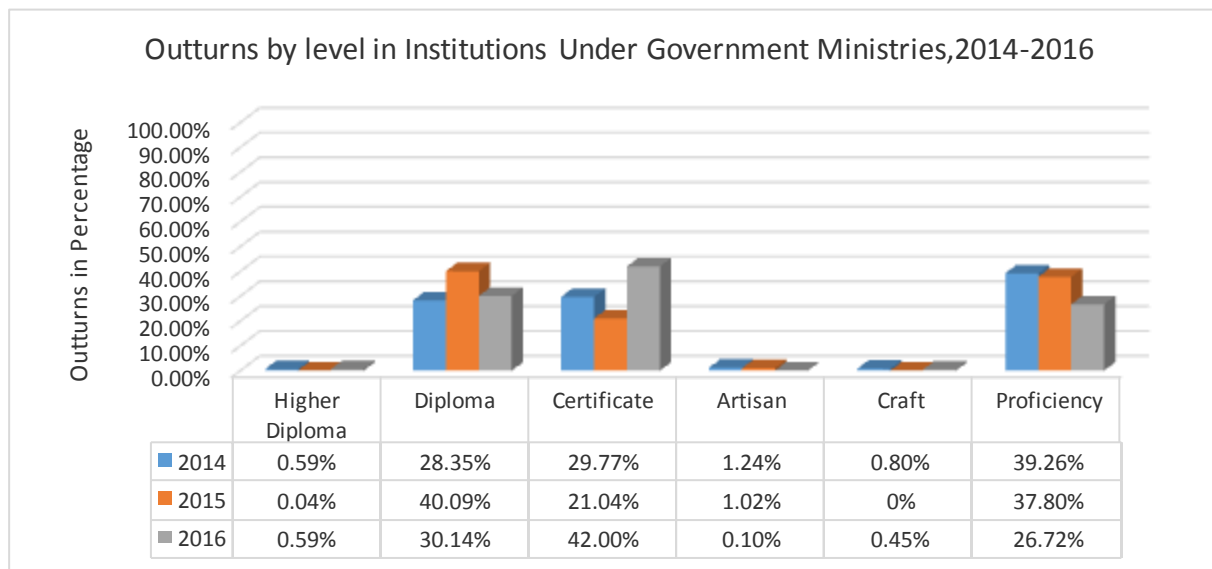
**Figure 42:** Top three Female dominated programmes for Institutions under Government Ministries and Agencies

#### 2.9.4.4 Overall change in Outturns per Skill Level

The total outturns decreased slightly by 12.9 percent from 2014 to 2015 but increased by 36.7 percent from 2015 to 2016. Outturns at Higher Diploma level decreased drastically by 93.7 percent from 2014 to 2015 then went back to the 2014 level in 2016. At Diploma level the outturns pattern was more consistent, increasing by 23.9 percent from 2014 to 2015 followed by another increase by 13.7 percent in 2016.

At Certificate Level outturns decreased by 38 percent from 2014 to 2015 and increased by 162 percent between 2015 and 2016. At Artisan level, there was an increase of 12.3 percent from 2014 to 2015 followed by a similar one in 2016. At Proficiency level, outturns increased by 44.5 percent from 2014 to 2015 and decreased by 12.5 percent between 2015 and 2016.

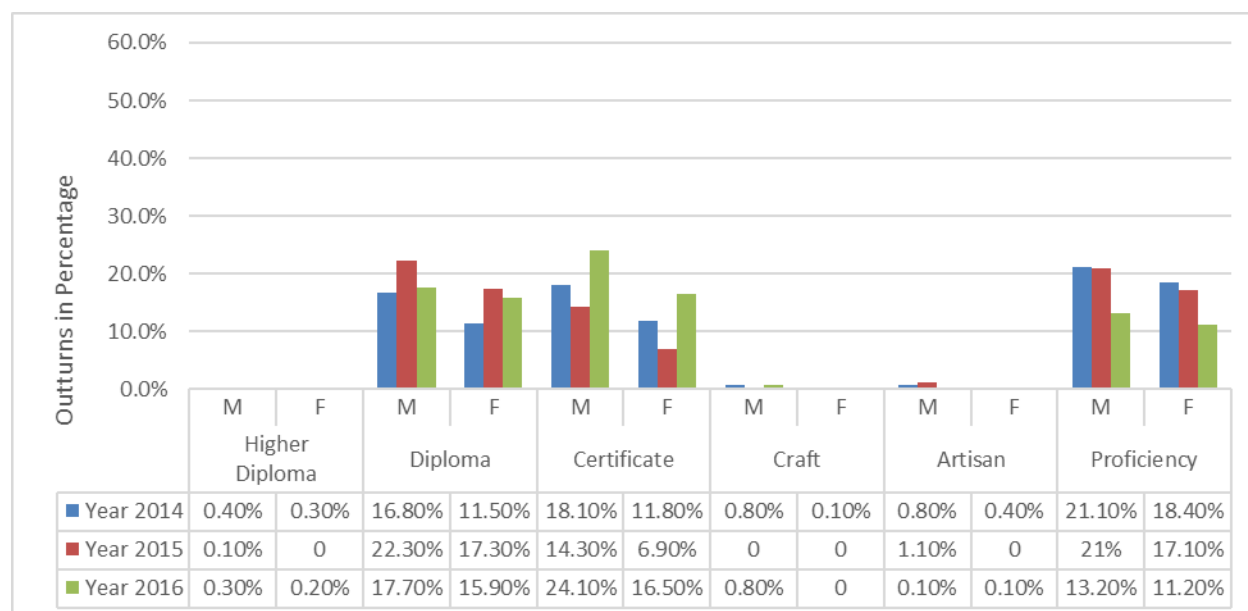
From Figure 43 below, it can be observed that in 2014 outturns in Proficiency were the highest at 39.26 percent. In 2015 Diploma outturns were the highest at 40.09 percent while in 2016 Certificate were the highest at 42.0 percent. Higher Diploma, Artisan and Craft levels recorded minimal outturns in the three years under review.



**Figure 43:** Outturns by level in Institutions under Government Ministries 2014-2016

#### 2.9.4.5: Distribution of Outturns by Skill Level and Sex

During the period under review, male outturns were more than female at all levels throughout the three years. The largest gap was registered at Certificate level as shown in Figure 44.



**Figure 44:** Outturns by level and sex in Training Institutions under Government Ministries and Agencies

#### 2.9.4.6: Summary on Outturns by Year, Skill Level and Sex

Table 40 indicates a decline in outturns from 2014 to 2015 followed by a remarkable increase in 2016. Certificate level had the highest outturns at 34.1 percent followed by Proficiency at 32.5 and Diploma at 31.9 percent. Higher Diploma, Artisan and Craft recorded less than 1 percent each. The highest outturns for males were in Certificate level accounting for 19.9 percent while for



females it was in Proficiency accounting for 15.2 percent. Male outturns surpassed those of females in all level in the three years other than at Artisan level in year 2016 where the two were at par.

**Table 40: Summary of Outturns by Year, Level and Sex in Training Institutions under Government Ministries and Agencies, 2014-2016**

Year	Level												Sub-Total		Grand Total
	Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency				
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
<b>2014</b>	28	20	1370	937	1467	956	67	34	61	4	1719	1476	4712	3427	8139
%	0.4	0.3	16.8	11.5	18.1	11.8	0.8	0.4	0.8	0.1	21.1	18.4	57.89	42.11	100
<b>2015</b>	3	0	1579	1281	1012	489	73	0	0	0	1488	1209	4155	2979	7134
%	0.1	0	22.3	17.3	14.3	6.9	1.1	0	0	0	21	17.1	58.68	41.32	100
<b>2016</b>	56	40	2589	2337	3816	3050	8	8	73	1	2250	2118	8792	7554	16346
%	0.3	0.2	17.7	15.9	24.1	16.5	0.1	0.1	0.8	0	13.2	11.2	56.1	43.9	100
<b>Total</b>	<b>87</b>	<b>60</b>	<b>5538</b>	<b>4555</b>	<b>6295</b>	<b>4495</b>	<b>148</b>	<b>42</b>	<b>134</b>	<b>5</b>	<b>5457</b>	<b>4803</b>	<b>17659</b>	<b>13960</b>	<b>31619</b>
<b>Percentage</b>	<b>0.3</b>	<b>0.2</b>	<b>17.5</b>	<b>14.4</b>	<b>19.9</b>	<b>14.2</b>	<b>0.5</b>	<b>0.1</b>	<b>0.4</b>	<b>0.0</b>	<b>17.3</b>	<b>15.2</b>	<b>55.8</b>	<b>44.2</b>	<b>100</b>
	<b>0.5</b>		<b>31.9</b>		<b>34.1</b>		<b>0.6</b>		<b>0.4</b>		<b>32.5</b>		<b>100</b>		

## 2.10 AGRICULTURE AND RELATED TRAINING INSTITUTIONS

Agricultural institutions were established to provide the necessary skills for the agricultural sector. These institutions train lower and middle level personnel to help farmers to increase their output. The programmes offered are Agriculture, Forestry & Fishery; Manufacturing & Processing and Veterinary Services. Some institutions were also offering Business & Administration, Education, Health and Personal Services.

### 2.10.1: Outturns by Programme, Level and Sex in Agriculture and Related Institutions, 2014

The total outturns captured for 2014 were 900 out of which 63.3 percent were male and 36.7 percent female as presented in Table 41. The programmes with the highest outturns were Agriculture, Forestry & Fishery at 84.6 percent followed by Education at 10.3 percent and Personal Services at 2.9 percent, while the lowest were Veterinary Services at 1.9 percent and Health at less than 1 percent.

Certificate level registered the highest outturns at 57.9 percent followed by Diploma at 39.2 percent while the lowest was Artisan at 2.9 percent. At all levels, male outturns out-numbered the female except for Artisan where they did not have any outturns.

**Table 41:** Distribution of Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2014

Programmes	Level								Grand Total	Percent
	Diploma		Certificate		Artisan		Sub-Total			
	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	177	80	314	190	0	0	491	270	761	84.6
Education	67	26	0	0	0	0	67	26	93	10.3
Health	0	3	0	0	0	0	0	3	3	0.3
Personal Services	0	0	0	0	0	26	0	26	26	2.9
Veterinary	0	0	12	5	0	0	12	5	17	1.9
<b>Total</b>	<b>244</b>	<b>109</b>	<b>326</b>	<b>195</b>	<b>0</b>	<b>26</b>	<b>570</b>	<b>330</b>	<b>900</b>	<b>100</b>
Percentage	27.1	12.1	36.2	21.7	0	2.9	63.3	36.7	100	100
	<b>39.2%</b>		<b>57.9%</b>		<b>2.9%</b>					<b>100</b>

### 2.10.2: Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2015

The total outturns captured for the year 2015 was 939, out of which 65.9 per cent were male while 34.1 percent were female as indicated in Table 42. During the period under review, the programmes that had the highest number of outturns were Agriculture, Forestry and Fishery at 80.7 followed by Manufacturing and Processing and Education at 11.1 and 5.9 percent respectively while the lowest were Veterinary at 1.7 percent and Health at less than 1 percent.

For this year, outturns were at two levels only. Certificate had 70.7 percent with males constituting outturns at 47.4 and female 23.3 percent respectively. Diploma on the other hand had 29.3 with male constituting 18.5 percent and female 10.8 percent.

**Table 42:** Distribution of Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2015

Programmes	Level						Grand Total	Percent
	Diploma		Certificate		Sub-Total			
	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	108	65	396	189	501	254	755	80.72
Education	39	16	0	0	39	16	55	5.85
Health	0	6	0	0	0	6	6	0.63
Manufacturing and Processing	27	14	37	26	64	40	104	11.07
Veterinary	0	0	12	4	12	4	16	1.71
<b>Total</b>	<b>174</b>	<b>101</b>	<b>445</b>	<b>219</b>	<b>619</b>	<b>320</b>	<b>939</b>	<b>100</b>
Percentage	18.53	10.76	47.39	23.32	65.9	34.1	100	100
	<b>29.3%</b>		<b>70.7%</b>					<b>100</b>

**\*Programme categories as per ISCED 2011 classification**

### 2.10.3: Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2016

Table 43 shows that there was a total of 961 outturns captured for 2016. Out of these, male outturns were 69.7 percent and female 30.3 percent. The programmes with the highest outturns were Agriculture, Forestry and Fishery at 55.3 percent followed by Veterinary services at 30.9 percent and Education at 6.2 percent. The lowest was Health at less 1 percent.

The majority of outturns were at Certificate level at 52.8 percent with male and female accounting for 37.7 and 15.1 percent respectively. Diploma level outturns were at 47.2 percent with male and female accounting for 32 and 15.2 percent respectively.

**Table 43:** Distribution of Outturns by Programme, Level and Sex in Agriculture and related Institutions, 2016

Programmes	Level						Grand Total	Percentage
	Diploma		Certificate		Sub-Total			
	Male	Female	Male	Female	Male	Female		
Education	43	17	0	0	43	17	60	6.2
Business and Administration	14	8	0	0	14	8	22	2.3
Manufacturing and Processing	27	21	0	0	27	21	48	5.0
Agriculture, Forestry and Fishery	140	77	213	101	353	178	531	55.3
Veterinary	84	20	149	44	233	64	297	30.9
Health	0	3	0	0	0	3	3	0.3
Total	308	146	362	145	670	291	961	<b>100</b>
<b>Percentage</b>	32.0	15.2	37.7	15.1	69.7	30.3	100	
	<b>47.2</b>		<b>52.8</b>		<b>100</b>			

### 2.10.4: Trend Analysis on Outturns in Agriculture and Related Institutions, 2014 - 2016

This section presents trend analysis of outturns by programme, sex and skill level for Agriculture and related institutions for years 2014 to 2016. A total of 6 programmes were captured under this category of institutions. The following skill levels were recorded: Diploma, Certificate and Artisan. Artisan appeared only in 2014.

#### 2.10.4.1 Programmes with Highest Outturns

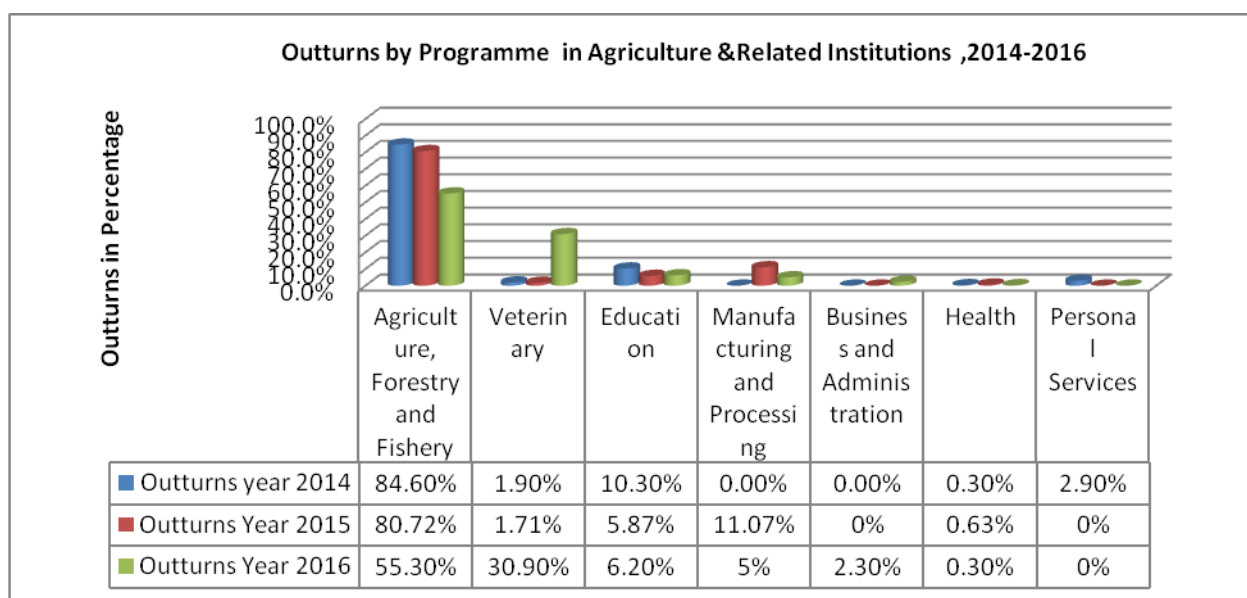
From Table 44 it can be observed that for the three-year period, Agriculture, Forestry & Fishery programme had the highest share of outturns followed by Veterinary Services.

Although Agriculture, Forestry & Fishery was leading, it was observed that a decline was recorded in 2016. On the other hand Veterinary Services programme recorded an increase of outturns from below 2 percent in 2014 and 2015 to 30.9 percent in 2016.

**Table 44:** Percentage Distribution of Outturns by programme and year for Agriculture & Related Institutions

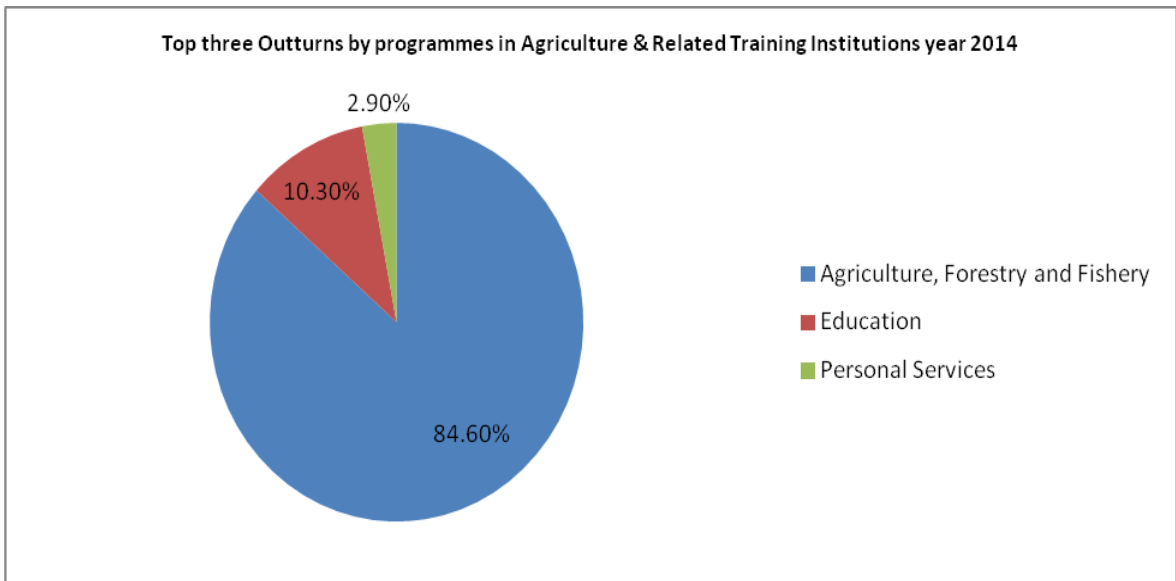
Programmes	2014	2015	2016
	Percentage	Percentage	Percentage
Agriculture, Forestry and Fishery	84.60	80.72	55.30
Veterinary Services	1.90	1.71	30.90
Education	10.30	5.85	6.20
Manufacturing and Processing	0.00	11.07	5
Business and Administration	0.00	0	2.30
Health	0.30	0.63	0.30
Personal Services	2.90	0	0

From Figure 45 below, it can be observed that Agriculture, Forestry and Fishery had the highest outturns in each of the three years. Business & Administration, Health and Personal Services, all recorded less than 5 percent in each of the three years under review.

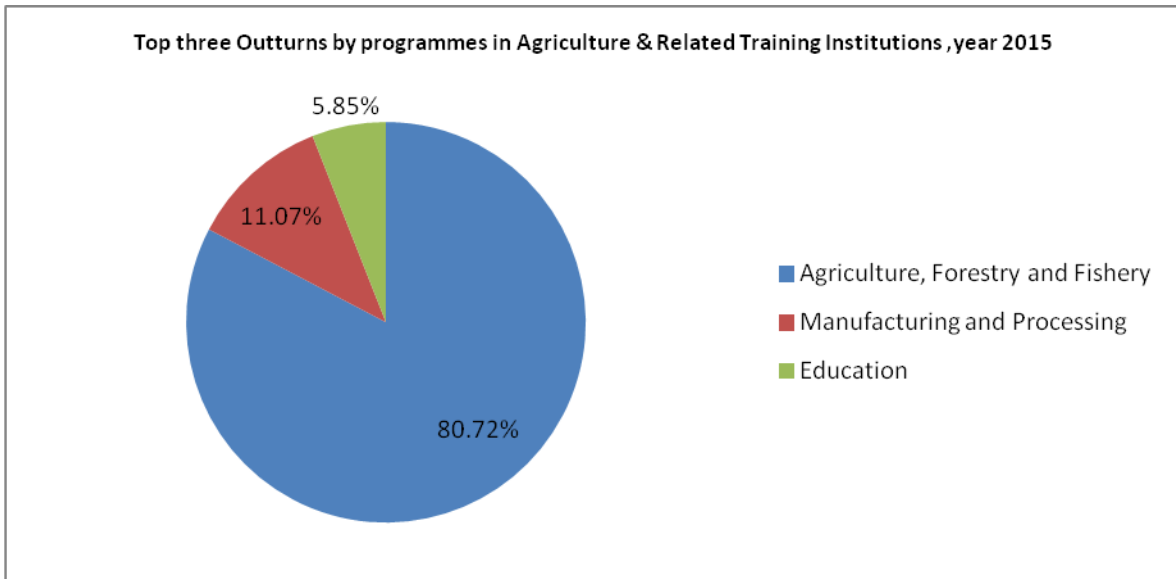


**Figure 45:** Outturns by programme and Year in Agriculture and related Institutions

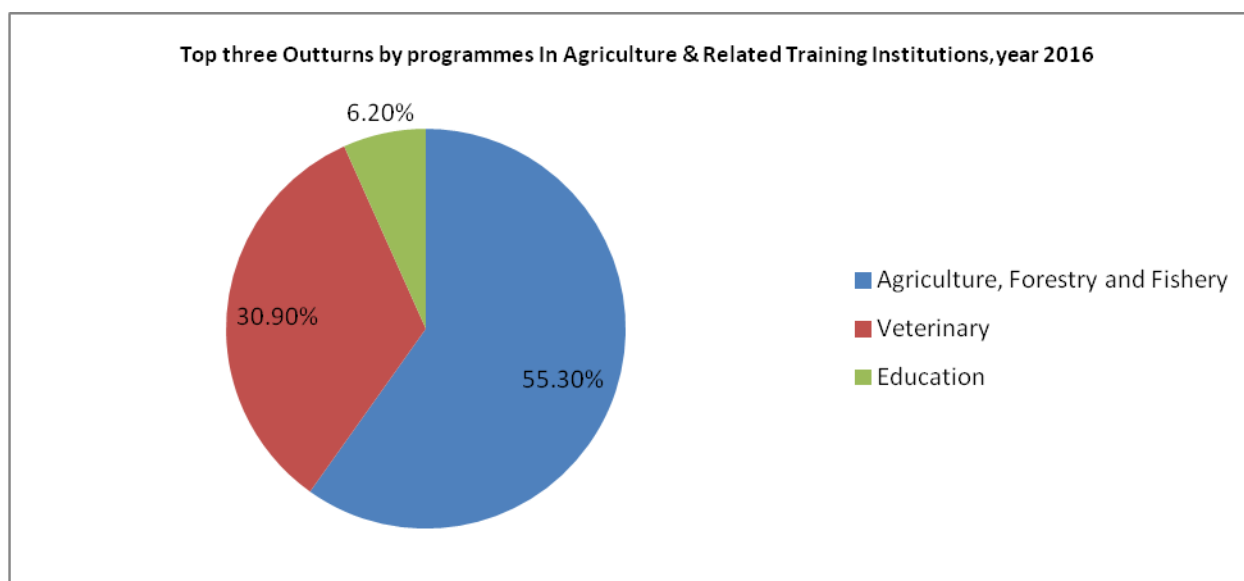
Figures 46, 47 and 48 present the top three programmes in each of the three years under review. In 2014, Agriculture, Forestry and Fishery accounted for 84.60 of the total outturns. In 2015 it accounted for 80.72 while in 2016 it accounted for 55.3 percent.



**Figure 46:** *Top three Outturns by programme in Agriculture and related Institutions, 2014*



**Figure 47:** *Top three Outturns by programme in Agriculture and related Institutions, 2015*



**Figure 48:** Top three Outturns by programme in Agriculture and related Institutions, 2016

#### 2.10.4.2: Programmes with Lowest Outturns

The table below indicates the programmes that performed worst in the 3-year period, occupying the Bottom 3 positions.

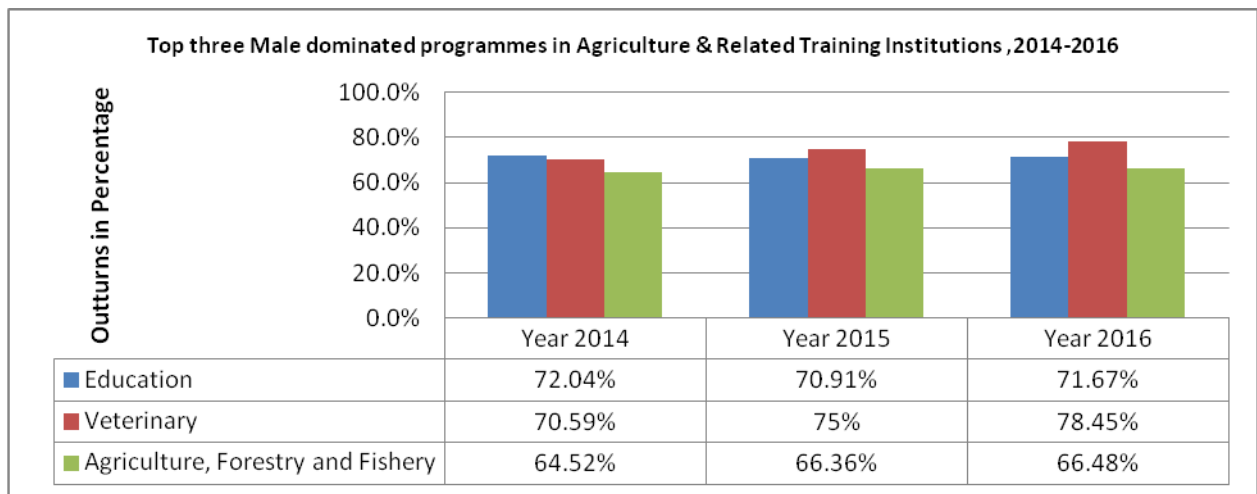
**Table 45:** Distribution of Programmes with lowest Outturns years 2014-2016 in Agriculture and related Institutions

Programmes	Percentage		
	2014	2015	2016
Veterinary	1.9	1.71	0
Health	0.3	0.63	0.3
Manufacturing and Processing	0	0	5
Business and Administration	0	0	2.3

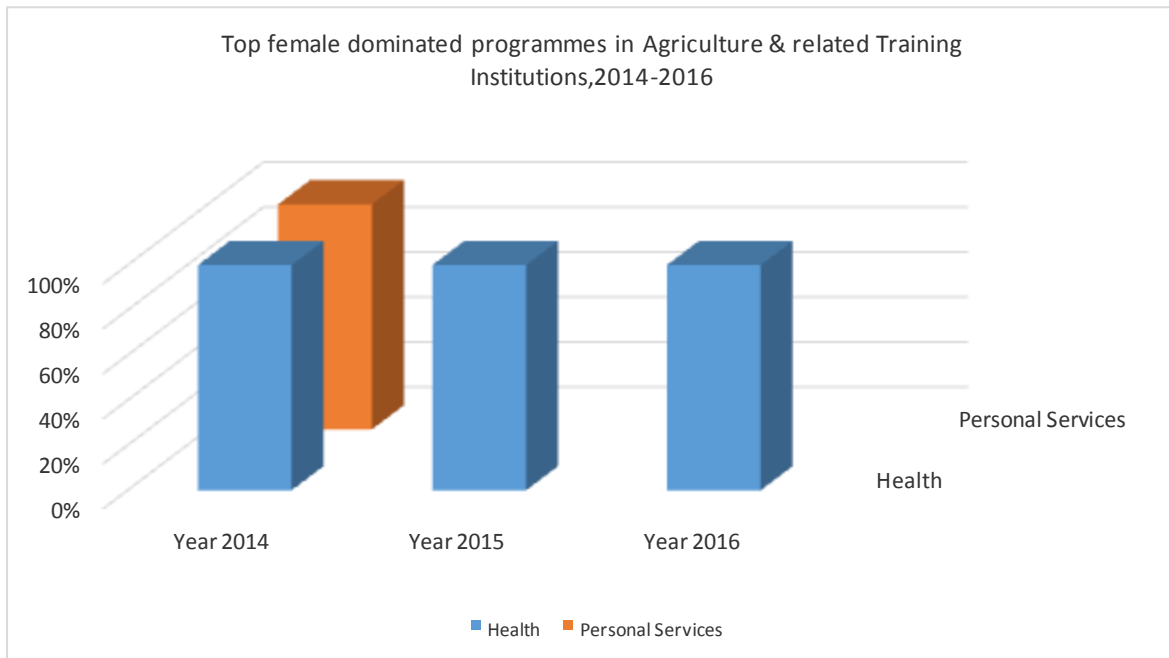
#### 2.10.4.3: Distribution of Outturns by Programme and Sex

Education programme took first position in year 2014 with 72.04 percent, and second position in year 2015 and 2016 with 70.91 percent and 71.67 percent respectively. It can also be observed that, Agriculture, Forestry and Fishery took third position in the three years under review.

Figures 49 and 50 show the top three male and female dominated programmes in the Agriculture and related Training Institutions. Education and Veterinary Services outturns were dominated by males in all the three years accounting for more than 70 percent while females dominated in Health and Personal Services where they accounted for 100 percent of all outturns recorded under the programmes.



**Figure 49:** Top three Male Dominated Outturns by programme in Agriculture and related Training Institutions, 2014-2016



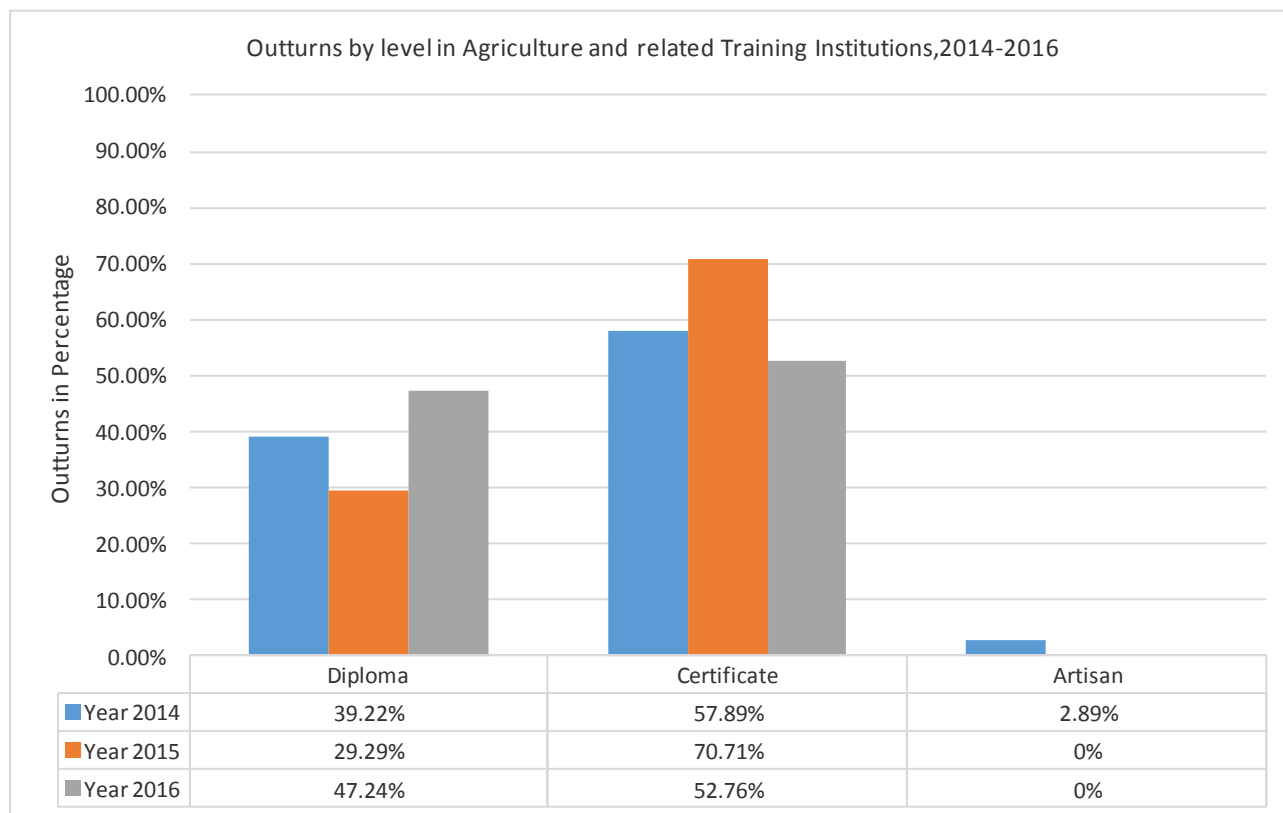
**Figure 50:** Top three Female dominated Outturns by programme in Agriculture and related Institutions, 2014-2016

#### 2.10.4.4: Overall change in outturns per Skill Level

The following skill levels were recorded under Agriculture & Related Institutions: Diploma, Certificate and Artisan. A total of about 5 programmes were captured under these levels.

The total number of outturns increased slightly by 4.3 percent from 2014 to 2015 and further by 2.3 percent from 2015 to 2016. Outturns at Diploma level decreased by 22 percent from 2014 to

2015 then increased by 65 percent from 2015 to 2016. At the Certificate Level outturns increased by 27.4 percent from 2014 to 2015 then decreased by 23.6 percent between 2015 and 2016. At Artisan level, there was a decrease from 2014 to 2015 and 2016 since only year 2014 had outturns at the level. A look at Figure 51 shows that Certificate level had the highest outturns in all the three years, registering 70.71 percent in 2015.

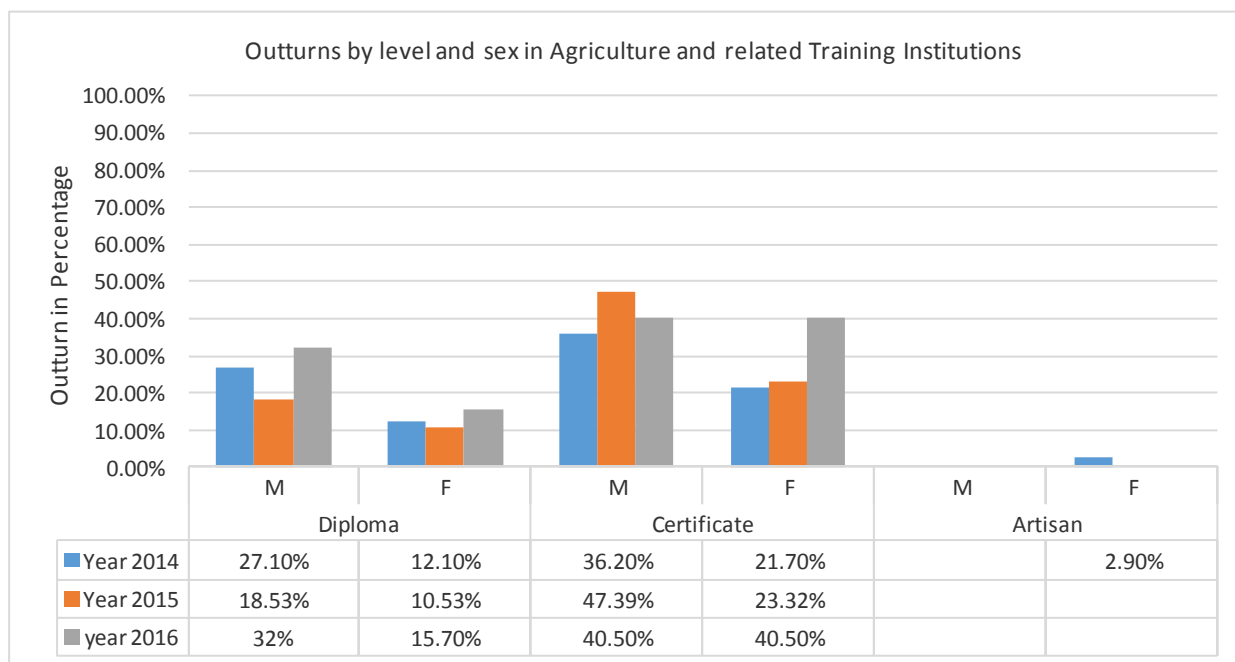


**Figure 51:** Outturns by level in Agriculture and Related Training Institutions, 2014-2016

#### 2.10.4.5: Distribution of Outturns by Skill Level and Sex

It was observed that male outturns outnumbered female in the two major levels-Diploma and Certificate, as illustrated in Figure 52. For males, there was a drop between 2014 and 2015, then an increase in 2016 in relation to Diploma level outturns. For females, a slight decrease then increase was noted between 2014 and 2015 and between 2015 and 2016 respectively. For Certificate level, a slight increase, then decrease is observed over the three years. For both sexes, outturns at Artisan level were negligible.





**Figure 52:** Outturns by Level and Sex in Agriculture and related Institutions, 2014-2016

#### 2.10.4.6: Summary of Outturns by Year, Skill Level and Sex

Table 46 indicates a slight increase of outturns between 2014 and 2015 followed by a significant one in 2016. It can be observed that the highest outturns during this period were in Certificate with 60.5 percent followed by Diploma with 38.6 percent and Artisan with 0.9 percent. Male outturns surpassed females at Diploma and Certificate in the three years. The trend however changed in 2014 at Artisan level where female outturns surpassed those of males. In 2015 and 2016, no outturns were recorded at Artisan level.

**Table 46:** Summary of Outturns by Year, Level and Sex in Agriculture and related Institutions, 2014-2016

Programmes	Level								Grand Total
	Diploma		Certificate		Artisan		Sub Total		
	M	F	M	F	M	F	M	F	
2014	244	109	326	195	0	26	570	330	900
Percentage	27.1	12.1	36.2	21.7	0	2.9	63.3	36.7	100
2015	174	101	445	219	0	0	619	320	939
Percentage	18.53	10.76	47.39	23.32	0	0	65.9	34.1	100
2016	308	146	362	145	0	0	670	291	961
Percentage	32	15.2	37.7	15.1	0	0	69.7	30.3	100
Total	726	356	1133	559	0	26	1859	941	2800
Percentage	25.9	12.7	40.5	20	0	0.9	66.4	33.6	100

## 2.11 NATIONAL YOUTH SERVICE TRAINING INSTITUTIONS

National Youth Service (NYS) was established in 1973 and was re-launched in 1995 after a 12-year break amidst major concerns about the high level of youth unemployment, academic under-achievement, lack of training opportunities for the young people and their escalating trend towards anti-social behavior. The organization aims at equipping youths with the necessary life coping skills to foster their personal and career development as well as to enhance their contribution to society and national development. The institutions under the National Youth Service are: School of Engineering, School of Agribusiness, School of Construction, School of Hospitality, School of Fashion, School of Enterprise and Technology, School of Public Duty and School of Oil and Gas.

Through the Corps programme, NYS is able to influence young people through emphasis on behaviour modification, volunteerism/patriotism, and career development. Corps Programmes include: Early Childhood Education (ECD), Teacher's Aides, Health Promotion Facilitators, Clerical Administration, Environmental Aides, Sales and Administration and Customer care.

### 2.11.1: Outturns by Programme, Level and Sex in National Youth Service Institutions, 2014

In the period under review, National Youth Service institutions had a total outturns of 1,045 captured, out of which 46.9 percent were female and 53.1 percent were male as presented in Table 47. The programmes with the highest outturns were Personal Services with 44.5 percent, and Engineering and Engineering Trades at 27.2 percent. The rest had less than 10 percent.

Craft level had the highest outturns at 50.4 percent followed by Diploma at 31.9 percent. Certificate level had the least outturns at 17.7 percent. Male outturns generally outnumbered female at both Diploma and Craft levels. However, female Certificate outturns were higher.

**Table 47:** Distribution of Outturns by Programme, Level and Sex in National Youth Service Institutions, 2014

Programmes	Diploma		Certificate		Craft		Sub-Total		Grand Total	%
	M	F	M	F	M	F	M	F		
Arts	15	35	15	35	0	0	30	70	100	9.6
Computing	0	0	15	22	15	42	30	64	94	9
Education	21	8	10	63	0	0	31	71	102	9.8
Engineering & Engineering Trades	0	0	0	0	243	41	243	41	284	27.2
Personal Services	151	103	0	25	70	116	221	244	465	44.5
<b>Grand Total</b>	<b>187</b>	<b>146</b>	<b>40</b>	<b>145</b>	<b>328</b>	<b>199</b>	<b>555</b>	<b>490</b>	<b>1045</b>	<b>100</b>
<b>Percentage</b>	<b>17.9</b>	<b>14</b>	<b>3.8</b>	<b>13.9</b>	<b>31.4</b>	<b>19</b>	<b>53.1</b>	<b>46.9</b>	<b>100</b>	

### 2.11.2: Outturns by Programme, Level and Sex in National Youth Service Institutions, 2015

In 2015 the total outturns captured were 826 out of which 55.7 percent were male and 44.3 percent female, as shown in Table 48. The programmes with the highest outturns were Personal Services at 48.5 percent followed by Engineering and Engineering Trades at 24.6 percent. Computing and Arts had the least outturns at 11.1 and 15.7 percent respectively.

During the year under review, Craft level had the highest outturns at 51.2 percent followed by Diploma at 37.1 percent. Certificate level had the least outturns at 11.8 percent. Male outturns generally outnumbered their female counterparts at Diploma and Craft levels. However, female outturns were higher at Certificate level.

**Table 48:** Distribution of Outturns by Programme, Level and Sex in National Youth Service Institutions, 2015

Programmes	Level								Grand Total	%
	Diploma		Certificate		Craft		Sub Total			
	M	F	M	F	M	F	M	F		
Arts	30	50	10	40	0	0	40	90	130	15.7
Computing	0	0	3	22	39	28	42	50	92	11.1
Engineering and Engineering Trades	0	0	0	0	174	29	174	29	203	24.6
Personal Services	140	86	0	22	64	89	204	197	401	48.5
Total	170	136	13	84	277	146	460	366	826	100
Percentage	20.6	16.5	1.6	10.2	33.5	17.7	55.7	44.3	100	
	37.1		11.8		51.2		100			

### 2.11.3: Outturns by Programme, Level and Sex in National Youth Service Institutions, 2016

For the year 2016, the total outturns captured were 1,352 out of which 54.9 percent were male and 45.1 percent female as presented in Table 49. The programmes with highest outturns were Personal Services at 53.6 percent followed by Engineering and Engineering Trades and Arts at 16.3 and 14.8 percent respectively. Education had the least outturns at 4.9 percent.

Diploma level had the highest outturns at 49.1 percent followed by Craft at 38.4 percent, while Certificate had the lowest outturns at 12.5 percent. Female outturns were higher at both Diploma and Certificate levels whereas males outnumbered females by large margins at Craft level.

**Table 49: Distribution of Outturns by Programme, Level and Sex in National Youth Service Institutions, 2016**

Programmes	Level								Grand Total	%
	Diploma		Certificate		Craft		Sub Total			
	M	F	M	F	M	F	M	F		
Arts	40	60	40	60	0	0	80	120	200	14.8
Computing	50	60	0	0	19	11	69	71	140	10.4
Education	3	14	8	41	0	0	11	55	66	4.9
Engineering and Engineering Trades	0	0	0	0	203	18	203	18	221	16.3
Personal Services	210	227	0	20	169	99	379	346	725	53.6
Total	303	361	48	121	391	128	742	610	1352	100
Percentage	22.4	26.7	3.6	8.9	28.9	9.5	54.9	45.1	100	
	49.1%		12.5%		38.4%		100			

#### 2.11.4: Trend Analysis on Outturns in National Youth Service Institutions, 2014-2016

This section presents trend analysis of outturns by programme sex and skill level for National Youth Service institutions in the years 2014 to 2016. A total of 5 programmes were captured under this category of institutions. The following skill levels were recorded: Diploma, Certificate and Craft.

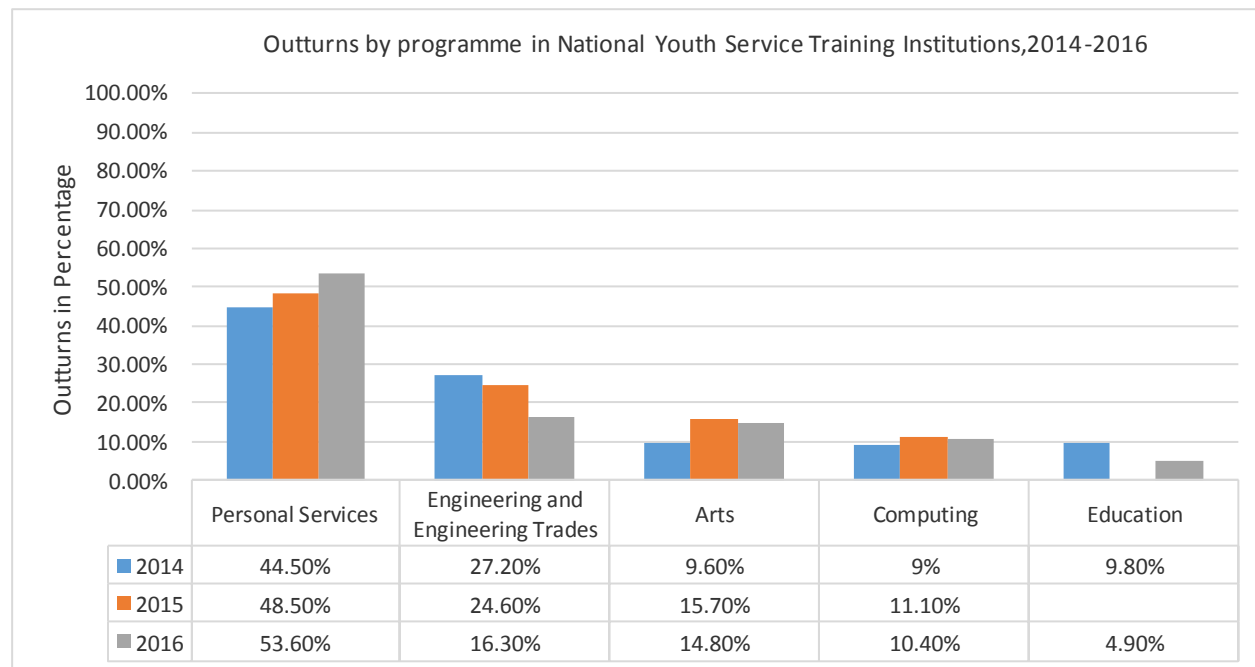
##### 2.11.4.1 Programmes with Highest Outturns

For the three-year period, Personal Services programme maintained the leading position in outturns comprising an average of 48.9 percent share of outturns from all the 5 programmes captured as seen in table 50. Engineering & Engineering Trades maintained second position with an average of 22.7 percent. Arts took third position with 13.4 percent; Computing and Education completed the list of programmes that were being offered in the National Youth Service institutions accounting for 10.1 and 4.9 percent respectively.

**Table 50: Percentage distribution of Outturns by programme and year, 2014-2016 in National Youth Service Institutions**

Programmes	2014	2015	2016	Average Percentage
	Percentage	Percentage	Percentage	
Personal Services	44.5	48.5	53.6	48.9
Engineering and Engineering Trades	27.2	24.6	16.3	22.7
Arts	9.6	15.7	14.8	13.4
Computing	9	11.1	10.4	10.1
Education	9.8		4.9	4.9

Figure 53 shows that Personal Services programme had the highest outturns in the three years under review. In the year 2016, it accounted for 53.6 percent of all the outturns. Education programme registered the lowest outturns in both 2015 and 2016.



**Figure 53:** Outturn by programme in National Youth Service Training Institutions, 2014-2016

#### 2.11.4.2: Programmes with Lowest Outturns

The table below indicates the programmes that performed worst in the three-year period, occupying the Bottom 2 positions out of the 5 programmes being offered. Computing appeared in all the three years while Arts and Education appeared only once among the programmes with least outturns in the National Youth Service institutions.

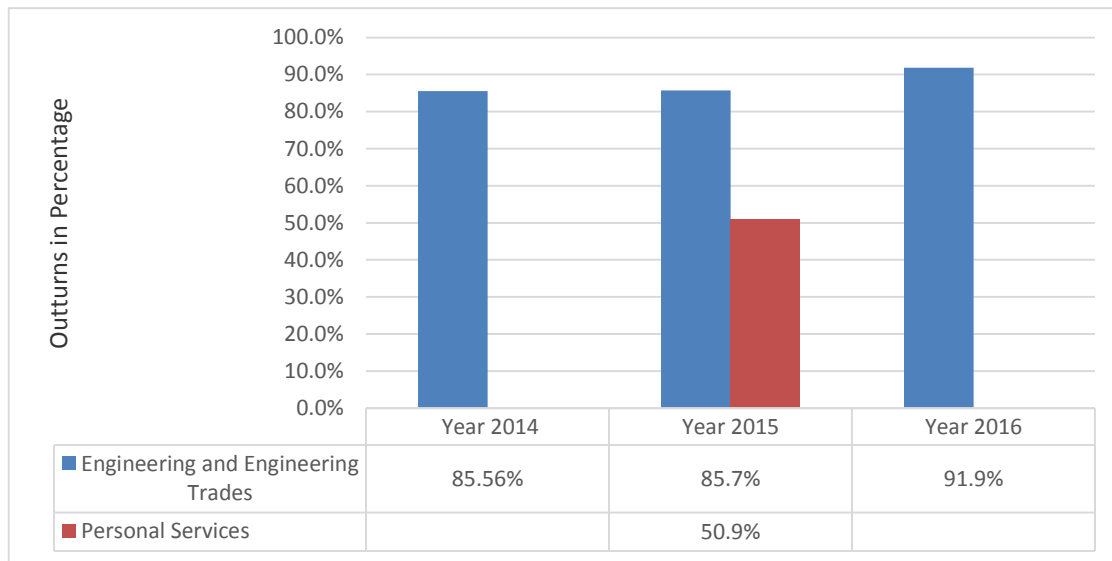
**Table 51:** Percentage distribution of programmes with least Outturns, 2014-2016 in National Youth Service Institutions

Programmes	2014	2015	2016
	Percentage	Percent-age	Percent-age
Arts	9.6	0	0
Computing	9	11.1	10.4
Education	0	0	4.9

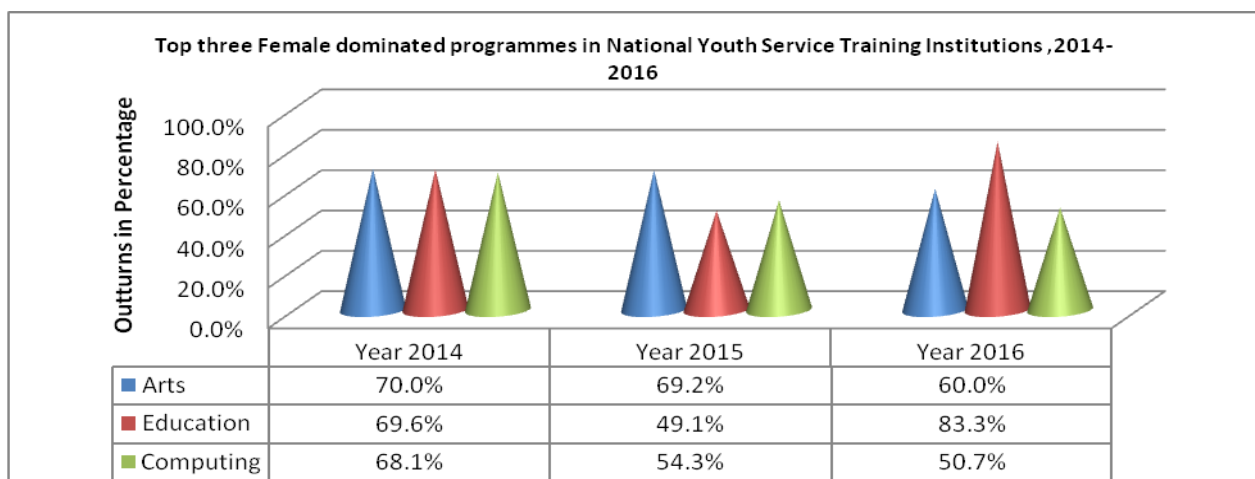
### 2.11.4.3: Distribution of Outturns by Programme and Sex

Figures 54 and 55 present the top three male and female dominated programmes over the three-year period. It can be observed that males dominated in Engineering & Engineering Trades programme for the three years running, with an average of 88 percent.

For female graduates, top programmes alternated amongst four programmes (Arts, Education, Computing and Personal Services). The top three were: Education 83.3 percent, Arts 70 percent and Computing 68 percent. It can be observed here that unlike in other categories of institutions, male outturns in Personal Services superseded those of females in year 2015.



**Figure 54:** Male dominated Outturns by Programmes in National Youth Service Training Institutions, 2014-2016



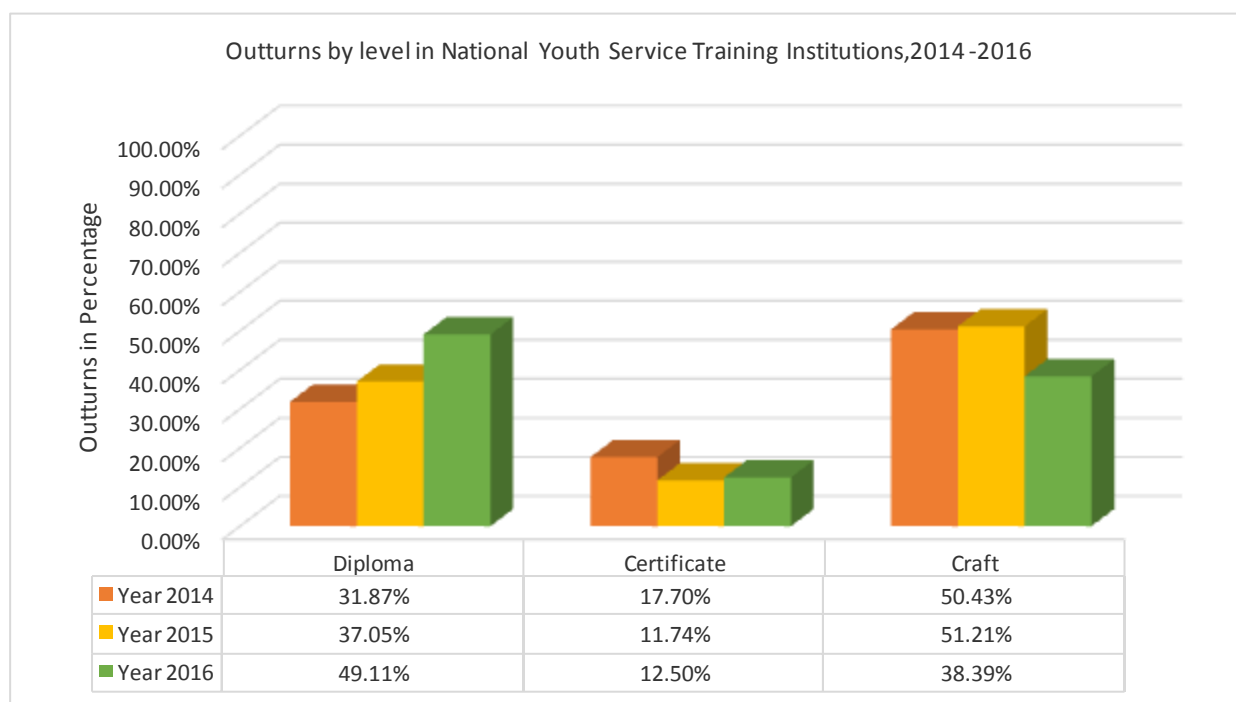
**Figure 55:** Top three Female dominated Outturns by programme in National Youth Service Training Institutions, 2014-2016

#### 2.11.4. Overall change in Outturns per Skill Level

The following skill levels were recorded under National Youth Service institutions: Diploma, Certificate and Craft. A total of about 5 programmes were captured under these levels.

The total outturns decreased by 20.9 percent from 2014 to 2015 then increased by 63.6 percent from 2015 to 2016. Outturns at Diploma level decreased slightly by 8.1 percent from 2014 to 2015 and increased by 116 percent from 2015 to 2016. At Certificate level, outturns decreased by 47.5 percent from 2014 to 2015 and increased by 74.2 percent between 2015 and 2016. At Craft level, outturns decreased by 19.7 percent from 2014 to 2015 and increased by 22.6 percent between 2015 and 2016.

In the figure below, it can be observed that in Diploma there was an upward trend while Craft level had the highest outturns in both 2014 and 2015, accounting for more than 50 percent in each of the two years.

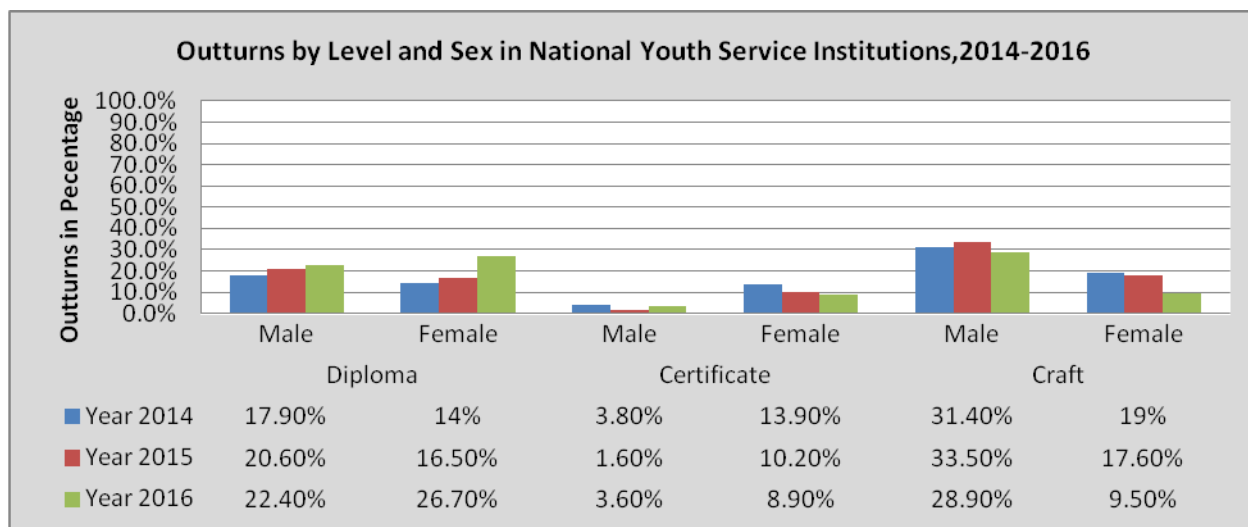


**Figure 56:** Outturns by level in National Youth Service Training Institutions, 2014-2016

#### 2.11.4.5 Distribution of Outturns by Skill level and Sex

Regarding outturns by level and sex, it can be observed that male outturns at Diploma level remained more or less constant whereas an increasing trend was evident for the females. At

Certificate level, females outnumbered males, while male outnumbered females at Craft level as seen in the figure below.



**Figure 57:** Outturns by level and sex in National Youth Service Institutions, 2014-2016

#### 2.11.4.6 Summary of Outturns by Year, Skill Level and Sex

From Table 52 slight fluctuations were observed between the years. The highest outturns during this period were at Craft level with 45.5 percent followed by Diploma at 40.5 percent and Certificate at 14 percent. Further, it is observed that at Diploma level male outturns surpassed those of females in year 2014 and 2015 with female surpassing males in 2016. At Certificate level, female outturns surpassed males in all the three years while male surpassed females at Craft level in all the three years under review.

**Table 52:** Summary of Outturns by Year, Level and Sex in National Youth Service Institutions, 2014-2016

Year	Level								Grand Total
	Diploma		Certificate		Craft		Sub Total		
	Male	Female	Male	Female	Male	Female	Male	Female	
2014	187	146	40	145	328	199	555	490	1045
Percentage	17.9	14	3.8	13.9	31.4	19	53.1	46.9	100
2015	170	136	13	84	277	146	460	366	826
Percentage	20.6	16.5	1.6	10.2	33.5	17.6	55.7	44.3	100
2016	303	361	48	121	391	128	742	610	1352
Percentage	22.4	26.7	3.6	8.9	28.9	9.5	54.9	45.1	100
Total	660	643	101	350	996	473	1757	1466	3223
Percentage	20.5	20	3.1	10.9	30.9	14.6	54.5	45.5	100



## 2.12 TECHNICAL VOCATIONAL COLLEGES

Technical Vocational colleges are regulated and licensed by the TVET Authority under the Ministry of Education and offer trade related programmes at Artisan to Diploma levels. They provide knowledge and skills for employment and normally admit Form Four leavers. They were initially started as technical schools to offer vocational, industrial and technical education in the early 1970s as a government effort to enhance employability of its youth and to equip them with practical skills.

### 2.12.1: Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2014

The total outturns captured for the year 2014 were 31,212 out of which 64 per cent were male while 36 percent were female as indicated in Table 53. The programmes that had the highest outturns were Engineering and Engineering Trades at 63.4 followed by Personal Services and Computing at 9.6 and 9.4 percent respectively. The rest eight programmes had less than 1 percent outturns each.

Artisan level had the highest outturns at 59 percent, followed by Certificate at 20.9 percent and Craft at 18.3 percent while Proficiency had the lowest outturns at less than 1 percent. At all levels male outturns were generally higher than female, except in isolated cases as in Arts, Manufacturing, Social Services, Personal Services; where females had a clear lead at all levels.

**Table 53: Distribution of Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2014**

Programmes	Level										Sub-Total		Grand Total	%
	Diploma		Certificate		Artisan		Craft		Proficiency					
	M	F	M	F	M	F	M	F	M	F	M	F		
Education	0	0	0	1	0	0	0	1	0	0	0	2	2	0.0
Arts	0	30	5	126	112	575	56	151	0	0	173	882	1055	3.4
Humanities	0	0	8	12	0	0	0	0	0	0	8	12	20	0.1
Journalism and Information	0	0	8	21	0	0	0	4	0	0	8	25	33	0.1
Business and Administration	1	3	72	72	114	126	7	4	0	0	194	205	399	1.3
Physical Sciences	0	0	0	0	6	0	1	0	0	0	7	0	7	0.0
Computing	32	24	539	482	673	552	292	326	5	2	1541	1386	2927	9.4
Engineering and Engineering Trades	227	12	2742	1047	9652	2621	2756	735	9	0	15386	4415	19801	63.4
Manufacturing and Processing	2	43	55	264	172	849	56	378	0	0	285	1534	1819	5.8
Architecture and Building	67	1	367	17	1070	14	352	40	0	0	1856	72	1928	6.2
Agriculture, Forestry and Fishery	5	3	20	8	0	0	0	0	0	0	25	11	36	0.1
Veterinary Services	18	12	11	7	0	0	0	0	0	0	29	19	48	0.2
Social Services	10	35	15	40	0	0	0	0	0	0	25	75	100	0.3
Personal Services	3	51	107	428	239	1618	47	512	0	0	396	2609	3005	9.6
Generic Programmes and Qualifications	0	0	31	1	0	0	0	0	0	0	31	1	32	0.1
<b>Total</b>	<b>365</b>	<b>214</b>	<b>3980</b>	<b>2526</b>	<b>12038</b>	<b>6355</b>	<b>3567</b>	<b>2151</b>	<b>14</b>	<b>2</b>	<b>19964</b>	<b>11248</b>	<b>31212</b>	<b>100.0</b>
%	1.2	0.7	12.8	8.1	38.6	20.4	11.4	6.9	0.0	0.0	64.0	36.0	100	

### **2.12.2: Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2015**

The total outturns captured for the year 2015 was 35,449 out of which 64.7 per cent were male while 35.3 percent were female as indicated in Table 54. The programmes that had the highest outturns were Engineering and Engineering Trades at 62.9 percent followed by Personal Services and Computing at 10.4 and 9.5 percent respectively. Architecture and Building had 6.5 percent and Manufacturing and Processing 6 percent. The remaining programmes had less than 5 percent each.

Artisan level had the highest outturns at 55.7 percent, followed by Certificate at 22.4 percent and Craft at 19.3 percent while Proficiency had the lowest outturns at less than 1 percent. At all levels the male outturns were higher than female, except in the same areas highlighted for previous year.

**Table 54:** Distribution of Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2015

Programmes	Level												Grand Total	
	Diploma		Certificate		Artisan		Craft		Proficiency		Sub total			
	M	F	M	F	M	F	M	F	M	F	M	F		
Education	0	0	0	0	1	1	0	0	0	0	1	1	<b>2</b>	0.0
Arts	0	29	8	133	60	444	33	150	0	0	101	756	<b>857</b>	2.4
Journalism and Information	0	0	21	23	0	0	11	10	0	0	32	33	<b>65</b>	0.2
Business and Administration	2	5	95	83	92	106	16	6	0	0	205	200	<b>405</b>	1.1
Life Sciences	0	0	0	0	0	0	1	0	0	0	1	0	<b>1</b>	0.0
Physical Sciences	0	0	0	28	9	0	0	0	0	0	9	28	<b>37</b>	0.1
Computing	49	46	640	609	773	554	364	312	7	3	1833	1524	<b>3357</b>	9.5
Engineering and Engineering Trades	283	18	3460	948	10573	2675	3366	935	38	0	17720	4576	<b>22296</b>	62.9
Manufacturing and Processing	2	66	73	371	151	883	129	449	0	0	355	1769	<b>2124</b>	6.0
Architecture and Building	112	26	545	17	1210	13	344	36	0	0	2211	92	<b>2303</b>	6.5
Agriculture, Forestry and Fishery	10	0	10	10	8	4	0	0	0	0	28	14	<b>42</b>	0.1
Veterinary	12	7	0	0	0	0	0	0	0	0	12	7	<b>19</b>	0.1
Social Services	57	82	46	69	0	0	0	0	0	0	103	151	<b>254</b>	0.7
Personal Services	1	53	56	672	212	1987	64	636	1	1	334	3349	<b>3683</b>	10.4
Generic Programmes and Qualifications	0	0	2	2	0	0	0	0	0	0	2	2	<b>4</b>	0.0
<b>Total</b>	<b>528</b>	<b>332</b>	<b>4956</b>	<b>2965</b>	<b>13089</b>	<b>6667</b>	<b>4328</b>	<b>2534</b>	<b>46</b>	<b>4</b>	<b>22947</b>	<b>12502</b>	<b>35449</b>	<b>100.0</b>
%	1.5	0.9	14.0	8.4	36.9	18.8	12.2	7.1	0.1	0.0	64.7	35.3	100.0	100.0

### **2.12.3: Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2016**

The total number of outturns captured for the year 2016 was 34,429 out of which 64.3 per cent were male and 35.7 per cent female as presented in Table 55. The programmes that had the highest outturns were Engineering and Engineering Trades at 61.6 percent followed by Personal Services and Computing at 11.5 and 9.8 percent respectively. The rest of the programmes had less than 7 percent.

Artisan level had the highest outturns at 54.5 percent, followed by Certificate at 23.9 percent and Craft at 19.1 percent while Proficiency had the lowest outturns at less than 1 percent. At all levels male outturns were higher than females, except in areas cited in previous years.

**Table 55:** Distribution of Outturns by Programme, Level and Sex in Technical Vocational Colleges, 2016

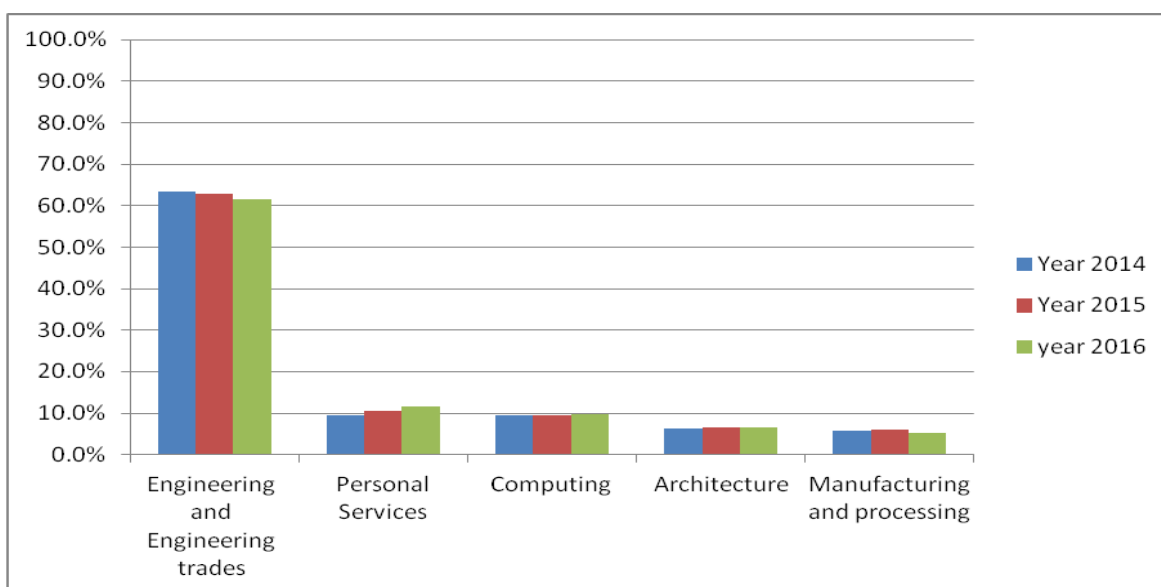
Programmes	Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total		Grand-Total	%
	M	F	M	F	M	F	M	F	M	F	M	F		
Education	0	0	0	1	0	1	0	0	0	0	0	2	2	0
Arts	1	32	7	199	45	425	51	142	0	0	104	798	902	2.6
Humanities	0	0	4	8	0	0	0	0	0	0	4	8	12	0
Journalism and Information	0	0	23	19	0	0	0	0	0	0	23	19	42	0.1
Business and Administration	21	35	95	115	84	100	5	2	0	0	205	252	457	1.3
Physical Sciences	0	0	1	15	10	0	0	0	0	0	11	15	26	0.1
Computing	57	53	671	687	760	616	215	253	35	20	1738	1629	3367	9.8
Engineering and Engineering Trades	203	18	3227	960	9879	2611	3488	761	51	0	16848	4350	21198	61.6
Manufacturing and Processing	6	40	73	326	289	658	89	341	0	0	457	1365	1822	5.3
Architecture and Building	82	9	607	24	1092	16	373	26	0	0	2154	75	2229	6.5
Agriculture, Forestry and Fishery	15	5	12	11	8	5	0	0	0	0	35	21	56	0.2
Veterinary	6	0	27	20	0	0	0	0	0	0	33	20	53	0.2
Social Services	49	61	36	50	0	0	0	0	0	0	85	111	196	0.6
Personal Services	1	69	57	859	228	1938	66	758	0	0	352	3624	3976	11.5
Generic Programmes and Qualifications	0	0	86	5	0	0	0	0	0	0	86	5	91	0.3
<b>Total</b>	<b>441</b>	<b>322</b>	<b>4926</b>	<b>3299</b>	<b>12395</b>	<b>6370</b>	<b>4287</b>	<b>2283</b>	<b>86</b>	<b>20</b>	<b>22135</b>	<b>12294</b>	<b>34429</b>	
%	1.28	0.94	14.31	9.58	36	18.5	12.45	6.63	0.25	0.06	64.3	35.7		

#### 2.12.4: Trend Analysis on Outturns in Technical Vocational Colleges, 2014– 2016

This section presents trend analysis of outturns by programme, sex and skill level for Technical Vocational Colleges in the years 2014 to 2016. A total of 15 programmes were captured under this category of institutions. The following skill levels were recorded: Diploma, Certificate, Artisan, Craft and Proficiency.

##### 2.12.4.1: Programmes with Highest Outturns

For the three-year period, Engineering & Engineering Trades programme maintained the leading position in outturns comprising 63 percent share of outturns from all the 15 programmes captured. Similarly, Personal Services and Computing programmes maintained second and third positions respectively throughout the period with average scores of 11 and 10 percent as seen in the figure below.



**Figure 58:** Top five outturns by Programmes in Technical Vocational Colleges, 2014-2016

##### 2.12.4.2: Programmes with Lowest Outturns

The table below indicates the programmes that performed worst in the 3-year period, occupying the bottom 3 positions.

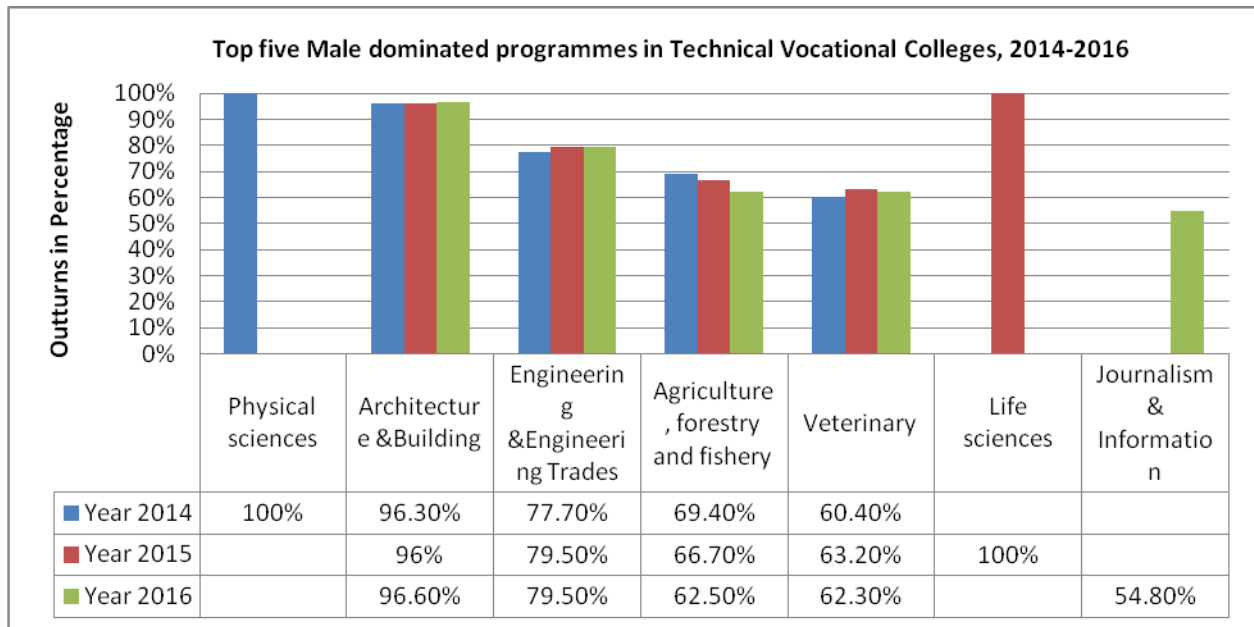
**Table 56:** Distribution of Programmes with the lowest outturns, 2014-2016 in Technical Vocational Colleges

Programmes	2014	2015	2016
	Percentage	Percentage	Percentage
Education	0.005	0.005	0.005
Humanities	0.06	0	0.03
Life sciences	0	0.002	0
Physical sciences	0.02	0	0.07
Veterinary	0	0.05	0

### 2.12.4.3: Distribution of Outturns by Programme and Sex

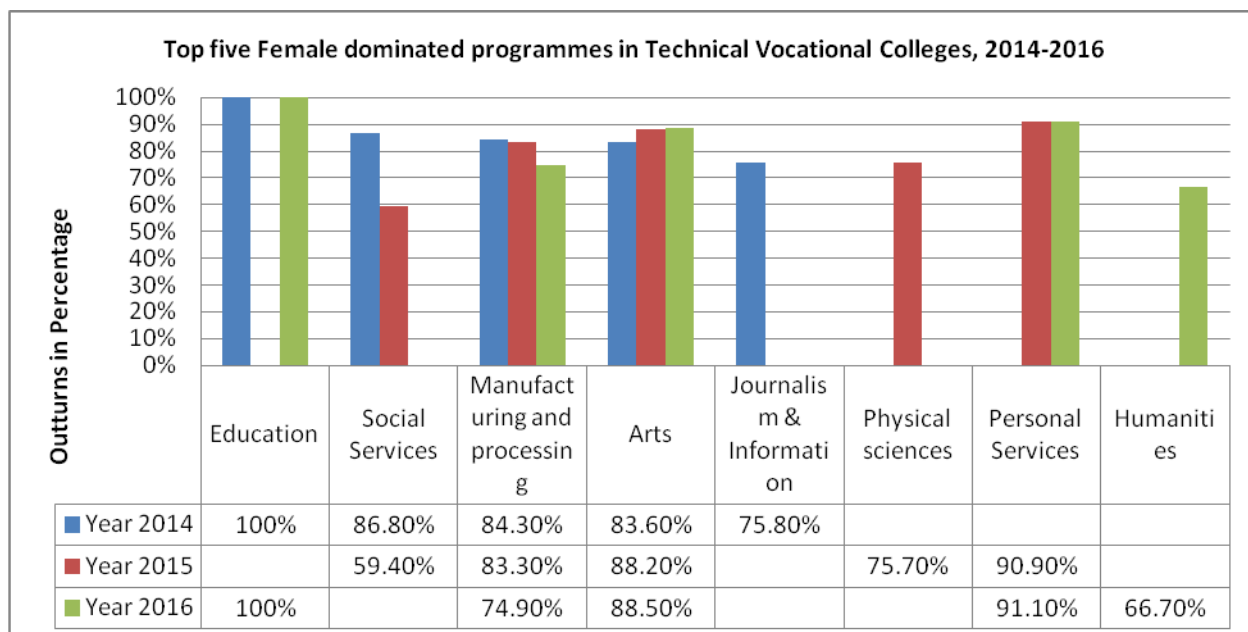
Figures 59 and 60 present the top five male and female dominated programmes in Technical Vocational Colleges. From Figure 59, it can be observed that males generally dominated in Architecture and Building, Engineering & Engineering Trades, Agriculture, Forestry & Fishery and Veterinary programmes for the three years. Physical Sciences, Life Sciences and Journalism and Information programmes featured once each.

For female outturns, Manufacturing & Processing and Arts programmes dominated the top two positions for the three years. Education, Personal Services and Social Services appeared twice while Journalism & Information, Physical Sciences and Humanities appeared once.



**Figure 59:** Top five male dominated programmes in Technical Vocational Colleges

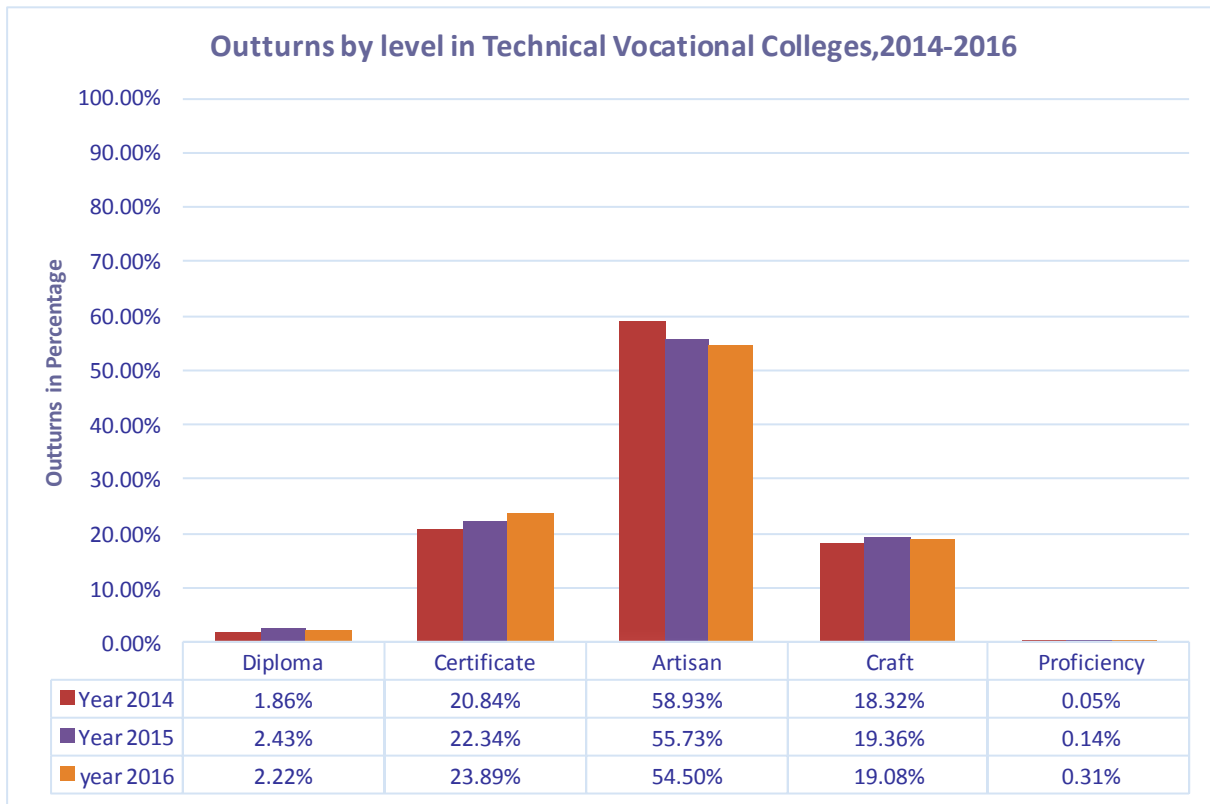




**Figure 60:** Top five Female dominated programmes in Technical Vocational Colleges, 2014-2016

#### 2.12.4.4: Overall Change in Outturns per Skill Level

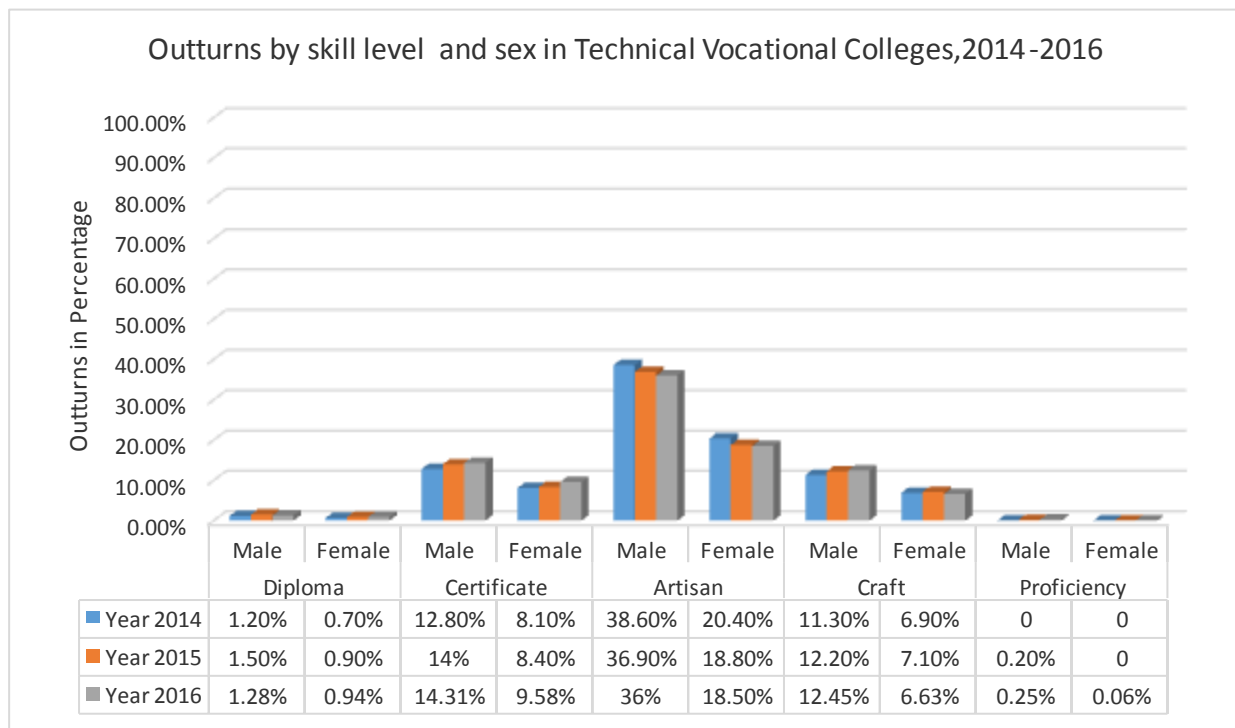
The total outturns increased by 13.5 percent from 2014 to 2015 but declined slightly by 2.8 percent from 2015 to 2016. Figure 61 shows that in the three-year period Artisan level had the highest number of outturns accounting for 58.9 percent in 2014, 55.7 percent in 2015 and 54.5 percent in 2016. This was followed by Certificate level with 20.84 per cent in 2014, 22.34 per cent in 2015 and 23.9 percent in 2016. Proficiency level recorded the lowest level of outturns over the three-year period accounting for less than 1 per cent per year. Overall, it can be observed that there was just a slight change in all the skill levels over the three-year period.



**Figure 61:** Outturns by Level in Technical Vocational Colleges, 2014-2016

**2.12.4.5: Distribution of Outturns by Skill Level and Sex**

The following skill levels were recorded under Technical Vocational Colleges: Diploma, Certificate, Artisan, Craft and Proficiency. From Figure 62 it can be observed that the highest outturns for both male and female in Technical Vocational Colleges were at Artisan level, followed by Certificate and Craft. Numbers for the other programmes were negligible. For all the three years, male outturns surpassed those of females.



**Figure 62:** Outturns by skill level and sex in Technical Vocational Colleges

#### 2.12.4.6: Summary of Outturns by Year, Skill Level and Sex

Table 57 shows slight fluctuations in outturns from one year to the next. The highest outturns during this period were in Artisan Level with 56.3 followed by Certificate with 22.4 Craft with 18.9, Diploma with 2.22 and Proficiency with 0.3 percent. The highest outturns for both males and females were at Artisan level in the three years, followed by Certificate. It is further observed that male outturns surpassed those of females in all levels in the three years under review.

**Table 57: Summary of Outturns by Year, Level and Sex in Technical Vocational Colleges, 2014-16**

YEAR	Level												Grand Total
	Diploma		Certificate		Artisan		Craft		Proficiency		Sub Total		
	M	F	M	F	M	F	M	F	M	F	M	F	
2014	365	214	3980	2526	12038	6355	3567	2151	14	2	19964	11248	31212
Percent	1.2	0.7	12.8	8.1	38.6	20.4	11.4	6.9	0	0	64	36	100
2015	528	332	4956	2965	13089	6667	4328	2534	46	4	22947	12502	35449
Percent	1.5	0.9	14	8.4	36.9	18.8	12.2	7.1	0.1	0	64.7	35.3	100
2016	441	322	4926	3299	12395	6370	4287	2283	86	20	22135	12294	34429
Percent	1.28	0.94	14.31	9.58	36	18.5	12.45	6.63	0.25	0.06	64.3	35.7	<b>100</b>
	<b>2.22</b>		<b>23.89</b>		<b>54.5</b>		<b>19.08</b>		<b>0.31</b>				

## 2.13 VOCATIONAL TRAINING CENTRES (VTCs)

These institutions fall under the mandate of County Governments. Vocational Training Centres offer courses leading to the award of Artisan, Craft and Certificate levels. However, some of the VTCs have introduced Diploma level courses.

### 2.13.1: Outturns by Programme, Level and Sex in Vocational Training Centres, 2014

The total outturns captured during the year under review was 21,712, out of which 63 per cent were male while 37 percent were female as indicated in Table 58. The programmes that had the highest outturns were: Manufacturing and Processing at 71.4 percent followed by Computing and Personal Services at 10.2 and 8.9 percent respectively, while Social Services, Physical Sciences, Humanities, Education and Arts programmes had less than 1 percent each.

Artisan level had the highest outturns at 61.8 percent, followed by Certificate, Craft and Diploma at 19.6, 16.8 and 1.7 percent respectively. Proficiency level had the lowest outturns at less than 1 percent. At all levels male outturns were higher than female, except in Personal Services where females had a clear lead.

**Table 58:** Distribution of Outturns by Programme, Level and Sex in Vocational Training Centres, 2014

Programmes	Level												Grand Total	%
	Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total			
	M	F	M	F	M	F	M	F	M	F	M	F		
Architecture and Building	33	1	176	4	689	11	223	5	0	0	1121	21	1142	5.3
Arts	0	0	0	0	7	0	0	1	0	0	7	1	8	0
Business and Administration	1	0	165	93	91	113	7	4	0	0	264	210	474	2.2
Computing	7	3	390	394	582	447	182	207	5	2	1166	1053	2219	10.2
Education	3	5	0	1	0	0	0	1	0	0	3	7	10	0
Engineering & Engineering Trades	77	10	83	12	80	19	68	6	0	0	308	47	355	1.6
Humanities	0	0	8	12	0	0	0	0	0	0	8	12	20	0.1
Manufacturing and Processing	95	58	1640	1018	7047	3042	1757	846	9	0	10548	4964	15512	71.4
Personal Services	3	65	16	235	190	1105	35	287	0	0	244	1692	1936	8.9
Physical Sciences	0	0	0	0	6	0	1	0	0	0	7	0	7	0
Social Services	0	0	8	21	0	0	0	0	0	0	8	21	29	0.1
<b>Total</b>	<b>219</b>	<b>142</b>	<b>2486</b>	<b>1790</b>	<b>8692</b>	<b>4737</b>	<b>2273</b>	<b>1357</b>	<b>14</b>	<b>2</b>	<b>13684</b>	<b>8028</b>	<b>21712</b>	<b>100</b>
<b>Percentage</b>	<b>1</b>	<b>0.7</b>	<b>11.4</b>	<b>8.2</b>	<b>40</b>	<b>21.8</b>	<b>10.5</b>	<b>6.3</b>	<b>0.1</b>	<b>0</b>	<b>63</b>	<b>37</b>	<b>100</b>	
	<b>1.7%</b>		<b>19.6%</b>		<b>61.8%</b>		<b>16.8%</b>		<b>0.1%</b>		<b>100</b>			

### 2.13.2: Outturns by Programme, Level and Sex in Vocational Training Centres, 2015

The total outturns captured for the year 2015 was 24,617 out of which 64.6 per cent were male while 35.4 per cent were female as indicated in Table 59. During the period under review, programmes that had the highest outturns were Manufacturing and Processing at 70.6 per cent, followed by Computing at 10.2 and Personal Services at 9.9 per cent. The rest had less than 1 per cent each.

Artisan level had the highest outturns at 59 per cent, followed by Certificate and Craft at 21.6 and 17.7 per cent respectively while the lowest were Diploma at 1.8 per cent and Proficiency at less than 1 per cent. Male outturns outnumbered female at all levels.

**Table 59:** Distribution of Outturns by Programme, Level and Sex in Vocational Training Centres, 2015

Programmes	Level												Grand Total	%
	Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total			
	M	F	M	F	M	F	M	F	M	F	M	F		
Architecture and Building	47	20	285	11	797	9	191	9	0	0	1320	49	1369	5.6
Arts	0	0	4	0	7	0	18	1	0	0	29	1	30	0.1
Business and Administration	0	2	165	101	72	95	16	6	0	0	253	204	457	1.9
Computing	16	13	463	501	696	437	196	181	7	3	1378	1135	2513	10.2
Education	0	0	0	0	1	1	0	0	0	0	1	1	2	0
Engineering & Engineering Trades	42	0	66	9	78	4	141	7	0	0	327	20	347	1.4
Life Sciences	0	0	0	0	0	0	1	0	0	0	1	0	1	0
Manufacturing and Processing	127	84	2233	954	7775	2971	2155	1064	14	0	12304	5073	17377	70.6
Personal Services	3	76	34	407	158	1407	54	301	1	1	250	2192	2442	9.9
Physical Sciences	0	0	0	28	9	0	0	0	0	0	9	28	37	0.2
Social Services	0	0	21	21	0	0	0	0	0	0	21	21	42	0.2
<b>Total</b>	<b>235</b>	<b>195</b>	<b>3271</b>	<b>2032</b>	<b>9593</b>	<b>4924</b>	<b>2772</b>	<b>1569</b>	<b>22</b>	<b>4</b>	<b>15893</b>	<b>8724</b>	<b>24617</b>	<b>100</b>
Percentage	1	0.8	13.3	8.3	39	20	11.3	6.4	0.1	0	64.6	35.4	100	1
	<b>1.8</b>		<b>21.6</b>		<b>59</b>		<b>17.7</b>		<b>0.1</b>		<b>100</b>			

### 2.13.3: Outturns by Programme, Level and Sex in Vocational Training Centres, 2016

The total outturns captured for the year 2016 was 23,629 out of which 65.2 per cent were male while 34.8 per cent were female as indicated in Table 60. During the year, the programmes that had the highest outturns were: Manufacturing and Processing at 68.6, followed by Personal Services and Computing at 10.7 and 10.6 per cent respectively, while Arts, Education, Humanities, Physical Sciences and Social Services had less than 1 per cent each.

Artisan level had the highest outturns at 58.4 percent, followed by Certificate at 22 percent and Craft at 18 percent while the lowest were Diploma at 1.6 and Proficiency at less than 1 percent. Male outturns outnumbered female at all levels.

**Table 60:** Distribution of Outturns by Programme, Level and Sex in Vocational Training Centres, 2016

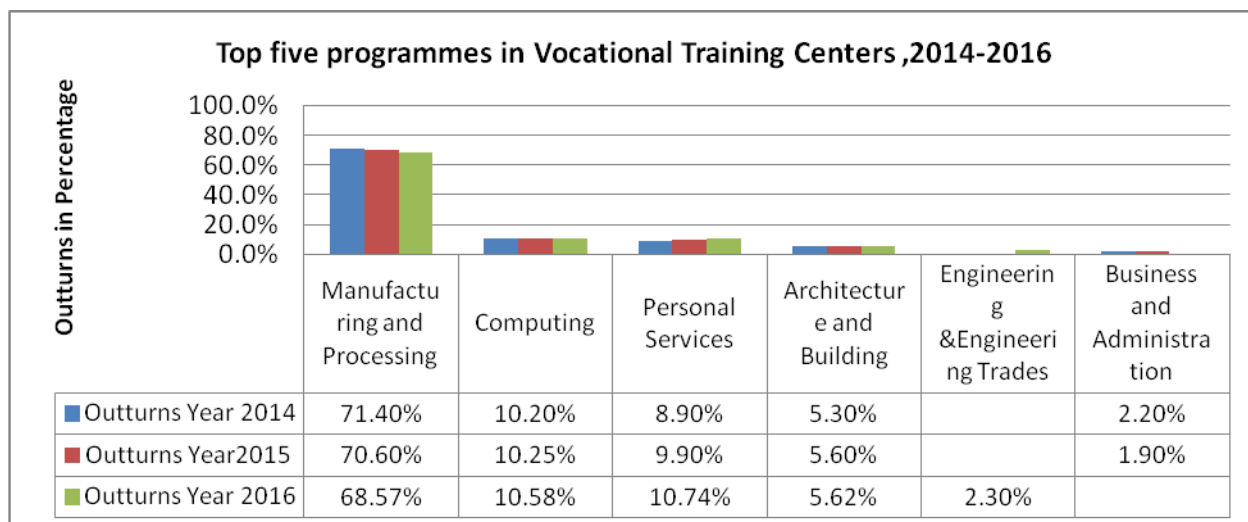
Programmes	Level												Grand Total	%
	Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total			
	M	F	M	F	M	F	M	F	M	F	M	F		
Architecture and Building	44	4	334	12	705	14	214	2	0	0	1297	32	1329	5.62
Arts	0	0	4	0	4	0	17	0	0	0	25	0	25	0.11
Business and Administration	19	3	129	102	67	76	4	0	0	0	219	181	400	1.69
Computing	18	13	476	463	673	468	189	201	0	0	1356	1145	2501	10.58
Education	4	5	0	1	0	1	0	0	0	0	4	7	11	0.05
Engineering & Engineering Trades	12	0	32	5	172	15	297	10	0	0	513	30	543	2.3
Humanities	0	0	4	8	0	0	0	0	0	0	4	8	12	0.05
Manufacturing and Processing	128	59	2019	1096	7502	2571	2003	811	13	0	11665	4537	16202	68.57
Personal Services	21	66	24	420	197	1317	55	438	0	0	297	2241	2538	10.74
Physical Sciences	0	0	1	15	10	0	0	0	0	0	11	15	26	0.11
Social Services	0	0	23	19	0	0	0	0	0	0	23	19	42	0.18
<b>Total</b>	<b>246</b>	<b>150</b>	<b>3046</b>	<b>2141</b>	<b>9330</b>	<b>4462</b>	<b>2779</b>	<b>1462</b>	<b>13</b>	<b>0</b>	<b>15414</b>	<b>8215</b>	<b>23629</b>	<b>100</b>
<b>Percentage</b>	1	0.6	12.9	9.1	39.5	18.9	11.8	6.2	0.1	0	65.2	34.8	100	
	1.6		22		58.4		18		0.1		100			

#### 2.13.4: Trend Analysis on Outturns in Vocational Training Centres, 2014- 2016

This section presents trend analysis of outturns by programme, sex and skill level for Vocational Training Centres in the years 2014 to 2016. A total of 12 programmes were captured under this category of institutions. The following skill levels were recorded: Diploma, Certificate, Artisan, Craft and Proficiency.

##### 2.13.4.1: Programmes with Highest Outturns

Figure 63 presents the top five programmes in Vocational Training Centres. Manufacturing & Processing had the highest outturns in the three years under review accounting for 71.4 percent and 70.60 percent in 2014 and 2015 respectively, and 68.57 percent in 2016. Computing and Personal Services programmes had about 10 percent each. Both Engineering & Engineering Trades and Business & Administration accounted for less than 5 percent.



**Figure 63:** Top five Outturns by Programmes in Vocational Training Centres, 2014-2016

#### 2.13.4.2: Programmes with Lowest Outturns

The table below indicates the programmes that performed worst in the three-year period, occupying the bottom three positions.

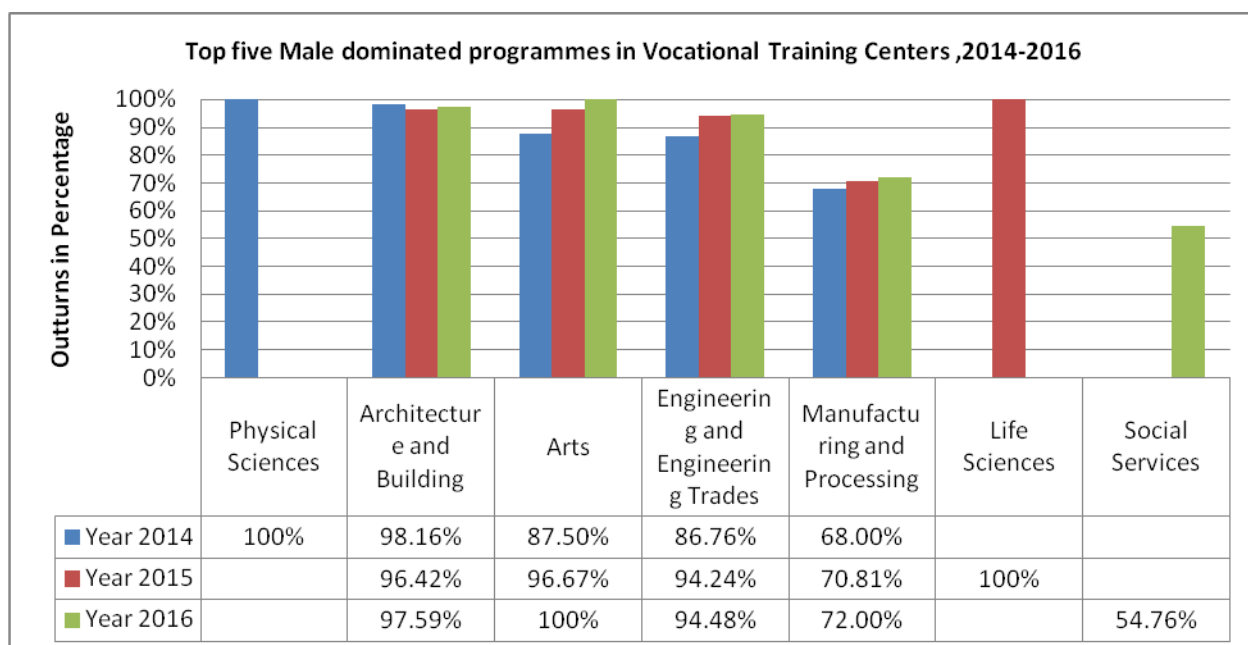
**Table 61:** Distribution of programmes with the lowest Outturns, 2014-2016 in Vocational Training Centres

Programmes	2014	2015	2016
	Percentage	Percentage	Percentage
Arts	0.03	0.1	0.11
Physical Sciences	0.03	0	0.11
Education	0.04	0.008	0.05
Life Sciences	0	0.004	0
Humanities	0	0	0.05

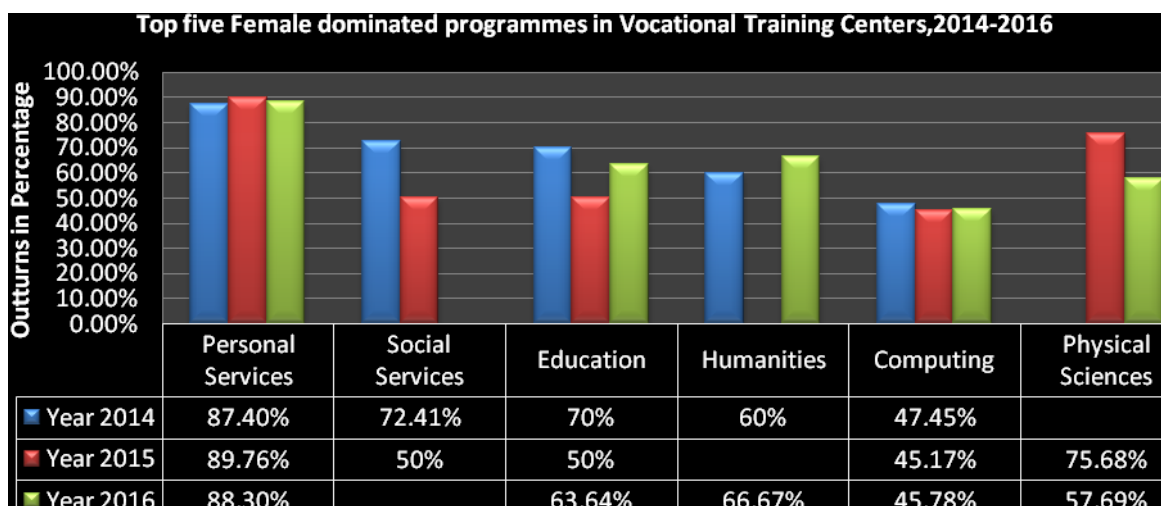
#### 2.13.4. 3: Distribution of Outturns by Programme and Sex

From the table below, it can be observed that for male outturns, Architecture & Building, Arts and Engineering & Engineering Trades programmes dominated in the top 3.

Figures 64 and 65 present the top five male and female dominated programmes in the Vocational Training Centres. Males dominated in Architecture Building; Arts; Engineering & Engineering Trades and Manufacturing and Processing, while females dominated in Personal Services, Education and Computing in all the three years under review. Physical Sciences, Social Sciences and Humanities featured twice.



**Figure 64:** Top five male dominated programmes in Vocational Training Centres, 2014-2016



**Figure 65:** Top five Female dominated programmes in Vocational Training Centres, 2014-2016

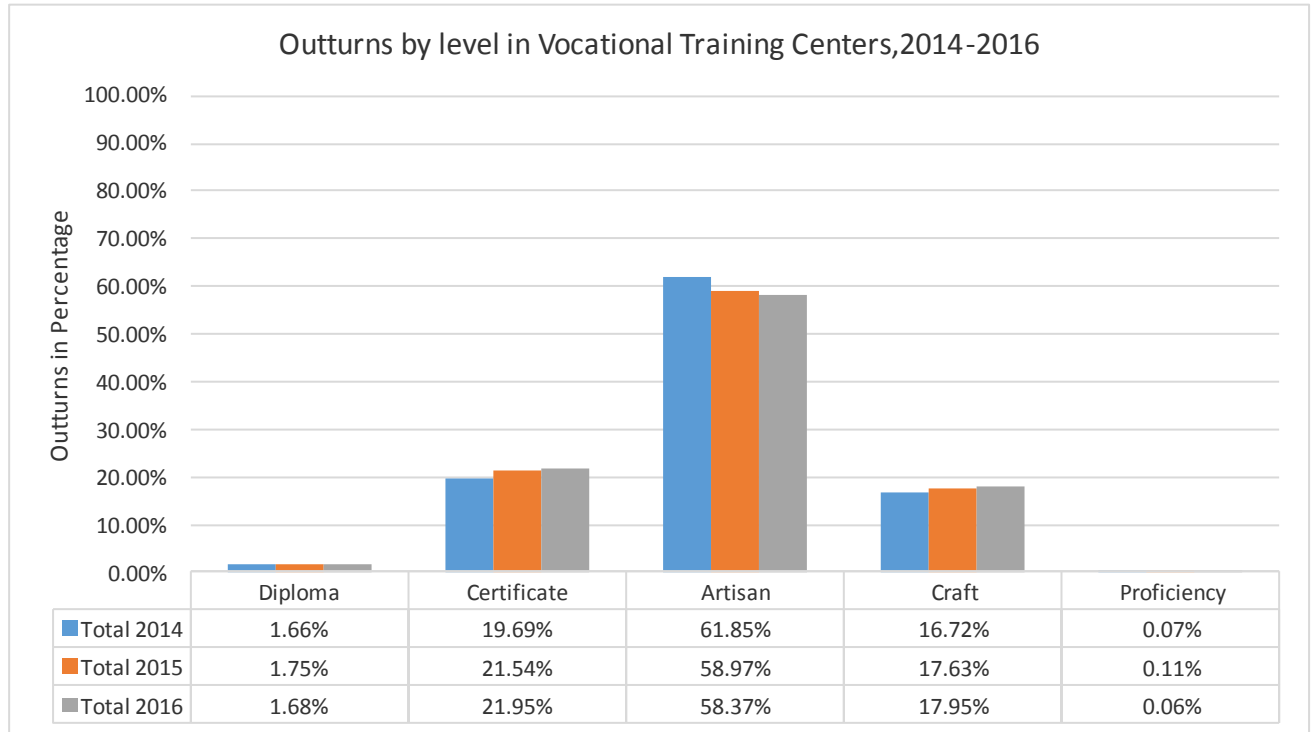
#### 2.13.4.4: Overall change in Outturns per Skill Level

The following skill levels were recorded under Vocational training centres: Diploma, Certificate, Artisan, Craft and Proficiency. The total number of Outturns increased slightly by 13.3 percent from 2014 to 2015 but declined slightly by 4 percent from 2015 to 2016.

Outturns at Diploma level increased slightly by 16 percent from 2014 to 2015 and decreased by 7.9 percent from 2015 to 2016. At the Certificate Level outturns increased by 24.1 percent from 2014 to 2015 and decreased slightly by 2.2 percent between 2015 and 2016.



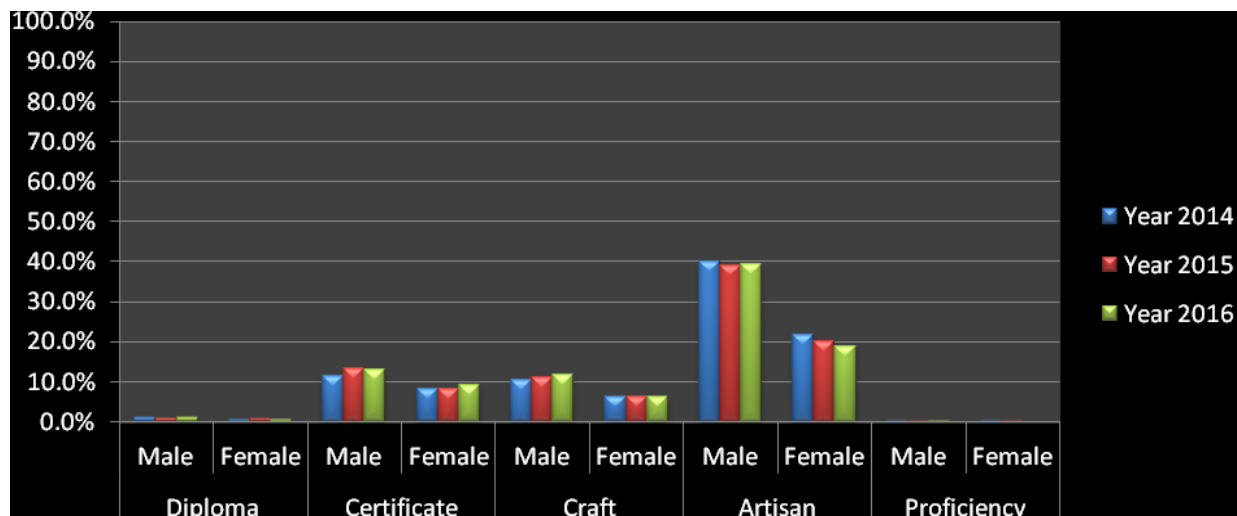
Artisan level had the largest share of outturns, which increased by 8.1 percent between 2014 and 2015 then decreased by 4.9 percent in 2016. At Craft level, outturns increased by 19.6 percent between 2014 and 2015 then decreased slightly by 2.3 percent in 2016. At Proficiency level, outturns increased by 62.5 percent from 2014 to 2015 then decreased by 50 percent between 2015 and 2016 as shown in Figure 66.



**Figure 66:** Outturns by Level in Vocational Training Centres, 2014-2016

#### 2.13.4.5: Distribution of Outturns by Skill Level and Sex

The following skill levels were recorded under Vocational Training Centres: Diploma, Certificate, Artisan, Craft and Proficiency. It was observed that for males and females, Artisan level outturns were the highest followed by Certificate and Craft. Numbers for Diploma and Proficiency were negligible.



**Figure 67:** Outturns by Level and Sex in Vocational Training Centres, 2014-2016

#### 2.13.4.6: Summary of Outturns by Year, Skill Level and Sex

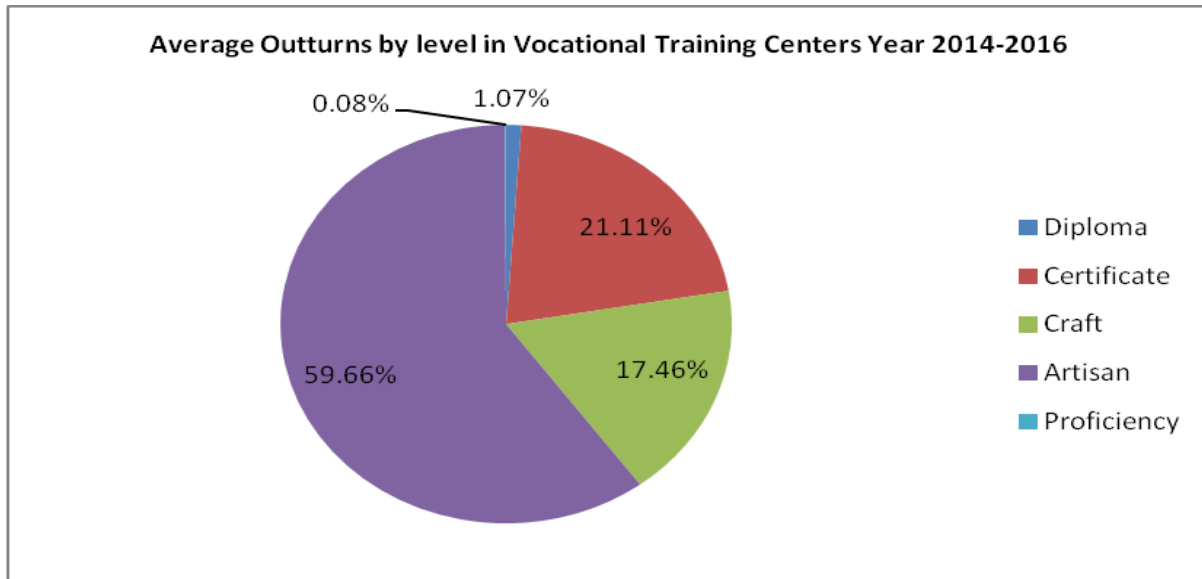
Table 62 shows slight fluctuations in outturns between the years. The highest outturns during this period were in Artisan level with 52.37 percent, followed by Certificate with 21.75 percent, Craft with 17.95 percent, Diploma with 1.67 and Proficiency with 0.06 percent respectfully.

It is further observed that Artisan level had the highest outturns for both males and females. However, male outturns surpassed those of females in all skill levels in the three years under review.

**Table 62:** Summary of Outturns by Year, Level and Sex in Vocational Training Centres, 2014-2016

Year	Level										Total
	Diploma		Certificate		Artisan		Craft		Proficiency		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Total 2014	219	142	2486	1790	8692	4737	2273	1357	14	2	21712
Percentage	1.01	0.65	11.45	8.24	40.03	21.82	10.47	6.25	0.06	0.01	100
Total 2015	235	195	3271	2032	9593	4924	2772	1569	22	4	24617
Percentage	0.95	0.79	13.29	8.25	38.97	20.00	11.26	6.37	0.09	0.02	100.00
Total 2016	246	150	3046	2141	9330	4462	2779	1462	13	0	23629
Percentage	1.04	0.63	12.89	9.06	39.49	18.88	11.76	6.19	0.06	0.00	100
	1.67		21.95		58.37		17.95		0.06		100

Figure 68 presents average outturns by level of award for the three years. Artisan level accounted for the highest with 59.66 percent, followed by Certificate at 21.11 percent, Craft 17.4 percent, Diploma 1.07 percent and Proficiency was the least with 0.08 percent.



**Figure 68:** Average Outturns by level in Vocational Training Centres, 2014-2016

## 2.14 VOCATIONAL REHABILITATION CENTRES

Vocational Rehabilitation Centres are under the State Department responsible for Social Development and cater for training of persons with various disabilities. Programmes offered during the period under review were Computing, Manufacturing and Processing and Personal Services.

### 2.14.1: Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2014

The total outturns captured for the year 2014 was 332 out of which 56.3 per cent were male and 43.7 female as indicated in Table 63. The programmes that had the highest outturns were Manufacturing and Processing at 73.5 percent followed by Computing at 16 percent and the lowest was Personal Services at 10.5 percent.

Artisan level had the highest outturns at 49.4 percent followed by Craft at 25.9 and Certificate at 15.9 percent. Diploma level had the lowest outturns at 8.7 percent. Males had higher outturns at all levels except at Diploma level where females recorded higher outturns.

**Table 63:** Distribution Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2014

Programme	Level										Grand Total	%
	Diploma		Certificate		Artisan		Craft		Sub-total			
	M	F	M	F	M	F	M	F	M	F		
Computing	0	0	29	24	0	0	0	0	29	24	53	15.96
Manufacturing and Processing	4	10	0	0	90	63	61	16	155	89	244	73.49
Personal Services	0	15	0	0	2	9	1	8	3	32	35	10.54
Total	4	25	29	24	92	72	62	24	187	145	332	100
	1.2	7.5	8.7	7.2	27.7	21.7	18.7	7.2	56.3	43.7	100	
Percentage	8.7%		15.9%		49.4%		25.9%		100			

**2.14.2: Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2015**

The total outturns captured for the year 2015 was 264 out of which 51.5 per cent were female and 48.5 percent male as indicated in Table 64. The programme with the highest outturns was Manufacturing and Processing at 86.4 percent followed Personal Services at 8.7 percent and the lowest Computing at 4.9 percent.

Females had slightly higher outturns in Manufacturing and Processing at Artisan level and Personal Services at all levels, and males led in Computing and Manufacturing at Craft level while they did not have outturns at Personal Services in the year under review.

Artisan level had the highest number of outturns at 66.7 per cent followed by Craft level with 21.9 percent whereas Certificate and Diploma levels had the lowest outturns at 5 and 2.8 percent respectively.

**Table 64:** Distribution of Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2015

Programme	Level										Grand Total	%
	Diploma		Certificate		Artisan		Craft		Sub-Total			
	M	F	M	F	M	F	M	F	M	F		
Computing	0	0	7	6	0	0	0	0	7	6	13	4.9
Manufacturing and Processing	3	8	0	0	73	91	45	8	121	107	228	86.4
Personal Services	0	6	0	0	0	12	0	5	0	23	23	8.7
Total	3	14	7	6	73	103	45	13	128	136	264	100
	1.1	5.3	2.7	2.3	27.7	39	17	4.9	48.5	51.5	100	
Percentage	2.8%		5%		66.7%		21.9%		100			

### 2.14.3: Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2016

The total outturns captured for the year 2016 was 637 out of which 60.4 per cent were male and 39.6 percent female as presented in Table 65. Education programme had the highest outturns at 41.8 percent followed by Manufacturing and Processing with 29.6 percent and Computing at 12.2 percent while Personal Services had the lowest outturns at 5.8 percent. The level with the highest outturns was Artisan followed by Certificate and Craft. Diploma level had the lowest outturns.

**Table 65:** Distribution of Outturns by Programme, Level and Sex in Vocational Rehabilitation Centres, 2016

Programmes	Level										Grand Total	%
	Diploma		Certificate		Artisan		Craft		Sub Total			
	M	F	M	F	M	F	M	F	M	F		
Computing	0	0	52	35	0	0	0	0	52	35	87	12.2
Manufacturing and Processing	5	9	0	0	68	87	30	12	103	108	211	29.59
Education	5	9	18	16	102	106	30	12	155	143	298	41.8
Personal Services	0	13	0	0	2	20	0	6	2	39	41	5.75
Total	10	31	70	51	172	213	60	30	312	325	637	100
	<b>1.6</b>	<b>4.9</b>	<b>10.9</b>	<b>8</b>	<b>27</b>	<b>33.4</b>	<b>9.4</b>	<b>4.7</b>	<b>60.4</b>	<b>39.6</b>	<b>100</b>	
<b>Percentage</b>	<b>6.5%</b>		<b>18.9%</b>		<b>60.4%</b>		<b>14.1%</b>				<b>100</b>	

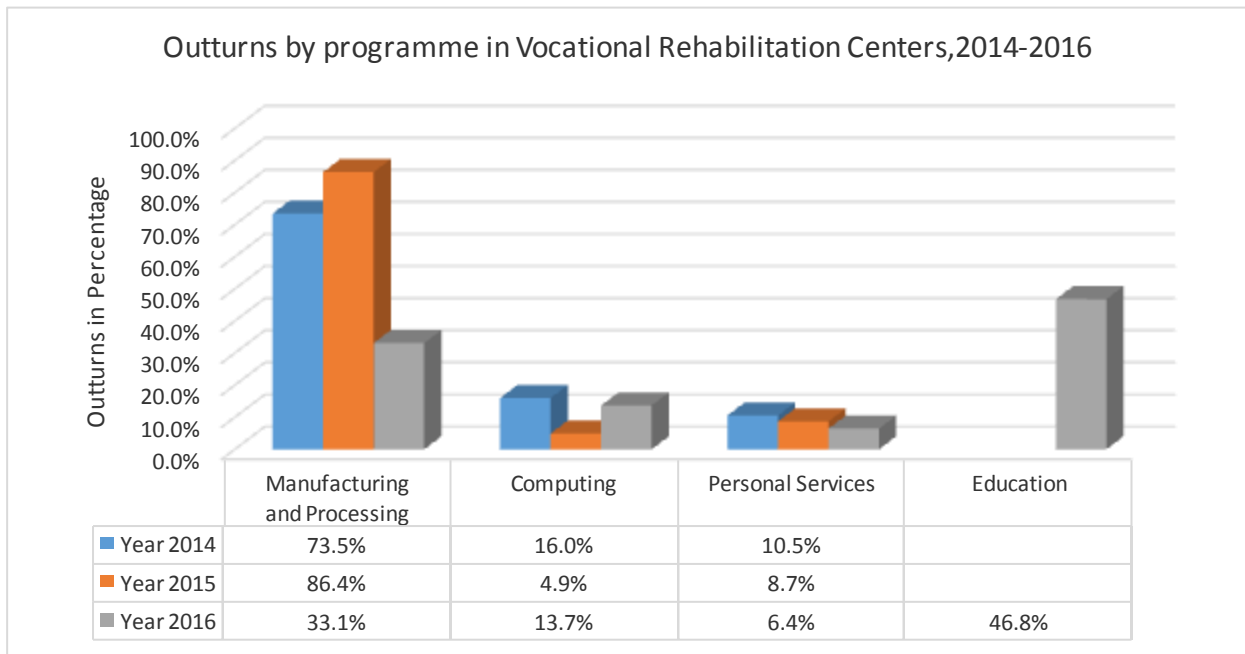
### 2.14.4: Trend Analysis on Outturns in Vocational Rehabilitation Centres, 2014 - 2016

This section presents trend analysis of outturns by programme, sex and skill level, for Vocational Rehabilitation Centres in the years 2014 to 2016. A total of 4 programmes were captured under this category of institutions. The following skill levels were recorded: Diploma, Certificate, Artisan and Craft.

#### 2.14.4.1: Programmes with Highest Outturns

There were only three programmes recorded under this category of institutions except for 2016 where a fourth programme was recorded. The three regular programmes were: Manufacturing & Processing, Computing and Personal Services. The additional programme in 2016 was Education. Calculation of programme(s) with lowest outturns was deemed unnecessary given the narrow scope.

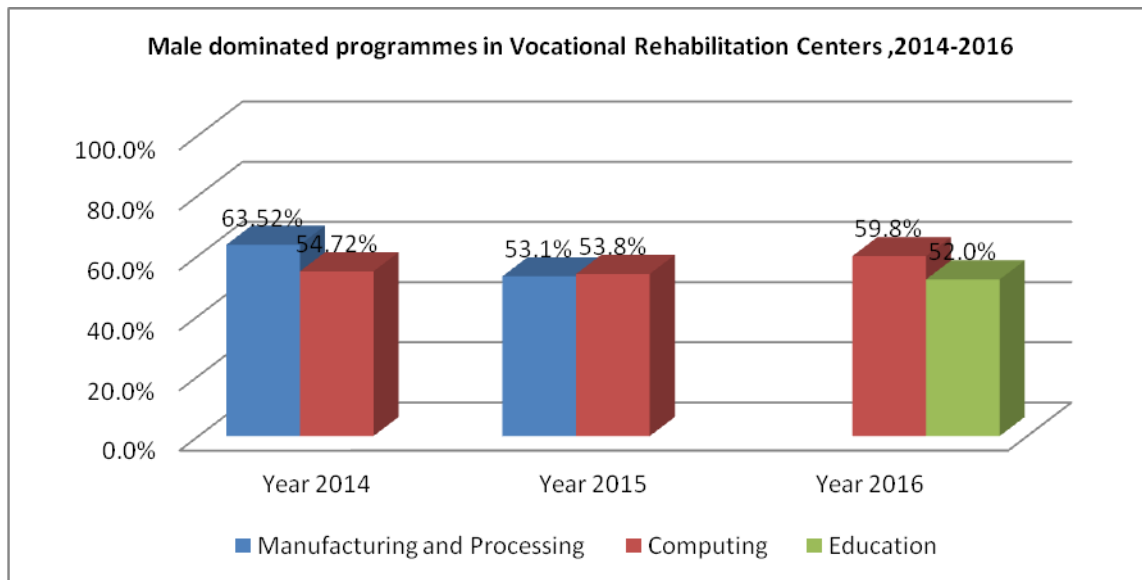
Figure 69 presents outturns by programme. It is observed that Manufacturing & Processing accounted for 73.5 percent and 86.4 percent in 2014 and 2015 respectively while it accounted for 33.1 percent in 2016. Education accounted for 46.8 percent in 2016.



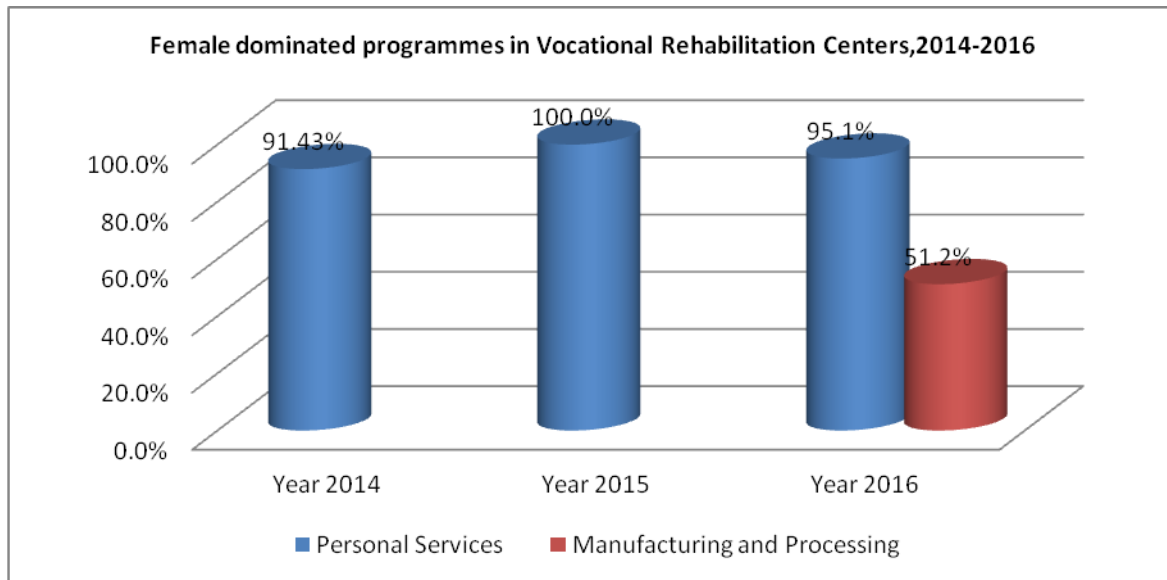
**Figure 69:** Outturns by Programme in Vocational Rehabilitation Centres, 2014-2016

#### 2.14.4.2: Distribution of Outturns by Programme and Sex

From Figures 70 and 71, it can be observed that outturns for both males and females were very dynamic, with the composition of the top programmes for males for one year being inconsistent with other years. Computing was the only programme that featured consistently for the three years. The best outturn rate for males was registered in Manufacturing & Processing followed by Computing then Education. For female graduates, Personal Services programme was highest in each of the three years. Manufacturing and Processing featured in the third year.



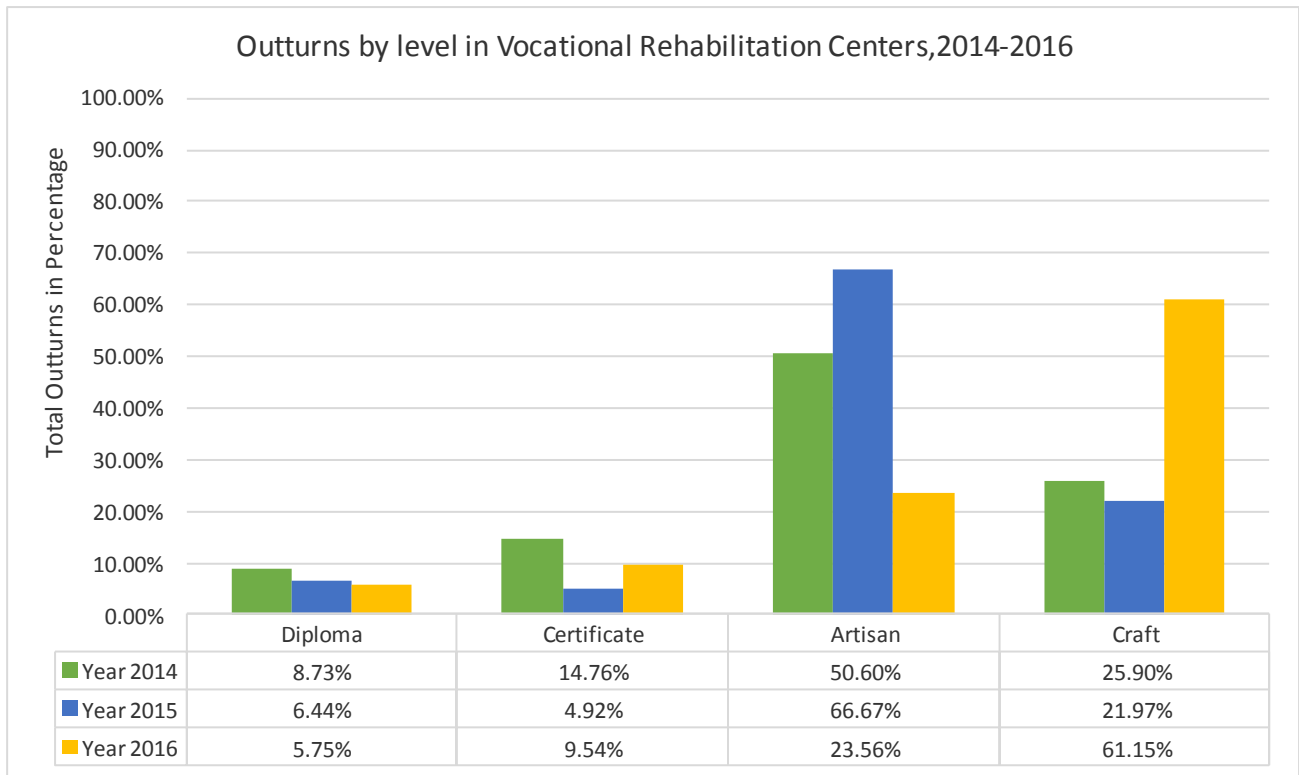
**Figure 70:** Male dominated programmes in Vocational Rehabilitation Centres, 2014-2016



**Figure 71:** Female dominated Outturns by programme in Vocational Rehabilitation Centres

#### 2.14.4.3: Overall Change in Outturns per Skill Level

The total outturns decreased by 20.5 percent from 2014 to 2015 but increased significantly from 2015 to 2016. Figure 72 indicates that majority of outturns were at Artisan level in year 2014 and 2015 accounting for 50.6 and 66.67 percent respectively, while in 2016 Craft level had majority of outturns at 61.2 percent. Diploma and certificate level recorded the lowest outturns accounting for less than 15 percent each in each of the three years.

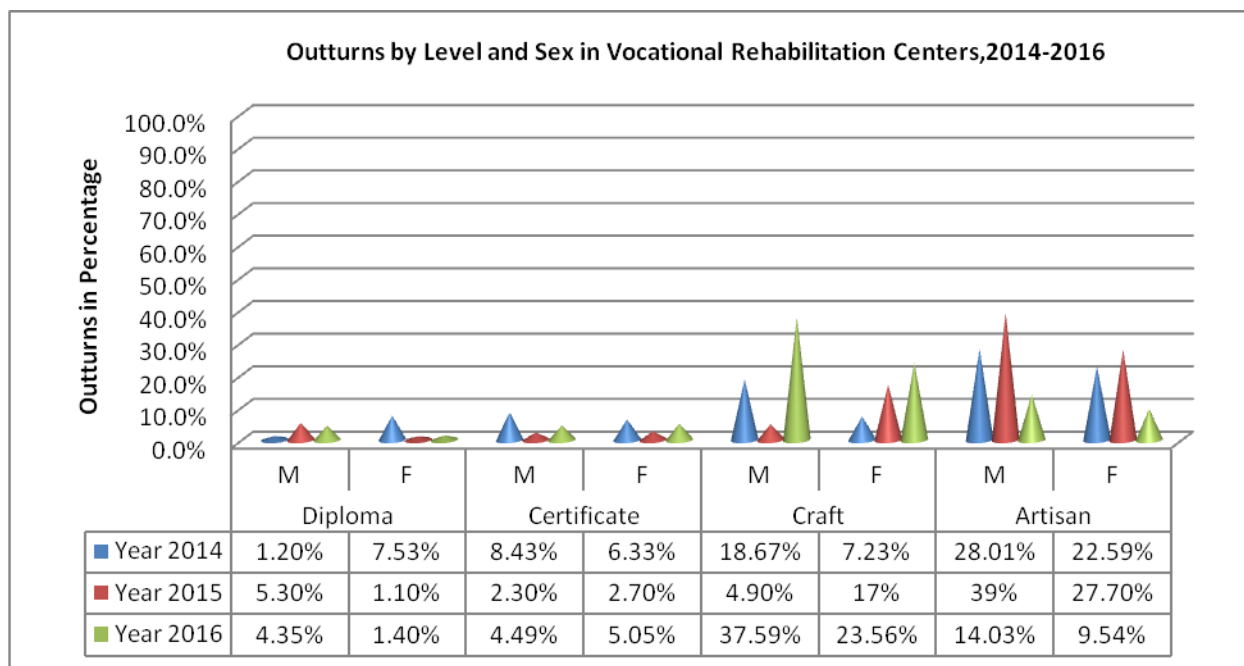


**Figure 72:** Outturns by level in Vocational Rehabilitation Centres, 2014-2016

#### 2.14.4.4: Distribution of Outturns by Skill Level and Sex

It was observed that Artisan and Craft levels had the highest share of outturns, almost equally. Outturns under Diploma and Certificate were below 10 percent as seen in Figure 73.





**Figure 73:** Outturns by level and sex in Vocational Rehabilitation Centres, 2014-2016

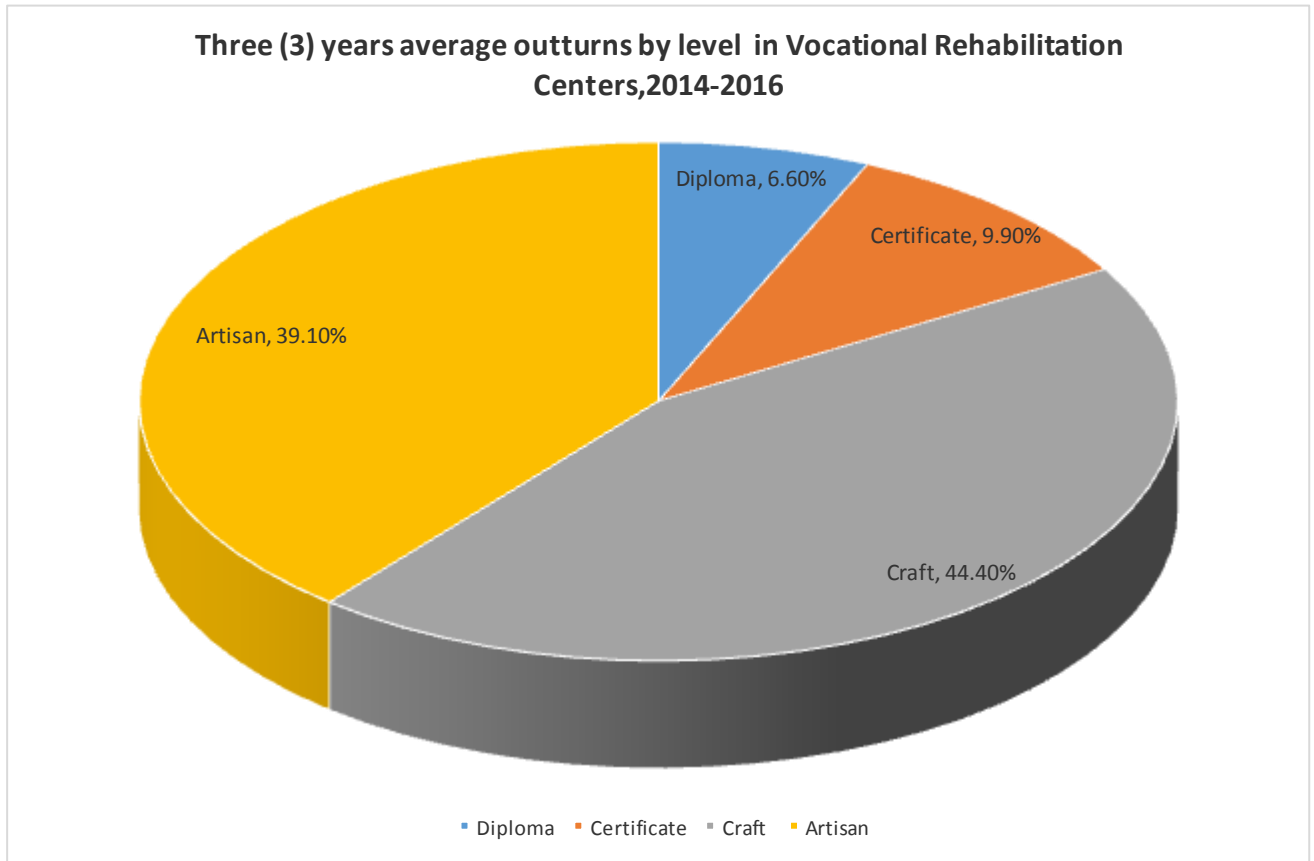
#### 2.14.4.5: Summary of Outturns by Year, Skill Level and Sex

From Table 66 a steady increase in outturns between the years was observed. The highest outturns during this period were in Craft Level with 44.4 percent followed by Artisan with 39.1 percent, Certificate with 9.9 percent and Diploma with 6.6 percent. It is further observed that, female outturns surpassed males at Diploma level in year 2014, Certificate in 2015 and 2016 and Craft in 2015. Male outturns surpassed females at Diploma for two years, 2015 and 2016, Certificate in 2014 and craft in 2014 and 2016.

**Table 66:** Summary of Outturns by Year, Level and Sex in Vocational Rehabilitation Centres, 2014-2016

Year	Level										Total
	Diploma		Certificate		Artisan		Craft		Sub Total		
	M	F	M	F	M	F	M	F	M	F	
2014	25	4	21	28	75	93	24	62	145	187	332
Percent	7.53	1.2	6.33	8.43	22.59	28.01	7.23	18.67	43.7	56.3	100
2015	3	14	7	6	73	103	45	13	128	136	264
Percent	1.1	5.3	2.7	2.3	27.7	39	17	4.9	48.5	51.5	100
2016	10	31	36	32	68	100	168	268	282	431	713
Percent	1.4	4.35	5.05	4.49	9.54	14.03	23.56	37.59	39.55	60.45	100
<b>Total</b>	<b>38</b>	<b>49</b>	<b>64</b>	<b>66</b>	<b>216</b>	<b>296</b>	<b>237</b>	<b>343</b>	<b>555</b>	<b>754</b>	<b>1309</b>
<b>Percent</b>	<b>2.9</b>	<b>3.7</b>	<b>4.9</b>	<b>5</b>	<b>16.5</b>	<b>22.6</b>	<b>18.2</b>	<b>26.2</b>	<b>42.4</b>	<b>57.6</b>	<b>100</b>

Figure 74 presents average outturns in the three years under review.



**Figure 74:** Three (3) years Average Outturns by Level in Vocational Rehabilitation Centres, 2014-2016

## 2.15. COMMERCIAL COLLEGES

### 2.15.1: Outturns by Programme, Level and Sex in Commercial Colleges, 2014

During the year under review, the total outturns captured were 76,807 out of which 52.7 per cent were female while males accounted for 47.3 per cent as presented in Table 67. Programmes with the highest outturns were Business and Administration at 35.6 per cent followed by Computing at 22.4 per cent, Personal Services at 15.7 per cent and Social Services at 5.6 per cent. The rest of the programmes had less than 5 per cent.

Diploma level had the highest number of outturns at 50.4 per cent, followed by Certificate at 45.6 per cent. Diploma had 1.6 per cent while Masters, Bachelors and Higher Diploma levels had the lowest at less than 1 per cent.

**Table 67:** Distribution of Outturns by Programme, Level and Sex in Commercial Colleges, 2014

Programmes	Masters		Bachelo rs		Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficienc y		Sub-Total		Grand Total	%
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	0	0	0	0	77	54	43	48	0	0	12	6	0	0	132	108	240	0.3
Architecture and Building	0	0	0	0	0	0	7	3	13	0	0	0	0	0	0	0	20	3	23	0.0
Arts	0	0	0	0	0	0	44	103	152	185	16	12	0	3	0	0	212	303	515	0.7
Business and Administration	2	1	24	27	156	167	6757	6911	5846	6757	0	2	16	188	322	175	13123	14228	27351	35.6
Computing	0	0	0	0	0	0	1867	1886	6229	6915	25	30	23	9	85	112	8229	8952	17181	22.4
Education	0	0	0	0	0	0	299	638	295	413	0	0	0	0	1	2	595	1053	1648	2.1
Engineering and Engineering Trades	0	0	0	0	0	0	1091	388	146	67	468	105	114	47	0	0	1819	607	2426	3.2
Generic Programmes and Qualifications	0	0	0	0	0	0	0	0	240	82	0	0	0	0	0	0	240	82	322	0.4
Health	0	0	0	0	0	0	691	962	118	218	0	0	0	0	0	0	809	1180	1989	2.6
Humanities	0	0	27	12	0	0	802	642	521	728	0	0	5	13	2	5	1357	1400	2757	3.6
Journalism and Information	0	0	0	0	0	0	1072	817	265	248	0	0	1	22	0	0	1338	1087	2425	3.2
Law	0	0	0	0	0	0	3	5	3	5	0	0	0	0	21	17	27	27	54	0.1

Life Sciences	0	0	0	0	0	0	43	27	16	17	0	0	0	0	0	0	59	44	103	0.1
Manufacturing and Processing	0	0	0	0	0	0	81	190	145	592	11	42	0	33	0	17	237	874	1111	1.4
Personal Development	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	6	0	7	7	0.0
Personal Services	0	0	0	0	3	4	4310	4998	584	1589	70	413	7	86	0	0	4974	7090	12064	15.7
Physical Sciences	0	0	0	0	0	0	10	15	19	17	0	0	0	0	0	0	29	32	61	0.1
Security Services	0	0	0	0	0	0	84	57	130	92	0	0	0	0	0	0	214	149	363	0.5
Social and Behavioural Sciences	0	0	0	0	0	0	11	7	31	33	0	0	0	0	0	0	81	51	132	0.2
Social Services	0	0	0	0	0	0	1308	1776	529	673	0	0	0	0	0	0	1837	2449	4286	5.6
Transport Services	0	0	0	0	15	5	406	273	592	447	0	0	0	0	0	0	1013	725	1738	2.3
Veterinary Services	0	0	0	0	0	0	0	0	6	5	0	0	0	0	0	0	6	5	11	0.0
<b>Total</b>	<b>2</b>	<b>1</b>	<b>51</b>	<b>39</b>	<b>174</b>	<b>176</b>	<b>1896</b>	<b>1975</b>	<b>1592</b>	<b>1913</b>	<b>590</b>	<b>604</b>	<b>178</b>	<b>407</b>	<b>470</b>	<b>345</b>	<b>3635</b>	<b>4045</b>	<b>7680</b>	<b>100</b>
<b>Percentage</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>24.7</b>	<b>25.7</b>	<b>20.7</b>	<b>24.9</b>	<b>0.8</b>	<b>0.8</b>	<b>0.2</b>	<b>0.5</b>	<b>0.6</b>	<b>0.4</b>	<b>47.3</b>	<b>52.7</b>	<b>100.0</b>	
<b>Total percentage</b>	<b>0</b>		<b>0.2</b>		<b>0.4</b>		<b>50.4</b>			<b>45.6</b>			<b>1.6</b>		<b>0.7</b>		<b>1</b>		<b>100</b>	

### **2.15.2: Outturns by Programme, Level and Sex in Commercial Colleges, 2015**

Table 68 presents the distribution of outturns from Commercial Colleges in 2015. Total outturns captured were 75,190 out of which 55.1 per cent were female while male accounted for 44.9 percent. It can be observed that programmes that had the highest number of outturns were Business and Administration at 38.1 percent followed by Computing at 23.5 per cent, Personal Services at 11 percent and Social Services at 5.8 percent. The rest had less than 5 percent.

Certificate level had the highest outturns at 54.3 per cent, followed by Diploma at 40.3 percent while Bachelor's, Master's and Higher Diploma level had the lowest outturns at less than 1 percent. Females had the highest outturns at all levels except at Bachelor's where males led.

**Table 68: Distribution of Outturns by Programme, Level and Sex in Commercial Colleges, 2015**

Programmes	Masters		Bachelors		Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency		Sub-Total		Grand Total	%
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	0	0	0	0	82	56	76	71	7	4	10	4	0	0	175	135	310	0.4
Architecture and Building	0	0	0	0	0	0	76	10	12	1	0	0	0	0	0	0	88	11	99	0.1
Arts	0	0	0	0	0	0	41	104	189	219	19	26	6	4	0	0	255	353	608	0.8
Business and Administration	3	1	36	28	152	211	6035	6739	6676	7774	9	0	27	270	314	350	13252	15373	28625	38.1
Computing	0	0	0	0	0	0	1083	804	7177	8292	35	25	26	16	76	106	8397	9243	17640	23.5
Education	0	0	1	15	0	0	303	586	391	660	0	0	0	0	2	22	697	1283	1980	2.6
Engineering and Engineering Trades	0	0	0	0	11	0	817	181	181	66	653	177	108	80	0	0	1770	504	2274	3.0
Generic Programmes and Qualifications	0	0	0	0	0	0			230	111	0	0	0	0	0	0	230	111	341	0.5
Health	0	0	0	0	0	0	628	835	99	214	0	0	0	0	0	0	727	1049	1776	2.4
Humanities	0	0	82	29	0	0	768	784	789	1055	0	0	0	8	3	2	1642	1878	3520	4.7
Journalism and Information	0	0	0	0	0	0	660	630	288	335	0	0	2	15	0	0	950	980	1930	2.6
Law	0	0	0	0	0	0	0	0	9	10	0	0	0	0	35	42	44	52	96	0.1

Life Sciences	0	0	0	0	0	0	29	37	9	7	0	0	0	0	0	0	38	44	82	0.1
Manufacturing and Processing	0	0	0	0	0	0	67	179	197	693	10	69	3	43	4	34	281	1018	1299	1.7
Personal Development	0	0	0	0	0	0	0	0	0	5	0	0	0	0	4	2	4	7	11	0.0
Personal Services	0	0	0	0	8	9	1577	3090	650	2162	118	620	1	40	0	0	2354	5921	8275	11.0
Physical Sciences	0	0	0	0	0	0	20	20	17	10	0	0	0	0	0	0	37	30	67	0.1
Security Services	0	0	0	0	0	0	75	41	149	93	0	0	0	0	0	0	224	134	358	0.5
Social and Behavioural Sciences	0	0	0	0	0	0	23	34	28	44	0	0	0	0	22	26	73	104	177	0.2
Social Services	0	0	1	1	0	0	1297	1848	478	772	0	0	0	0	0	0	1776	2621	4397	5.8
Transport Services	0	0			11	4	408	306	292	277	0	0	0	0	0	0	711	587	1298	1.7
Veterinary Services	0	0	0	0	0	0	1	1	15	10	0	0	0	0	0	0	16	11	27	0.0
<b>Total</b>	<b>3</b>	<b>1</b>	<b>120</b>	<b>73</b>	<b>182</b>	<b>224</b>	<b>13990</b>	<b>16285</b>	<b>17952</b>	<b>22881</b>	<b>851</b>	<b>921</b>	<b>183</b>	<b>480</b>	<b>460</b>	<b>584</b>	<b>33741</b>	<b>41449</b>	<b>75190</b>	<b>100</b>
<b>%</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>0.3</b>	<b>18.6</b>	<b>21.7</b>	<b>23.9</b>	<b>30.4</b>	<b>1.1</b>	<b>1.2</b>	<b>0.2</b>	<b>0.6</b>	<b>0.6</b>	<b>0.8</b>	<b>44.9</b>	<b>55.1</b>	<b>100.0</b>	
<b>Total %</b>	<b>0</b>	<b>0</b>	<b>0.3</b>	<b>0.1</b>	<b>0.5</b>	<b>0.3</b>	<b>40.3</b>	<b>21.7</b>	<b>54.3</b>	<b>30.4</b>	<b>2.3</b>	<b>1.2</b>	<b>0.8</b>	<b>0.6</b>	<b>0.6</b>	<b>1.4</b>	<b>100</b>	<b>55.1</b>	<b>100.0</b>	



### **2.15.3: Outturns by Programme, Level and Sex in Commercial Colleges, 2016**

Table 69 shows the distribution of outturns captured by programmes, level and sex from Commercial Colleges in 2016. During the period under review the total outturns captured were 70,184 out of which 54.9 per cent were female and 45.1 percent male. Programmes that had the highest outturns were Business and Administration at 39 percent followed by Computing at 25.8 percent, Personal Services at 9.9 percent and Humanities 5.4 percent. The rest of the programmes had less than 5 percent.

Certificate level had the highest outturns at 58.8 per cent followed by Diploma at 35.1 percent while Master's, Higher Diploma and Bachelor's levels had the lowest at less than 1 percent each. Females had the highest outturns at all levels except at Bachelor's and Diploma where males led. At Master's and Higher Diploma levels both sexes had less than 1 percent.

**Table 69: Distribution of Outturns by Programme, Level and Sex Outturns in Commercial Colleges, 2016**

Programmes	Masters		Bachelors		Higher Diploma		Diploma		Certificate		Artisan		Craft		Proficiency		Total		Grand Total	%
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Agriculture, Forestry and Fishery	0	0	0	0	0	0	133	74	81	51	0	0	0	0	0	0	214	125	339	0.5
Architecture and Building	0	0	0	0	0	0	149	43	10	1	5	0	4	2	0	0	168	46	214	0.3
Arts	0	0	0	0	0	0	58	105	187	230	25	60	1	3	0	0	271	398	669	1.0
Business and Administration	2	1	77	74	148	151	5480	6291	6424	7739	3	6	40	238	304	370	12478	14870	27348	39.0
Computing	0	0	0	0	0	0	1133	860	7411	8440	0	0	21	11	119	104	8684	9415	18099	25.8
Education	0	0	2	7	0	0	273	496	455	820	0	0	0	0	2	16	732	1339	2071	3.0
Engineering and Engineering Trades	0	0	0	0	41	11	711	171	162	75	446	120	251	111	13	2	1624	490	2114	3.0
Generic Programmes and Qualifications	0	0	0	0	0	0	0	0	493	87	0	0	0	0	0	0	493	87	580	0.8
Health	0	0	0	0	0	0	261	280	69	147	0	0	0	0	0	0	330	427	757	1.1
Humanities	0	0	34	20	0	1	847	815	916	1165	8	9	2	7	1	0	1808	2017	3825	5.4
Journalism and Information	0	0	0	0	0	0	429	468	360	329	2	6	9	29	0	0	800	832	1632	2.3
Law	0	0	0	0	0	0	0	0	2	3	0	0	0	0	35	42	37	45	82	0.1

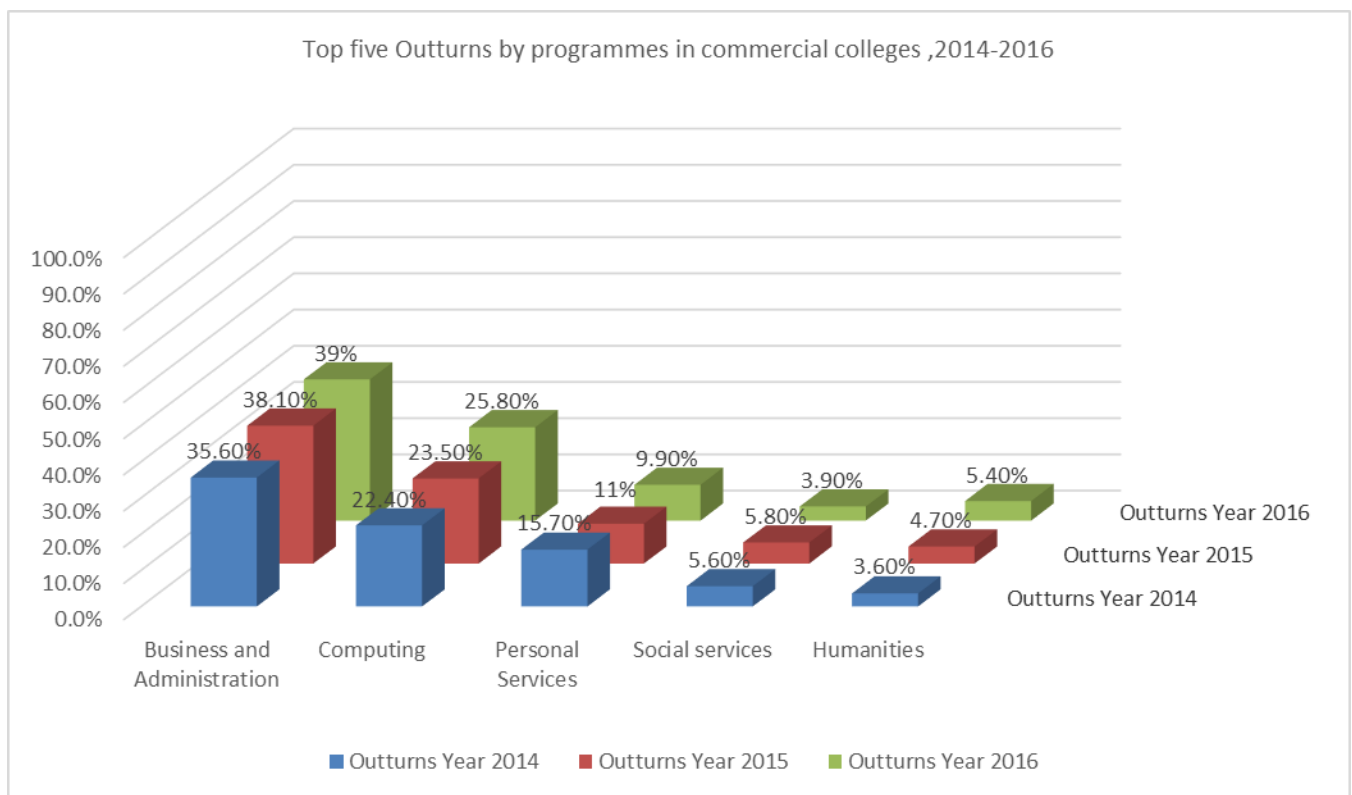
Life Sciences	0	0	0	0	0	0	37	35	3	5	0	0	0	0	0	0	40	40	80	0.1
Manufacturing and Processing	0	0	0	0	0	0	122	277	203	581	22	70	9	46	3	30	359	1004	1363	1.9
Personal Services	0	0	0	0	0	0	892	2182	732	2199	144	674	8	91	0	0	1776	5146	6922	9.9
Physical Sciences	0	0	0	0	0	0	10	7	22	22	0	0	0	0	0	0	32	29	61	0.1
Security Services	0	0	0	0	8	1	129	48	191	117	0	0	0	0	0	0	328	166	494	0.7
Social and Behavioral Sciences	0	0	0	0	0	0	13	19	25	37	0	0	0	0	43	36	81	92	173	0.2
Social Services	0	0	0	0	3	10	580	863	490	773	0	0	0	0	2	1	1075	1647	2722	3.9
Transport Services	0	0	0	0	7	3	203	193	117	70	0	0	0	0	0	0	327	266	593	0.8
Veterinary Services	0	0	0	0	0	0	6	2	20	16	0	0	0	0	0	0	26	18	44	0.1
<b>Total</b>	<b>2</b>	<b>1</b>	<b>113</b>	<b>101</b>	<b>207</b>	<b>177</b>	<b>1146</b>	<b>1322</b>	<b>1837</b>	<b>2290</b>	<b>655</b>	<b>945</b>	<b>345</b>	<b>538</b>	<b>522</b>	<b>601</b>	<b>3168</b>	<b>3849</b>	<b>7018</b>	<b>100</b>
<b>Percentage</b>	<b>0.</b>	<b>0.</b>	<b>0.2</b>	<b>0.1</b>	<b>0.3</b>	<b>0.3</b>	<b>16.3</b>	<b>18.8</b>	<b>26.2</b>	<b>32.6</b>	<b>0.9</b>	<b>1.3</b>	<b>0.5</b>	<b>0.8</b>	<b>0.7</b>	<b>0.9</b>	<b>45.1</b>	<b>54.9</b>	<b>100</b>	
<b>Total percentage</b>	<b>0</b>		<b>0.3</b>		<b>0.6</b>		<b>35.1</b>		<b>58.8</b>		<b>2.2</b>		<b>1.3</b>		<b>1.6</b>		<b>100</b>			

#### 2.15.4: Trend Analysis on Outturns in Commercial Colleges, 2014- 2016

This section presents trend analysis of outturns by programme, sex and skill level for Commercial Colleges in the years 2014 to 2016. A total of 22 programmes were captured under this category of institutions. The following skill levels were recorded: Masters, Bachelors, Higher diploma, Diploma, Certificate, Artisan, Craft and Proficiency.

##### 2.15.4.1: Programmes with Highest Outturns

During the period under review a consistent pattern of three programmes taking the same positions in each of the years was observed. Figure 75 indicates that Business and Administration programme had the highest outturns in the three years accounting for 35.6 percent and 38.1 percent in 2014 and 2015 while in 2016 it accounted for 39 percent. Computing, Personal Services, Social Services and Humanities completed the top five list in that order. Business & Administration, Computing and Humanities showed an upward trend, while Personal Services showed a downward trend with Social Services increasing from 2014 to 2015 before decreasing in 2016.



**Figure 75:** Top five outturns by Programme in Commercial Colleges, 2014-2016

### 2.15.4.2: Programmes with Lowest Outturns

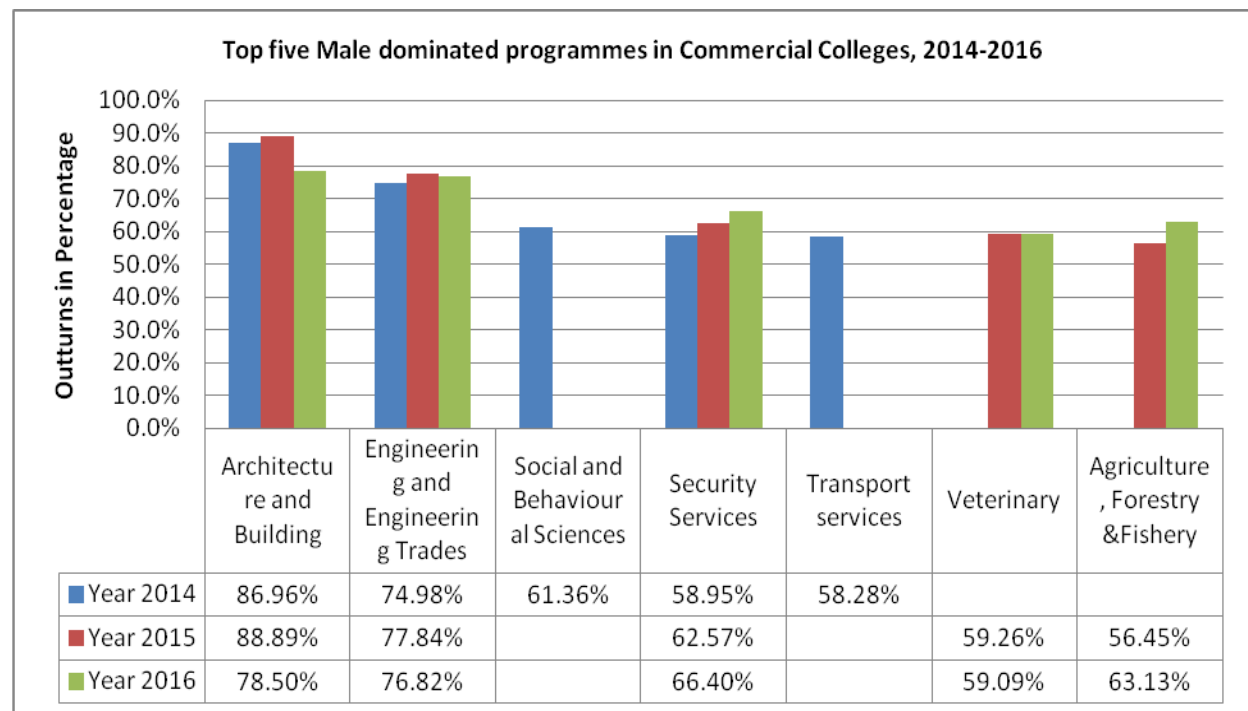
Table 70 indicates the programmes that had the lowest outturns in the period under review.

**Table 70:** Distribution of programmes with the lowest outturns, 2014 -2016 in Commercial Colleges

Programmes	2014	2015	2016
	Percentage	Percentage	Percentage
Personal Development	0.009	0.014	0
Veterinary	0.014	0.035	0.062
Architecture and Building	0.029	0	0
Physical Sciences	0	0.089	0.086
Life Sciences	0	0	0.11

### 2.15.4.3: Distribution of Outturns by Programme and Sex

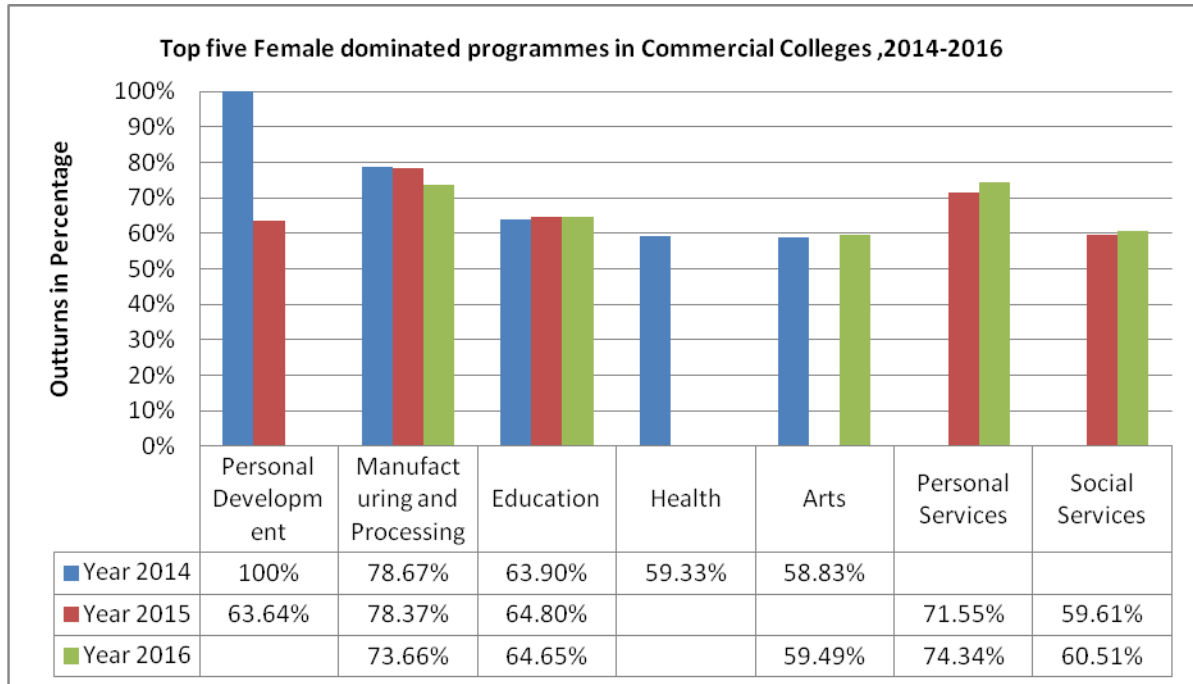
Figure 76 indicates that males dominated in Architecture and Building as well as Engineering & Engineering Trades programmes and Security Services for the three years running. Veterinary Services and Agriculture, Forestry and Fisheries featured twice while Transport and Social/Behavioural Sciences featured once.



**Figure 76:** Top five male dominated programmes in Commercial Colleges, 2014-2016

Figure 77 shows that female outturns in the top three programmes were very dynamic, alternating amongst six programmes. Females had the highest outturns in Personal Development at 100

percent in 2014, while Manufacturing & Processing recorded over 75 percent and Education about 64 percent for the period under review. Personal Services and Social Services featured twice.

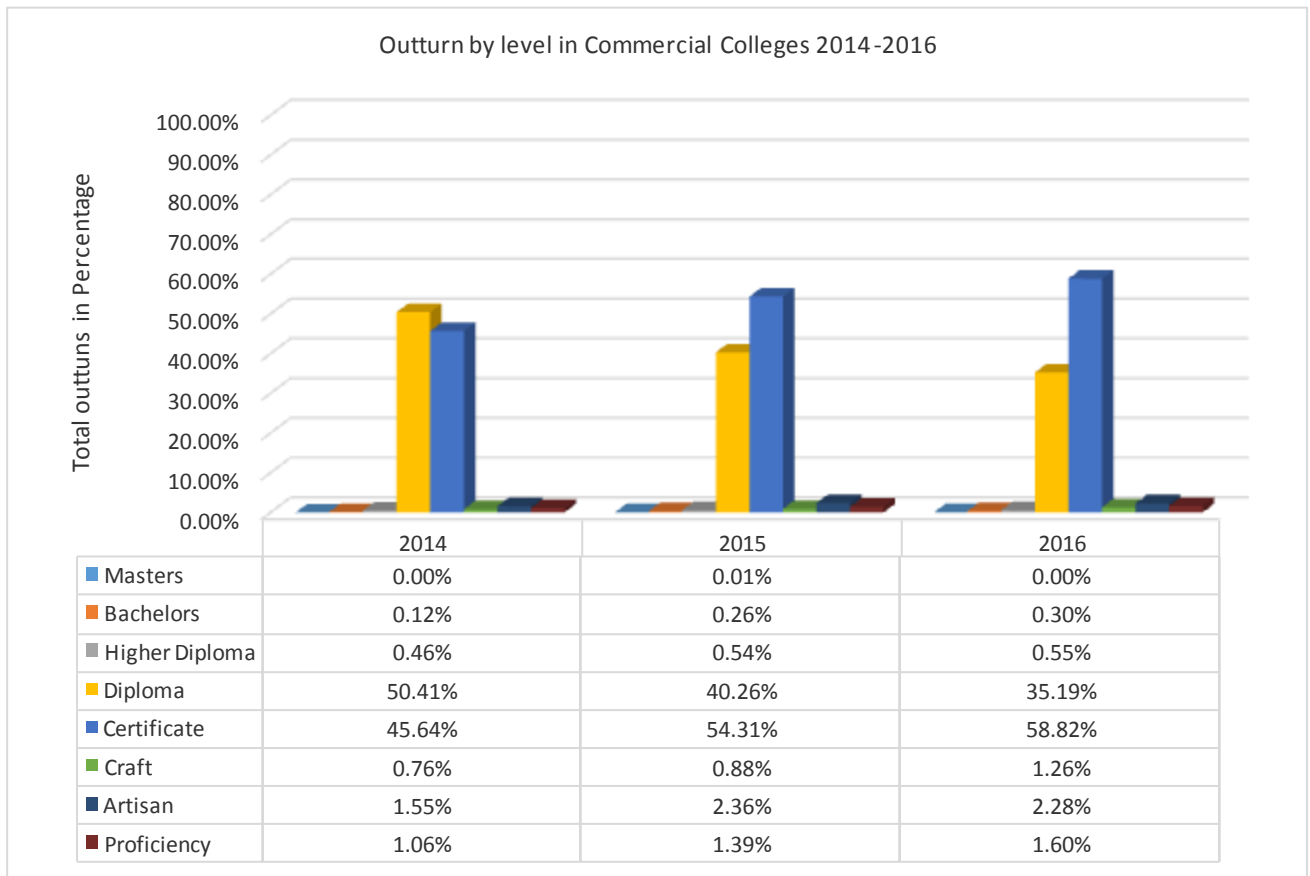


**Figure 77:** Top five Female dominated Programmes in Commercial Colleges, 2014-2016

#### 2.15.4.4: Overall change in Outturns per Skill Level

The following skill levels were recorded under Commercial Colleges: Masters, Bachelor’s, Higher Diploma, Diploma, Certificate, Artisan, Craft and Proficiency. A total of about 22 programmes were captured under these levels.

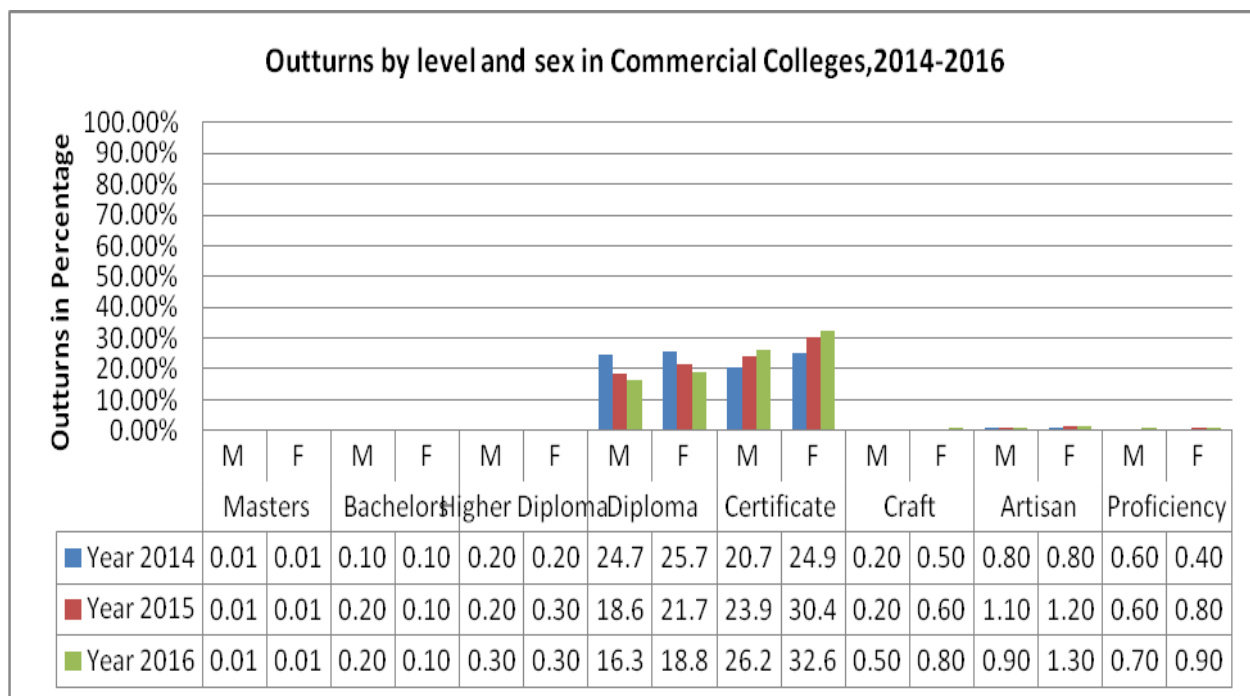
During the period under review, Certificate level recorded a steady increase in outturns from 45.6 percent, 54.3 percent and 58.8 percent respectively. On the other hand, there was a marked decline for Diploma from 50.4 percent to 40.3 percent and 35.2 percent over the period as indicated in Figure 78.



**Figure 78:** Outturns by level in Commercial Colleges, 2014-2016

#### 2.15.4.5: Distribution of Outturns by Skill Level and Sex

Figure 79 indicates that only Diploma and Certificate levels had significant outturns for both males and females. Outturns for other levels were negligible. In most of the levels, female outturns were either higher or at par with males. Overall, female outturns surpassed those of males in Commercial Colleges.



**Figure 79:** Outturns by level and sex in Commercial Colleges, 2014-2016

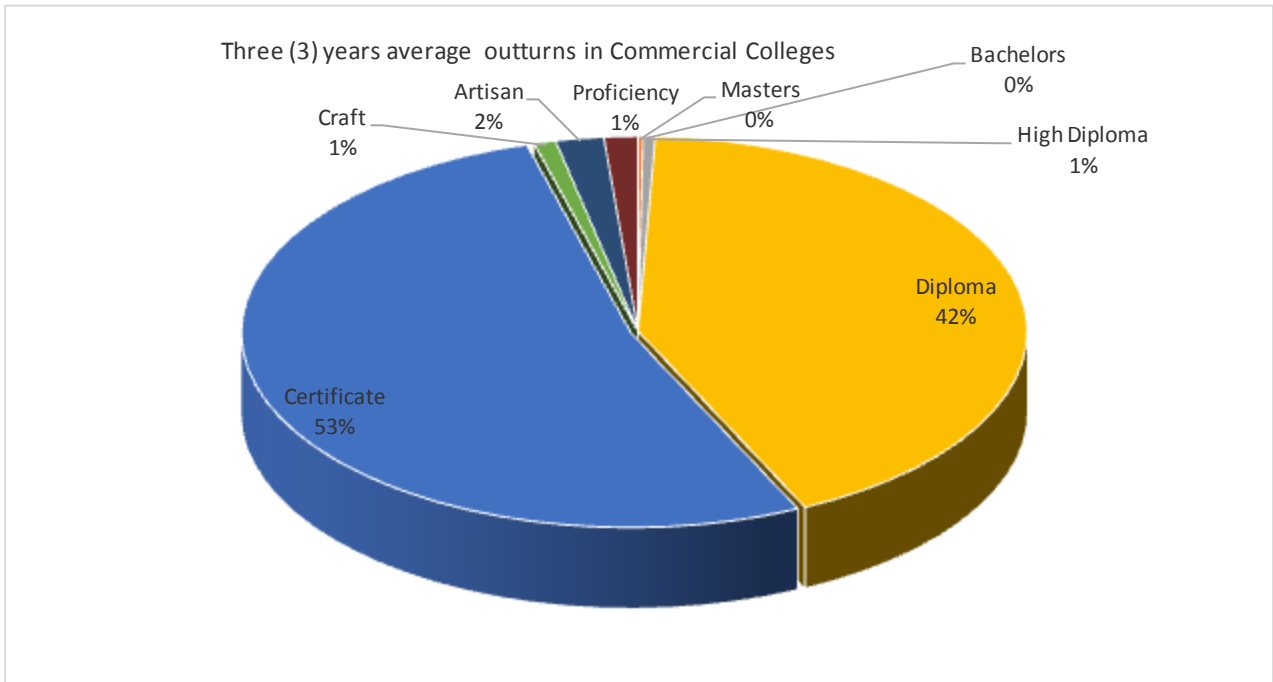
#### 2.15.4.6: Summary of Outturns by Year, Skill Level and Sex

Table 71 indicates a decreasing trend in outturns in the three-year period. The highest outturns during this period were in Certificate level with 52.7 percent followed by Diploma with 42.2. Artisan had 2.0 percent and Proficiency with 1.4 while the rest had less than 1 percent.

Male outturns surpassed females slightly at Master’s and Bachelor’s levels while the trend changed in favour of females at Diploma, Certificate, Craft and Artisan levels. At higher Diploma, males and females were at par in year 2014 and 2016 while female outturns surpassed those of males in 2015. At Proficiency level, female outturns surpassed males in year 2015 and 2016 while males had higher numbers in 2014.

Figure 80 presents average outturns for the three years under review. Certificate level accounted for 53 percent and Diploma 42 percent. All the other levels of awards combined accounted for only 5 percent.





**Figure 80:** Three (3) years Average outturns in Commercial Colleges, 2014-2016

**Table 71: Summary of Outturns by Level and Sex in Commercial Colleges, 2014- 2016**

Year	Masters		Bachelors		Higher Diploma		Diploma		Certificate		Craft		Artisan		Proficiency		Sub-Total		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
2014	2	1	51	39	174	176	18963	19752	15923	19132	178	407	590	604	470	345	36351	40456	76807
%	0	0	0.1	0.1	0.2	0.2	24.7	25.7	20.7	24.9	0.2	0.5	0.8	0.8	0.6	0.4	47.3	52.7	100
2015	3	1	120	73	182	224	13990	16285	17952	22881	183	480	851	921	460	584	33741	41449	75190
%	0	0	0.2	0.1	0.2	0.3	18.6	21.7	23.9	30.4	0.2	0.6	1.1	1.2	0.6	0.8	44.9	55.1	100
2016	2	1	113	101	207	177	11466	13229	18375	22907	345	538	655	945	522	601	31685	38499	70184
%	0	0	0.2	0.1	0.3	0.3	16.3	18.8	26.2	32.6	0.5	0.8	0.9	1.3	0.7	0.9	45.1	54.9	100
<b>Total</b>	<b>7</b>	<b>3</b>	<b>284</b>	<b>213</b>	<b>563</b>	<b>577</b>	<b>44419</b>	<b>49266</b>	<b>52250</b>	<b>64920</b>	<b>706</b>	<b>1425</b>	<b>2096</b>	<b>2470</b>	<b>1452</b>	<b>1530</b>	<b>101777</b>	<b>120404</b>	<b>222181</b>
%	0.003	0.001	0.1	0.1	0.253	0.259	20	22.2	23.5	29.2	0.3	0.6	0.9	1.1	0.7	0.7	45.8	54.2	100
	0.004		0.2		0.5		42.2		52.7		0.9		2.0		1.4		100		

## CHAPTER THREE: SUMMARY OF FINDINGS

### Introduction

This chapter presents the main findings of the survey. The findings have been aligned to each of the 14 categories of training institutions. There is also a General Observations section presenting cross-cutting issues and observations.

### Universities

- i. During the three years under review the programmes that had the highest outturns in the Universities (starting with the highest) were: Business and Administration, Education, Health, Computing and Humanities. The programmes with the lowest outturns were in Manufacturing and Processing, Veterinary and Transport Services.
- ii. Males had higher outturns in Architecture and Building, Engineering and Engineering Trades; Veterinary Services, Transport and Computing in that order and the lowest were in Personal Services, Social Services, and Manufacturing and Processing.
- iii. Females had higher outturns in Manufacturing & Processing, Personal Services, Journalism, Humanities and Social Services, and Law; while lowest were in Architecture and Building.
- iv. Bachelor's level had the highest outturns in the Universities at 66.4 percent, followed by Diploma at 18.3 percent, Masters at 9.2 percent, Certificate at 4.8 percent, PHD at 0.7 percent and Higher Diploma 0.2 percent. Diploma level therefore had significant outturns in the Universities.
- v. Males had higher outturns in PHD, Master's, Bachelor's, PGD, Higher Diploma and Diploma except at the Certificate level.
- vi. In terms of total outturns captured, the two genders were almost at par.

### National Polytechnics

- i. The programmes that had the highest outturns were Business and Administration, Engineering and Engineering Trades, Architecture & Building, Social Services and Computing. The lowest were Humanities, Physical Sciences and Transport Services.
- ii. Males had higher outturns in Architecture and Building, Engineering & Engineering Trades, Agriculture, Forestry & Fishery and Computing. The lowest were Personal

Services, Manufacturing and Processing, Humanities, Transport, Physical Sciences and Journalism & Information.

- iii. Females had higher outturns in Manufacturing and Processing, Personal Services, and Social Services, while the lowest was Engineering and Engineering Trades.
- iv. Diploma level had the highest outturns at 66.3 percent, followed by Certificate at 27.1 percent, Artisan at 4.9 percent, Craft at 3.5 percent and Higher Diploma at 1.0 percent.
- v. Males outturns outnumbered female in Diploma, Certificate and Artisan levels, while at Craft level they were at par.

### **Institutes of Technology**

- i. The majority of outturns were in Engineering & Engineering Trades and Business Administration programmes.
- ii. Male outturns were higher with a ratio of 2 to 1 in most of the cases for female outturns.
- iii. The highest outturns were at Diploma level, followed by Certificate and Higher Diploma. Outturns for Artisan level programmes were much lower.

### **Technical Training Institutes**

- i. Business and Administration programme and Engineering and Engineering Trades had the highest outturns, followed by Architecture & Building, Computing and Manufacturing & Processing.
- ii. Diploma had the highest outturns at 32.5 percent followed by Higher Diploma at 21.4 percent.
- iii. Male outturns were higher at 53.3 percent. They surpassed those of females for all levels except Higher Diploma and Artisan levels where they appeared to be at par.
- iv. Programmes with higher outturns for females were Humanities, Physical Sciences, Social Sciences, Manufacturing & Processing, and Personal Services in that order.
- v. Programmes with higher outturns for males were Engineering & Engineering Trades, Architecture & Building and Agriculture, Forestry & Fishery in that order.
- vi. There appears to have been a constant increase in outturns.

### **Teacher Training Colleges**

- i. The outturns remained constant during the period under review.
- ii. Education remained the core programme of TTCs.
- iii. Female outturns surpassed male ones in the three-year period.
- iv. Majority of outturns were at Certificate level. Diploma level outturns constituted about a third.

### **Medical Training Colleges**

- i. The core programme was Health.
- ii. The outturns remained relatively the same.
- iii. Most of the programmes offered were at Diploma level which registered the highest outturns during the period under review.
- iv. Female outturns outnumbered male ones moderately at Diploma and Certificate levels.

### **Kenya School of Government**

- i. Over 70 percent of the total outturns for all the three years were recorded in Business and Administration programme.
- ii. Certificate level programmes had the majority outturns.
- iii. In 2015, female outturns surpassed male ones in all the programmes except in Computing.
- iv. Outturns for both males and females were more or less at par for both Certificate and Proficiency levels.
- v. There were no outturns captured for Proficiency level in 2015 and 2016.

### **Training Institutions under Government Ministries and Agencies**

- i. Business and Administration programme had the highest outturns in the period under review for both males and females, followed by Engineering & Engineering Trades and Architecture & Building.
- ii. Diploma, Certificate and Proficiency level outturns were higher compared to Higher Diploma, Artisan and Craft.
- iii. Males had higher outturns in Personal Development, Engineering & Engineering Trades, Transport services and Architecture & Building in that order; while females had the higher

outturns in Manufacturing and Processing, Personal Services and Business and Administration.

- iv. Male outturns outnumbered female at all levels.

#### **Agriculture and related Institutions**

- i. Certificate levels had the highest outturns followed by Diploma.
- ii. Agriculture, Forestry & Fishery was the main programme. Veterinary Services programme appeared only in the 3<sup>rd</sup> year.
- iii. There was an increase in the outturns during the period under review.
- iv. Males had the higher outturns in Veterinary, Agriculture, Forestry and Fishery and Education, while females had higher outturns in Manufacturing and Processing.
- v. Male outturns were higher than female at Diploma and Certificate levels, while females had higher outturns in the Artisan level awards.

#### **National Youth Service Training Institutions**

- i. Craft level had the highest outturns except in the 3<sup>rd</sup> year when Diploma had more. Certificate level outturns were much lower.
- ii. Male outturns accounted for over 70 percent in Engineering and Engineering Trades programme during the period under review.
- iii. Male outturns were higher in Diploma and Craft levels while female outturns were higher at Certificate level.
- iv. Males outturns were higher in Engineering & Engineering Trades and Personal Services.
- v. Female outturns were more in Arts, Education and Computing.
- vi. Programmes with highest outturns were Personal Services, Engineering & Engineering Trades, Computing and Arts in that order.

#### **Technical Vocational Colleges**

- i. During the three years under review the programmes that had the highest outturns in Technical Vocational Colleges were Architecture & Building, Engineering and Engineering Trades, Personal Services, Computing and Manufacturing & Processing.

- ii. Males had higher outturns in Architecture and Building, Engineering & Engineering Trades, Agriculture, Forestry and Fishery and Veterinary Services programmes.
- iii. Females had higher outturns in Manufacturing and Processing, Arts, Personal Services and Social Services.
- iv. Artisan level had the highest outturns at 54.5 percent, followed by Certificate at 23.9, Craft 19.8, Diploma and Proficiency at 2.2 percent each.
- v. Male outturns were higher in all levels during the period under review.

**Vocational Training Centres**

- i. Most outturns were at Artisan, followed by Craft and Certificate levels.
- ii. Manufacturing and Processing, Computing and Personal Services programmes had the highest outturns during the period under review, while those with the lowest outturns were Arts and Social Services.
- iii. Male outturns were higher at all levels.
- iv. Programmes with higher outturns for males were Architecture & Building, Arts and Engineering & Engineering Trades.
- v. Programmes with higher outturns for females were Personal Services, Education and Computing.

**Vocational Rehabilitation Centres**

- i. The period under review indicates that the programmes that had the highest outturns were Manufacturing and Processing followed by Computing and Education while the lowest was Personal Services.
- ii. Craft level had the highest number of outturns at 44.3 percent, followed by Artisan at 39.1, Certificate at 9.9 and Diploma at 6.6 percent.
- iii. In all levels male outturns were higher during the period under review.
- iv. Programmes with highest outturns for males were Manufacturing & Processing, Computing and Education.
- v. The programme with highest outturns for females was Personal Services.

## Commercial Colleges

- i. During the period under review the programmes that had the highest outturns were in Business & Administration, Computing and Personal Services while the lowest were Veterinary, Law, and Social and Behavioral Sciences.
- ii. Males had the higher outturns in Architecture and Building, followed by Engineering and Engineering Trades and Security Services, while lowest was Manufacturing and Processing.
- iii. Females had higher outturns in Manufacturing and Processing followed by Education and Personal Development programmes while the lowest was Architecture and Building.
- iv. Certificate level had the highest outturns at 52.7 percent, followed by Diploma at 42.2 percent while the lowest were Master's and Diploma.
- v. Female outturns were more than male for all levels, except in Master's and Bachelor's levels.

## GENERAL OBSERVATIONS

The following general observations were made:

- 1) For both public and privately owned training institutions, the programmes which recorded highest outturns in almost all levels of training institutions were: Business and Administration; Engineering & Engineering Trades and Architecture & Building.
- 2) All the top 3 programmes were dominated by males.
- 3) Male outturns generally outnumbered female - except in Teacher Training Colleges and Medical Training Colleges.
- 4) Manufacturing & Processing programme was dominated by females at virtually all levels - except only in Vocational Training Centres. The programme is offered mainly in middle level institutions.
- 5) In regard to skills development for the Big Four agenda, it was observed that two related programmes had consistently higher outturns compared to the rest. One of these was Engineering & Engineering Trades - which comprises Engineering Drawing, Mechanics, Metal work, Electricity, Electronics, Telecommunications, Energy and Chemical engineering, Vehicle Maintenance and Surveying. The other one was Architecture &



Building - which comprises Architecture and Town Planning, Structural Architecture, Landscape Architecture, Community Planning, Cartography; Building, Construction and Civil Engineering. These relate closely to the Affordable Housing agenda of the Big Four.

Access to Universal Health agenda was catered for under the Health programme predominantly offered in the Medical Training Colleges. Similarly, the Food Security agenda was catered for in the Agriculture, Forestry & Fishery programme offered predominantly in the Agriculture Related category of institutions. Veterinary Services programme, which also has a bearing on food security especially among pastoralist communities, performed poorly. Manufacturing programme, on which the enhanced manufacturing agenda falls, performed moderately.

Two striking similarities were observed between the findings of this survey and those of the last National Manpower Survey undertaken about 7 years ago in 2010/2011. The lack of parity in male-female representation ratio in the workforce recorded in the NMS report is very similar to the lack of parity in outturns for the two genders observed in this report. This is in spite of concerted efforts in bridging gaps between the genders over the years.

Similarly, the decline in skill areas related to Agriculture, Livestock and Fisheries recorded in the NMS report resonates with this survey's finding that outturns in programmes falling under these areas were comparatively very low. These programmes don't seem to appeal to would-be trainees. Yet Agriculture, Livestock and Fisheries are key focus areas for the Food and Nutrition Security agenda under the 'Big Four'.

## CHAPTER FOUR : CONCLUSION AND RECOMMENDATIONS

### Introduction

This chapter presents conclusions and recommendations of the survey report derived from both the direct survey findings and stakeholder input during the stakeholders validation workshop held in Nairobi on 30<sup>th</sup> May 2018 as follows: -

- i. There is need for Government to invest more in promotion of training programmes related directly to the ‘Big Four’ agenda-that include food security, affordable housing, manufacturing, and universal health care. The government, through the Universities and Colleges Central Placement Service (KUCCPS) could take intervention measures targeted at increasing enrolment in the Big Four related programmes, especially in the public sector institutions. Private sector institutions could also be given incentives to enhance enrolment in these areas.

Of particular cases for concern is under-enrolment in the Medical Training Colleges as confirmed during the stakeholders validation workshop, as well as recent reports on technical programmes failing to raise admissions owing to student disinterest.

- ii. There is need for institutions responsible for registration and accreditation to encourage diversification of training programmes to avoid flooding the labour market with surplus skills that may not necessarily be demanded by the industry thus creating skills mismatch and unemployment. Deliberate government intervention to control enrolment in courses according to prevailing national priorities is also recommended.
- iii. There is need to carry out further research to establish why Business and Administration programme continues to attract the highest number of trainees at all categories of training institutions and especially in TVET institutions which ordinarily would be expected to offer technology- related programmes.
- iv. More affirmative action is still required to encourage women to venture into the traditionally male dominated programmes such as Engineering, Architecture and Building, and for males to venture into Manufacturing and Processing.
- v. One of the reasons cited as to why Vocational Training Centres had a severe shortage of staff and in some cases shortage of workshop equipment for practical skills training was that

after the institutions were transferred from the national government to the counties, the national government grant per student trainee to the institutions was discontinued.

In some cases, instructors previously employed by the national government deserted mainly due to apparent transition challenges from national to county management of the institutions. There is therefore need for both levels of government to jointly find a lasting solution to this challenge for the sake of the youth who need this training.

- vi. Responsible agencies should establish why institutions have deviated from offering training within their core mandates. For example, Universities having relatively high outturns at Certificate level, and some Commercial Colleges producing outturns at Bachelor's and Master's degree levels.
- vii. The government could consider funding of students joining TVET institutions to make the training affordable and increase access. Plans by the Higher Education Loans Board (HELB) to provide loans for TVET students need to be fast tracked and publicized.
- viii. Regarding the reported serious shortage of technicians and technologists in construction fields such as plumbing, welding and masonry, a number of suggestions were made in addition to providing HELB loans. These included: -
  - Policy makers and training providers coming up with incentives to make these courses attractive to the youth.
  - A paradigm shift in career counselling in schools with a view to portraying technical courses in good light.
  - The private sector being given incentives to offer these practical courses.
  - Enhance the capacity of the National Industrial Training Authority (NITA) and other institutions for vocational/technical training to provide these on a much higher scale and quality than is being done currently.
- ix. Agencies charged with the regulation of middle level training institutions need to address the issue of standardization in Diploma and Certificate courses being offered in public institutions and those in private ones in terms of curriculum used and periods taken (Periods range from 6 weeks to 3 years).
- x. There is need to address possible duplication in the several types of public middle level training institutions: National Polytechnics, Technical Vocational Colleges (TVCs),

Technical Training Institutes (TTIs), Institutes of Technology, Vocational Training Centres, etc.

Centres of Excellence could be established and appropriately equipped to impart specialized technical skills that are in high demand in the economy.

- xi. Regarding the rapid expansion of University education – from 40 to 70 and which was not accompanied by a commensurate rapid growth of lecturer numbers, hence leaving the Universities scrambling for the inadequate training resources, the following measures were proposed:
  - Control of future expansion - for both private and public sector institutions to guard quality.
  - More aggressive affirmative action to fast track outturns at Master's and PhD levels to cater for the staffing levels in Universities and middle level colleges. This would involve financial sponsorship and reduction in course completion delays.
  - Curricula for high-end specialized courses such as Medicine, Engineering, etc could be modified to include a module in teaching/training to enable those undergoing training to take up part-time lecturing jobs in Universities.
- xii. There is need for comprehensive intervention measures by government and all stakeholders to address the dilemma of mass failures, re-define Artisan and Craft courses as competency-based training which provides critical skills to the economy, and not courses for 'failures' as currently perceived.
- xiii. Follow up surveys involving industry players are hereby recommended to ascertain the adequacy of outturns being produced from the local training institutions and the quality of the knowledge and skills imparted in relation to labour market requirements.

## APPENDICES

### **Appendix 1: Total Outturns in all Training Institutions that Responded by Programme and Sex, 2014-2016**

Programmes	2014			2015			2016		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Agriculture, Forestry and Fishery	1309	863	2172	1626	1095	2721	2017	1335	3352
Architecture and Building	4647	798	5445	4823	647	5470	5167	640	5807
Arts	498	477	975	610	583	1193	788	748	1536
Business and Administration	34679	34595	69273	38004	41071	79075	40900	44519	85420
Computing	14762	13712	28473	18760	18258	37017	21375	20956	42331
Education	15642	20079	35721	15117	19219	34337	14458	19812	34270
Engineering and Engineering Trades	26622	8892	35514	28763	8767	37530	28429	8271	36699
Environmental Protection	760	699	1459	866	672	1538	831	655	1487
Generic Programmes and Qualifications	264	90	354	215	104	319	474	84	557
Health	5897	7863	13760	6072	8197	14269	5321	7238	12559
Humanities	4296	3607	7904	4748	4568	9317	6005	5274	11279
Journalism and Information	3246	3393	6639	2883	3244	6127	2549	3062	5611
Law	593	665	1258	708	825	1533	774	1007	1781
Life Sciences	1469	1013	2481	1534	1237	2771	1678	1046	2724
Literacy and Numeracy	12	8	20	0	0	0	0	0	0
Manufacturing and Processing	939	2618	3554	1126	2873	3999	1245	3375	4619
Mathematics and Statistics	652	408	1060	1296	602	1898	1156	659	1816
Personal Development	241	209	450	26	10	37	16	2	18
Personal Services	7100	12812	19912	4846	13521	18366	4476	13656	18132
Physical Sciences	484	346	830	716	435	1152	711	458	1170
Security Services	413	264	677	601	326	927	1029	476	1505
Social and Behavioral Sciences	1161	1042	2203	1448	1302	2749	1726	1457	3183
Social Services	3344	4710	8054	3823	6012	9835	2220	3677	5898
Transport Services	1199	828	2027	1380	1127	2508	716	528	1244
Veterinary	187	79	266	213	75	288	254	116	370
<b>Total</b>	<b>130416</b>	<b>120069</b>	<b>250485</b>	<b>140205</b>	<b>134771</b>	<b>274976</b>	<b>144317</b>	<b>139051</b>	<b>283368</b>

**Appendix 2 : ISCED 2011 Classification**

UNESCO CLASSIFICATION	Description of components
Teacher Training and Education Science	Teacher training from pre-school, kindergarten, elementary school, vocational, practical non-vocational subjects, adult education, teacher trainers and for handicapped children. General and specialized teacher training Programme Education science; curriculum development in non-vocational and vocational subjects, Educational assessment, testing and measurements, educational research, other education sciences.
Humanities and Arts	<p><b>Arts Fine Arts:</b> Drawing, Painting, Sculpture; <b>Performing Arts:</b> Music, Drama, Dance, Circus; <b>Graphic and Audio-Visual Arts:</b> Photography, Cinematography, Music Production, Radio and T.V Production, Printing and Publishing Design; Craft Skills</p> <p><b>Humanities, Religion and Theology:</b> Foreign Languages and Culture: Living or 'Dead' Languages and their Literature, Area Studies; Native Languages: Current or Vernacular Language and its Literature; Other Humanities: interpretation and Translation, Linguistics, Comparative Literature, History, Archeology, Philosophy, Ethics.</p>
Social and Behavioral Sciences	Social and Behavioral Sciences: Economics, economic history, political science, sociology, demography, anthropology (except physical anthropology), ethnology, futurology, psychology, geography (except physical geography), peace and conflict studies, human rights
Journalism and Information	Journalism; Library Technician and Science; Technicians in Museums and similar repositories; Documentation Techniques; Archival Sciences.
Business and administration	Retailing, Marketing, Sales, Public Relations, Real Estate; Finance, Banking, Insurance, Investment Analysis; Accounting, Auditing, Book Keeping; Management, Public Administration, Institutional Administration, Personnel Administration; Secretarial and Office

	Work.
Law	Local Magistrates, 'notaires', law (general, International, Labor, Maritime, etc.) jurisprudence, History of law.
Life Sciences	Biology, Botany, Bacteriology, Toxicology, Microbiology, Zoology, Entomology, Ornithology, Genetics, Biochemistry, Biophysics, Other Allied Sciences, Excluding Clinical and Veterinary Sciences.
Physical Science	Astronomy and Space Sciences, Physics, Other allied subjects, Chemistry, Other allied subjects, Geology, Geophysics, Mineralogy, Physical Anthropology, Physical Geography and Other Geosciences, Meteorology and Other Atmospheric Sciences including climatic research, marine science, volcanology, paleoecology.
Mathematics and Statistics	Mathematics, Operations research, Numerical analysis, Actuarial Science, Statistics and other allied fields.
Computing	Computer Sciences: System Design, Computer Programming, Data Processing, Networks, Operating systems-software development only (hardware development should be classified with the engineering fields).
Engineering and engineering trades	Engineering drawing, Mechanics, Metal work, Electricity, Electronics, Telecommunications, Energy and Chemical engineering, Vehicle Maintenance, Surveying.
Manufacturing and Processing	Food and Drink Processing, Textiles, Clothes, Footwear, Leather, Materials (Wood, Paper, Plastic, Glass, etc.), Mining and Extraction.
Architecture and Building	Architecture and town Planning: Structural Architecture, Landscape architecture, Community Planning, Cartography; Building, Construction; Civil Engineering.
Agriculture, Forestry and fishery	Agriculture, crop and livestock production, agronomy, animal husbandry, horticulture and gardening, forestry and forest product techniques, natural parks, wildlife, fisheries, fishery science and technology.

Veterinary	Veterinary medicine, veterinary assisting.
Health	Medicine: Anatomy, Epidemiology, Cytology, Physiology, Immunology and Immunohematology, Pathology, Anesthesiology, Pediatrics, Obstetrics and gynecology, internal medicine, surgery, neurology, psychiatry, radiology, ophthalmology; Medical services: Public health services, hygiene, pharmacy, pharmacology, therapeutics, rehabilitation, prosthetics, optometry, nutrition; Nursing, Basic nursing and midwifery; Dental Services: dental assisting, dental hygienist, dental laboratory, technician, odontology.
Social services	Social care: care of the disabled, child care, youth services, gerontological services; social work: counseling, welfare not elsewhere classified (n.e.c)
Personal Services	Hotel and Catering, Travel and Tourism, Sports and Leisure, Hairdressing, Beauty Treatment, and Other Personal Services; cleaning, laundry, dry-cleaning, cosmetic services, domestic science.
Transport Services	Seamanship, Ship's officer, nautical science, aircrew, air traffic control, railway operations, road motor vehicle operations, postal service.
Environmental Protection	Environmental Conservation, Control and Protection, Air and Water pollution control, Labor Protection and security.
Security Services	Protection of property and persons: police work and related law enforcement, criminology, fire-protection and firefighting, civil security; military.
Not known or unspecified	(this category is not part of the classification itself but in data collection '99' is needed for 'fields of education not known or unspecified')



## **Appendix 3 : Questionnaire**

MEACLSP/NHRPD/1

(For Official Use) STLI/2016

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S/NO



**REPUBLIC OF KENYA**

### **MINISTRY OF EAST AFRICAN COMMUNITY (EAC), LABOUR AND SOCIAL PROTECTION**

#### **NATIONAL HUMAN RESOURCE PLANNING AND DEVELOPMENT DEPARTMENT**

##### **SKILLS INVENTORY STUDY OF TRAINING IN LOCAL INSTITUTIONS 2016**

#### **INSTRUCTIONS FOR COMPLETING THIS QUESTIONNAIRE**

1. Please complete this questionnaire and return to the officer conducting this exercise or to **The Director, National Human Resource Planning & Development Department, P.O. Box 40326 00100, Nairobi.** Tel. 2729800 Ext. 4403/4363, Mobile Number - 0727840841 or visit our offices at NSSF Building Block "B", 14<sup>th</sup> Floor.
2. Where the space provided in the questionnaire is not adequate, extra information may be attached in a separate sheet using the same format.
3. The information may also be provided in soft copy using the same format.
4. The information supplied will be treated with strict confidentiality and used for planning purposes only.

## **GENERAL PARTICULARS**

Name of the Institution -----

Type of Institution (e.g University, National Polytechnic, Medical Training College) --

-----

Postal Address ----- Telephone -----

County ----- Sub-County-----

Physical Location: Town-----, Road-----, Building-----

Type of ownership (Public or Private) -----

### **PART I: OUTTURNS IN 2014, 2015 and 2016 BY PROGRAMME/COURSE, EXAMINING BODY, DURATION, COST AND SEX**

S/N o	NAME OF PROGRAMME/COURSE *	CODE (FOR OFFICE USE)	EXAMININ G BODY	DURAT ION IN MONT HS	COST* *	NUMBER OF OUTTURNS BY SEX					
						2014		2015		2016	
						M	F	M	F	M	F

*\* Indicate for example, Degree in Pharmacy, Diploma in Automotive Engineering, Cert in C.P.A 1, etc,*

*\*\*Cost covers Tuition fees payable for the full duration of the course*

**PART II (A): ENTER THE CURRENT NUMBER OF ACADEMIC STAFF ON FULL TIME BASIS BY SKILL AREA, LEVEL AND SEX**

N/B: This part to be filled by the Head of Department

S/N o	Skill Area	Skill Level																	
		Phd		Masters		Bachelo rs		PGD		Higher Diplom a		Diploma		Certificat e		Craft		Artisan	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F

**PART II (B): ENTER THE CURRENT NUMBER OF ACADEMIC STAFF ON PART TIME BASIS BY SKILL AREA, LEVEL AND SEX**

S/ No	Skill Area	Skill Level																	
		Phd		Masters		Bachelors		PGD		Higher Diploma		Diploma		Certificate		Craft		Artisan	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F

**PART III: INDICATE ANY SKILL SHORTAGES IN TERMS OF SKILL AREAS AND LEVELS AS PER ESTABLISHMENT**

S/No	Skill Area	Skill Level*	Optimal	In post		Shortfall	Main Reasons for Shortfall
				M	F		

*\*Skill level i.e Phd, Masters, Bachelors, PGD, Higher Diploma, Diploma, Certificate, Craft, Artisan*

Name of person completing the questionnaire.....

Designation .....

Signature .....

Official Rubber stamp----- Date-----

**Thank you for participating in this exercise!**

Name of Officer administering the questionnaire.....

Signature ..... Date .....