# Certified Analytics and Insights Professionals of Canada (CAIP Canada)

# Competency Framework

# July 29, 2020

# INTRODUCTION

The growth of data has created huge opportunities for organizations to gain a competitive advantage.  While many organizations are investing heavily to become more data-driven, many are facing challenges finding talent who can identify the business opportunities the data holds.  The Certified Analytics Insights Professionals (CAIP) is the qualification for professionals with the skills to analyze and use data to solve business problems.  It also addresses the need for applying a strong ethical framework to the analysis of data.  This unique qualification brings a combination of the analytical and business skills guided by a strong ethics that will help organizations succeed in the world of data.

To help ensure the highest level of professionalism and competency in the practice of research, insights and analytics in Canada, CAIP Canada has developed this competency framework.  Working with leaders across the industry, we defined the combination of knowledge, skills, and practical abilities that a CAIP should be able to demonstrate.  These competencies are made up of both technical and non-technical competencies and they are grounded in a solid foundation of strong professional ethics and behaviours relevant to the research and analytics industry.  The competencies cover a broad set of skills that will serve as a strong base for those who choose to specialize in areas such as analytics or qualitative research later in their career.  The CAIP Competency Framework is kept up to date through an annual review by CAIP Canada's Board of Examiners.

CAIP Canada is endorsed and supported by the Canadian Research Insights Council (CRIC) and ESOMAR.  CRIC is Canada's voice of the research, insights and analytics industry both domestically and globally.  CRIC represents the highest standards, ethics and best practices in research that protect the public interest.  Its members include research agencies, companies that rely on insights, and other industry partners.  ESOMAR is the global voice of the data analytics, research and insights community, speaking on behalf of over 6000 individual professionals and more than 600 companies who provide or commission data analytics and research in more than 130 countries, all of whom agree to uphold the ICC/ESOMAR International Code.

## Purpose

This CAIP Competency Framework serves as the foundation for the CAIP program.  The CAIP Competency Framework:

1. Defines the competencies that will be tested on the CAIP exam.
2. Sets the base competency levels for earning the CAIP designation.
3. Establishes the demonstrated capabilities that employers and clients can expect from a CAIP.
4. Serves as a guide for candidates that helps them identify the education and experience they need to be successful on the CAIP exam.

5. Helps employers deliver relevant experience to candidates to prepare them for the CAIP examination.
6. Provides guidance to educators for developing curriculum that will prepare candidates for the exam.
7. Assists CAIPs in identifying areas to continue to develop their competencies post certification.

# Enabling and Technical Competencies

Enabling competencies are the essential skills that are pervasive to all the work performed by a CAIP.  They are broken down into four major categories:

**Professional and ethical practice** – CAIPs must have strong ethics that comply with CRIC Standards including the ICC/ESOMAR Code and also exhibit ethical behaviour that exemplifies and enhances the reputation of the profession.  They will proactively identify ethical concerns and will effectively ensure that organizations they work for and with avoid unethical behaviour.  They must also have a working knowledge of the Personal Information and Protection and Electronics Document Act, the General Data Protection Regulation (GDPR) and other Canadian and global privacy and data standards and regulations.

**Problem solving and analysis** – CAIPs must draw on strong problem solving and analytical skills in order to assess complex research and analytics situations and identify practical solutions.

**Communication** – CAIPs must rely on effective listening and understanding to deliver clear, persuasive and effective communications both orally and in written form.  CAIPs must be able to appropriately communicate complex research and analytical topics so that they are clearly understood by their audience.

**Leadership, teamwork and collaboration** – CAIPs must have the ability to work within, build and lead teams.  They must also be able to effectively work with and foster strong relationships with staff, clients and other stakeholders.

The CAIP technical competencies reflect the abilities expected of CAIPs in the work that they do.  They fall into four major categories:

**Define Business/Organization Problem and Approach** – The work of CAIPs is centered around identifying, gathering and analyzing primary and secondary data sources to pinpoint insights that solve business/organization problems.  This could be uncovering new opportunities, enhancing products/services, reducing risk, enhancing promotions and optimizing investment in marketing.  CAIPs will face complex and often ambiguous assignments.  Projects will often start with accurately defining the problem/opportunity that they seek to address.  Upon defining the problem, a CAIP must be able to frame that problem from a research, insights and analytics perspective.   A CAIP will assess whether the problem is one that can be solved by analytics and insights and, where it is, recommend a suitable and pragmatic approach. CAIPs must have a strong understanding of the different methodologies for gathering and analyzing both secondary and primary data sources to identify the most effective and efficient methods for the problem/opportunity.

**Identify and Collect/Gather Data** – CAIPs must understand best practices with respect to identifying, gathering and using both secondary and primary data.  These include ensuring data sources are representative of the intended audiences, data collection instruments are designed

optimally, data are used ethically and personal information in data is protected. There also needs to be an understanding and implementation of processes to delete information as needed, as requested by the client in concordance with applicable regulations such as PIPEDA, and GDPR.

**Analyze Data** – CAIPs must understand the methods of analyzing both secondary and primary sources of qualitative and quantitative data. They must understand the appropriateness of each method based on data quality, ethics and best practices and understand associated limitations. A CAIPs' analysis of data must lead to actionable insights that address the problem/opportunity.

**Communicate Findings and Insights** – CAIPs must be able to effectively communicate the key findings and actionable insights from a project in a persuasive and compelling fashion. Communications should inform decision making and lead to improved results for the organization. CAIPs must ensure that insights are supported by data and be clear on any limitations for the given data source.

# CAIP Competency Framework

| Professional & Ethical Practice | | Communication | |
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| **Define Problem/ Approach** | **Identify & Collect/Gather Data** | **Analyze Data** | **Communicate Findings & Insights** |
| Problem Solving & Analytical Skills | | Leadership, Teamwork, and Collaboration | |

# Enabling Competencies

## 1. Professional & Ethical Practice

1.1 Applies sound ethical reasoning.

1.1.1 Identifies situations involving ethical issues particularly those covered in the CRIC Standards which includes the ICC/ESOMAR Code.

1.1.2 Uses appropriate professional values for choosing or recommending an ethical course of action.

1.1.3 Reports ethical issues to higher levels of management, regulatory authorities, or others when appropriate.

1.2 Adopts CAIP Canada values of professional honesty, integrity, professional competence and life-long learning.

1.2.1 Exhibits professional honesty and integrity in all dealings with clients, colleagues and other stakeholders.

1.2.2 Performs work competently and with due care.

1.2.3 Adopts an attitude of life-long learning and stays abreast of current trends and emerging issues.

1.3 Maintains a high duty of care with respect to stakeholders, especially data subjects.

1.3.1 Is fully transparent with data subjects on the information collected, its purpose, and who it might be shared with and in what form.

1.3.2 Ensures personal data used in research is thoroughly protected from unauthorised access and not disclosed without the consent of the data subject.

1.3.3 Always behave ethically and not do anything that might harm a data subject or damage the reputation of market, opinion and social research.

1.3.4 Protects stakeholder interests by maintaining confidentiality and avoiding conflicts of interest.

1.4 Adheres to laws, professional standards, and policies when exercising professional judgement.

1.4.1 Complies with laws and regulations including PIPEDA and related Canadian regulations as well as GDPR and other global privacy regulations.

1.4.2 Acts in accordance with the CRIC Standards including the ICC/ESOMAR Code.

1.4.3 Complies with organizational policies.

## 2. Problem Solving and Analysis

2.1 Demonstrates a comprehensive and cohesive process for using professional judgment to solve problems.

2.1.1 Accurately defines the scope of the problem.

2.1.2 Performs appropriate analyses to fully understand the problem.

2.1.3 Applies creativity and considers a wide variety of solutions.

2.1.4 Recommends cost effective solutions/approaches to resolve the problem.

### 3. Communication

3.1 Uses active listening to gather relevant information and understand other perspectives.
3.2 Communicates logically, clearly, concisely and persuasively using appropriate media.
3.3 Adapts communications/content to meet audience needs.

### 4. Leadership, Teamwork and Collaboration

4.1 Devises comprehensive plans for projects and work team.
4.2 Effectively leads teams and projects in terms of work flows, timeframes and budget considerations.
4.3 Works effectively as a collaborative and decisive team member.
4.4 Effectively builds and manages strong relationships with staff, internal/external clients and other stakeholders.

# Technical Competencies

### 1. Define Business/Organization Problem/Opportunity and Research Approach

| 1.1 | Leads discussions with internal and external clients applying a consultative approach to obtain a deep understanding of the business/organization context, problems and opportunities. |
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| 1.2 | Makes appropriate use of secondary research to gain an in-depth understanding of the business/organization context, problems and opportunities. |
| 1.3 | Clearly defines the business/organization problem(s) or opportunity(ies). |
| 1.4 | Frame problems/opportunities from an insights and analytics perspective to identify key research objectives that are tied to specific - outcomes and success criteria. |
| 1.5 | Assesses and advises whether insights and analytics offer practical options for solving the problem balancing the investment with the value the analytics and insights will provide. |
| 1.6 | Considers the appropriateness of both primary and secondary data sources and both qualitative and quantitative methods. |
| 1.7 | Understands and addresses challenges/differences related to gaining data from different target audiences including regional considerations and other challenges to reach unique audiences. |
| 1.8 | Critically evaluates and/or recommends the appropriate research design (exploratory, descriptive, causal) and effective and practical approaches for using analytics and insights. |
| 1.9 | Identifies the appropriate level and depth of information required to support decision making to maximize the value of the investment, ensure timelines are met and adhere to the budget. |
| 1.10 | Clearly develops research proposals and/or critically evaluates research proposals for the business/organization need, the approach, the methodologies, the analytical processes, timelines, costs and deliverables. |
| 1.11 | Understands ethical considerations and ensures the proposed approach follows best ethical, confidentiality, security and privacy practices. |

## 2. Identify and Collect/Gather Data

| 2.1 | **Quantitative Primary Data Collection** |
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| 2.1.1 | Recommends and/or evaluates within the research design framework, quantitative methods that are appropriate and cost efficient given the research objectives considering the strengths and weaknesses of self-administered, interviewer-administered, computer-assisted approaches and mixed modes. Applies the insights of other project phases into the design of quantitative methods. |
| 2.1.2 | Understands the fundamentals of quantitative research sampling to design and/or critically evaluate an effective sampling procedure(s). Applies the best practices of sampling including best modes to reach a population, determination of the sample frame, sample size and selection of sampling procedures including steps to draw the final sample:<br>-evaluates the appropriateness of probability and non-probability samples for a project considering the benefits and limitations of each;<br>-considers the appropriateness of Internet, landline, mobile and in-person sampling approaches given the strengths and limitations of each;<br>-describes all applicable sources of error for a sample procedure including measures of sampling and non-sampling error;<br>-recommends sample frames based on an understanding of the factors that could impact the quality of the sample (recruitment methods, routing, pre-screening, measures to validate respondents, frequency of participation, etc.); and<br>-evaluates factors to determine the appropriateness of various online panels. |
| 2.1.3 | Understands the best practices of questionnaire design in order to design and/or critically evaluate a focused and effective questionnaire. Applies the best practices of questionnaire design that:<br>-clearly addresses the research objectives;<br>-applies appropriate scales for the proposed analytical procedures;<br>-minimizes bias (e.g., avoid leading, loaded, double-barreled questions and consider bias effects related to order);<br>-encourages respondent engagement (not onerous, clearly worded questions, engagement techniques, etc.); and<br>-optimizes questionnaires for the mode of delivery (online, mobile, landline, IVR, in-person, interviewer administered, self-administered, etc.). |
| 2.2 | **Qualitative Primary Data Collection** |
| 2.2.1 | Understands the fundamentals of qualitative methodologies to recommend and/or critically evaluate within the research design framework, qualitative methods that are appropriate and cost efficient given the research objectives considering the strengths and weaknesses of focus groups, online focus groups, discussion boards, online communities, ethnographic research, in-depth interviews, AI chatbots, observation and other qualitative methods. Applies the insights of other project phases into the design of qualitative methods. |

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| 2.2.2 | Recommends and/or evaluates best qualitative sampling practices related to appropriate geographic locations, group size/composition/number, and optimal facilities to effectively meet the research objective(s). |
| 2.2.3 | Employs and/or assesses best practices with respect to recruitment approaches and participant validation. |
| 2.2.4 | Understand best practices with respect to moderating/facilitating qualitative research (role of the moderator, maintaining control/focus, projective techniques, etc.). |
| 2.2.5 | Develops and/or assesses recruitment screeners that ensure the optimal group of participants. |
| 2.2.6 | Optimizes the use of direct and indirect observation in the conduct of qualitative research. |
| 2.2.7 | Develops and/or critically evaluates moderator guides in terms of best practices and ethical considerations. |
| 2.2.8 | Manages and/or assesses client participation and expectations in qualitative settings. |
| **2.3** | **Secondary Data Sources** |
| 2.3.1 | Recommends the use of secondary data sources that are appropriate and cost efficient given the research objectives considering the strengths and weaknesses of using relevant data sources. |
| 2.3.2 | Understands the major types of both structured and unstructured secondary data including syndicated data, transaction data, social media data, and "Internet of Things" data and the strengths and weaknesses of each. |
| 2.3.3 | Assesses the quality of secondary data and the ethical considerations in using the data for research by reviewing the data governance, data curation and data provenance/data lineage. |
| **2.4** | **Applies a high duty of care to individuals whose data are collected (data subjects) in terms of ethics, confidentiality, anonymity, security and privacy practices.** |
| 2.4.1 | Ensures transparency with data subjects on the personal data collected, its purpose and with whom and it what form it will be shared. |
| 2.4.2 | Protects and secures personal data from unauthorized access and ensures it is kept confidential and not disclosed without the consent of the data subject. |
| 2.4.3 | Ensures data subjects do not experience adverse consequences or harm from participating in research and offer appropriate and approved mitigating interventions if necessary. |
| 2.4.4 | Ensures the collection and use of personal data complies with regulation and laws including PIPEDA and GDPR. |

## 3. Analyze Data

| 3.1 | **Data Cleaning/preparation** |
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| 3.1.1 | Understands the best practices of data processing to apply or assess the need for data cleansing techniques to assess and correct for data quality issues.  This includes<br>-detecting and correcting for inconsistent, outlier, irrelevant, inaccurate, duplicate, corrupt, suspect, and missing data.<br>-identifying patterns to assess quality of survey data (speeders, straight liners, etc).<br>-understanding the use of data lakes and other methods for aggregating multiple data sources to meet the research and analytics objectives. |
| 3.1.2 | Understands weighting in order to apply data weighting and variable recording appropriately or critically assess the need. |
| **3.2** | **Quantitative Data Analysis (primary and secondary data)** |
| 3.2.1 | Understands the fundamentals of quantitative data analysis in order to prepare and/or critically evaluate and/or provide guidance on appropriate and effective analyses considering the appropriate quantitative analysis based on the data quality and data type to identify findings related to the research objectives. |
| 3.2.2 | Applies quantitative methods to test hypotheses and accurately assess the potential error of those hypotheses. |
| 3.2.3 | Understands and explains the difference in analyses between<br>-statistical significance levels and business significance<br>-association and causation. |
| 3.2.4 | Understands and interprets common analytical techniques that identify associations including correlation and regression, keeping in mind the limitations of each. |
| 3.2.5 | Understands the value offered by and guides the appropriate use of advanced analytical techniques including factor analysis, segmentation analysis, cluster analysis, perceptual mapping, conjoint analysis, predictive modeling, choice modelling, discriminant analysis, market mix modeling and time series and works with specialists to apply techniques where appropriate. |
| 3.2.6 | Understands the value and appropriate use of machine learning and artificial intelligence and works with specialists to apply techniques where appropriate. |
| **3.3** | **Qualitative Data Analysis (primary and secondary data)** |
| 3.3.1 | Understands the fundamentals of qualitative data analysis in order to prepare and/or critically evaluate and/or provide guidance on appropriate and effective analyses of qualitative data using appropriate tools and techniques (notes from primary data, transcripts, recordings, text/audio/video analysis, sentiment analysis, data visualization, data classification tools, temporal modeling, biometric tools, etc.) to identify the most important themes and findings related to the research objectives. |
| 3.3.2 | Considers non-verbal communication in the analysis of live and video data to accurately assess support or conflict with verbal/written communications and to identify unstated disagreement. |
| 3.3.3 | Uses and/or evaluates the use of direct quotes from data subjects in analysis that best support the most important findings related to the research objectives. |

| 3.3.4 | Assess the extent, intensity and specificity of both verbal and non-verbal communications in the analysis. |
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| 3.3.5 | Considers the impact of contextual factors relevant to the data source.  This would include type of data (primary/secondary), the setting (online, at a facility, at home, or another location), environmental factors (e.g., news events that could influence views), group dynamics (where data is compiled in a group forum such as a social medial channel or through group based primary research study). |
| 3.4 | **Developing actionable insights** |
| 3.4.1 | Effectively triangulates analysis of quantitative, qualitative and secondary source data into valuable insights that support the research objectives. |
| 3.4.2 | Consults with internal and external client/decision makers regarding preliminary insights to assist in the framing of the results leading to recommendations. |
| 3.4.3 | Develops recommendations supported by those insights that are practical and creative and will help the client/decision makers address the original business/organization problem or opportunity. |

## 4. Communicate Findings and Insights

| 4.1 | Effectively communicates research and analytics findings and key insights that address the research objectives in both written and oral forms. |
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| 4.2 | Clearly distinguishes between findings resulting from the research and analytics and opinions of the professional interpreting the results. |
| 4.3 | Conveys complex concepts in a way that is appropriate to the audience. |
| 4.4 | Applies effective uses of graphics (graphs, pictures, infographics) to emphasize key findings and insights that are digestible by the audience. |
| 4.5 | Communicates limitation(s), if any, with the final overall research design and limitation(s) in the data. |
| 4.6 | Applies storytelling in the most appropriate media to build a clear picture of the key recommendations based on the facts, findings and insights for the business/organization problem and opportunity. |