THE COUNCIL FOR ACCESS TO THE PROFESSION OF ENGINEERING

FROM CANADIAN FIRST TO CANADA FIRST

PRESENTATION ON CAPE POLICY AND OTHER INITIATIVES

At

LEADERSHIP DEVELOPMENT SESSION

*10*th December 2005

AGENDA

- *Introduction to CAPE and its membership*
- *CAPE research, findings and recommendations*
- *Current engineering practice*
- *Emerging engineering practices*
- *Federal vision and policy*
- *Federal/Provincial disconnect*
- *Key Findings*
- *Short-term*
- *Long-term*
- CAPE initiatives and next steps

THE COUNCIL FOR ACCESS TO THE PROFESSION OF ENGINEERING (CAPE)

- Evolving membership based organisation for the following categories of immigrants with engineering backgrounds living in Ontario
  - *998 Members and growing from across the province*
  - *coalition of some 20 existing and evolving community engineering associations (estimated 10 to 12 thousand members)*
  - *Potential new entrants (estimated at over 10,000 per year)*

CAPE Vision

- Maximize our potential to contribute to our:
  - Local communities
  - Province
  - Country
  - Planet
- Through
  - Meaningful and productive utilization of our engineering knowledge and experience
  - Upgrading our knowledge and skills in keeping with evolving trends in engineering and sustainable human development.

COMMUNITY ACTION RESEARCH

Through ‘Engineering Access’ a community action research Project (funded by Canadian Heritage, Human Resources Skills Development and CAPE in almost equal shares) we have:

- Developed into an effective and legitimate voice for immigrants with engineering backgrounds (IEBs);
- Documented systemic barriers facing employers and immigrants with engineering backgrounds to labour market integration (CERIS Working Paper No.41, November 2005)
- Developed labour market information and tools to promote cross-cultural understanding within the engineering workplace in Ontario
- Set up an interactive and informative website for IEBs

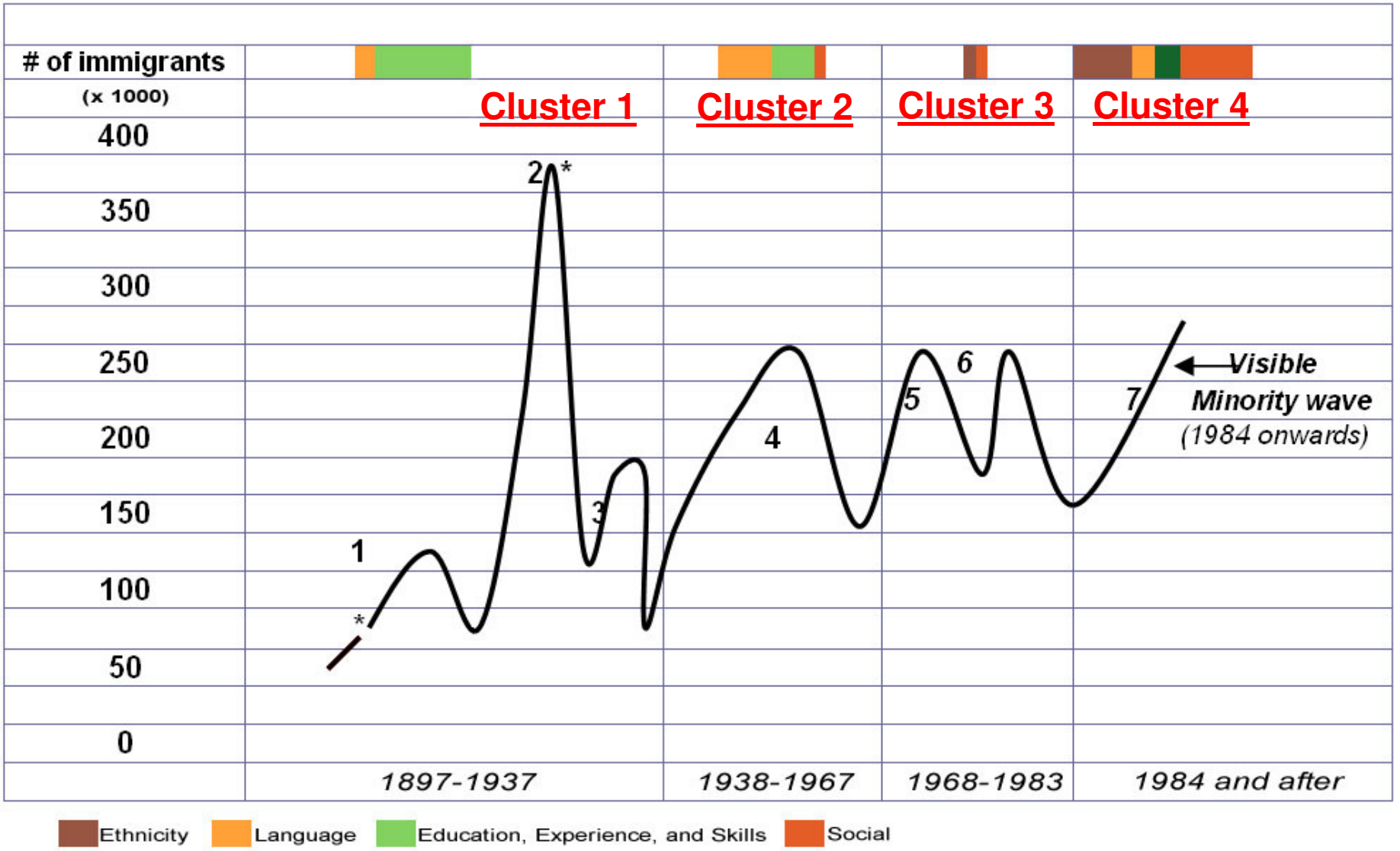
CAPE MEMBERSHIP

- Multi-cultural from over 70 countries
- Multi-disciplinary – 23 engineering disciplines
- Inter-disciplinary – sometimes holding qualifications in multiple disciplines (IT in particular)
- Highly educated 65% Bachelors, 29% Masters 5% Doctorates
- Extensive global experience – 12.2 years on average
- Over 50% have been in Ontario for more than 2 years.

CAPE MEMBERSHIP DATA

- By Region
- Range of qualifications
- Range of disciplines
- Length of stay
- Years of experience
- Employment status

CANADIAN 'EXPERIMENTS' IN DIVERSITY
CERIS Working Paper No.41, November 2005



CLUSTER 1(THREE WAVES): 1897-1937
FIRST WORLD WAR

- Preferred source countries – white commonwealth
  - Britain, United States, Newfoundland, South Africa, Irish Free State, New Zealand, Australia
- Wave 1: Miners, engineers and scientists
  - set up Canadian Society of Civil Engineers (CSCE) to control supply of engineers
- Wave 2: WW1Refugees and Returning Military engineers led to competition
  - CSCE devolved to provinces leading to formation of Professional Engineers of Ontario in 1922
  - Licensing made mandatory 1937
  - Language disconnect
- Wave 3: Unskilled workers and refugees (Non-preferred European)
  - Voluntary settlement organizations setup in response to language disconnect of immigrants from non-preferred European countries

BACK

CLUSTER 2 (ONE WAVE): 1938-1967
SECOND WORLD WAR

- Wave 4 - 'Non-preferred' source countries
  - Eastern and Southern Europe (language and education system disconnect)
- Expansion of universities and community colleges?
- Refugees WWII, unskilled workers (trades and technicians) and few professionals
  - Reserved title for Engineers introduced by PEO to set apart Engineers and technicians (gate-keeping)
  - Academic accreditation
- Certification of technicians initiated by PEO
  - OACETT set up in 1961
- Underutilization of skilled tradespersons
  - Voluntary ethno-cultural community settlement organizations e.g COSTI (1961) set up to provide training and retraining to Italians or language training and bridging education (Polish engineers)

BACK

CLUSTER 3(TWO WAVES): 1968-1983 ECONOMIC SLOWDOWN AND STAGNATION

- Non-preferred and non-traditional source Countries
  - Mostly non-preferred European (language and education disconnect); and
  - a few from non-traditional countries (social, cultural and partial language disconnect)
- Bill of Rights (1960) and Charter of rights (1982)
- Shortage of skilled workers
- Expansion of community colleges
- Wave 6 – Skilled workers based on point system
  - Prearranged Employment a condition for skilled workers
- Education or language disconnect irrelevant
- Settlement services formally handed over to voluntary and ethno-cultural community organizations
  - mandate extended to include employment support for non-skilled workers and refugees.

BACK

CLUSTER 4 (ONE WAVE): 1984 TO DATE RESTRUCTURING AND GLOBALIZATION

- Overwhelmingly diverse and non-traditional source countries
  - **largely commonwealth countries but social, ethnic and cultural disconnect**
- Points geared to highly educated and experienced immigrants
  - **Pre-arranged employment condition eliminated**
  - **Tenfold increase in immigrants with engineering credentials (Competition)**
- Although immigrants more educated and experienced than host population but
  - **employers risk averse due to lack of knowledge of foreign credentials**
  - **Protection of life, health, property and public welfare introduced into licensing in 1984 by PEO**
  - **Experience accreditation and Canadian Experience introduced into licensing by PEO in 1990 (gate-keeping)**
- Employment support for non-skilled workers and refugees extended to assist IEBs and other professionals
  - **To bridge surplus skills/qualifications or employers lack of foreign credentials?**
  - **New Ethno-cultural engineering associations formed**
  - **Translated into ESL, LINC**

BACK

FEDERAL VISION
INNOVATION STRATEGY CANADA (2004)

- Why skills? And why now?
- First, the knowledge-based economy means an ever-increasing demand for a well-educated and skilled workforce in all parts of the economy and in all parts of the country.
- Second, there is a looming demographic crunch that will exacerbate these skills shortages.
- Third, our learning system must be strengthened if we are to meet the skills and labour force demands of the next decades
- Global competition is accelerating, particularly for highly skilled knowledge workers. Canada is not alone in seeking skilled immigrants.

EMERGING ENGINEERING TRENDS

- New engineered materials and processes
- Pervasive use of information technology in products and process of engineering.
- Large number and complexity of the constraints on acceptable engineering solutions; while cost and functionality dominate at present, now societal and ecological concerns will dominate for sustainability based engineering.
- The globalization of industry and the associated shift from a nationally differentiated engineering enterprise to one that is far more cosmopolitan.
- Rapid technical intensity of most manufacturing and service industries, both absolute specific technical knowledge required and the breadth of knowledge needed in a single product or service.
- The expanded role of the engineer as part a product team, and the broad business knowledge required to fill that role.
- The increased pace of change. There seems to be less time to assimilate and adapt, and this raises concerns about long-term employment, which in turn creates stress among individual engineers.

CURRENT PRACTICE
PEO POSITION OCTOBER 2005

- It is in the public's interest to maintain the current Canadian regulatory model for the practice of engineering,
- This relies on one act and one regulatory body within provincial and territorial jurisdictions, to promote transparency and accountability.
- The existing regulatory model is simple, clear, well defined, open to change, proven, and able to provide graduated and appropriate levels of professional responsibility.
- The public is best served by having those taking responsibility for engineering practice meet an appropriate and consistent high standard of education and experience, with one body determining standards of practice

LABOUR MARKET INTEGRATION OF IEBS
CURRENT MODEL:CANADIANS FIRST

EMPLOYER ISSUES

- Employers lack knowledge of foreign credentials
- Employers lack knowledge of other country experience
- Employers are risk adverse
- Consequently employers depend on human resources firms/departments to transform job descriptions into hired workers

OUTCOMES

- Poor immigration decision support information
- Poor entry and labour market integration information for engineering in Ontario
- Deskilling of IEBs and De-legitimization of their credentials
- Poor social, ethnic or cultural links to the host population

HIRING PRACTICES

Recruiters translate 'risk adversity' into:

- Hiring 'Canadians first' as justifiable 'exact fit' – scanning for:
- Canadian Experience
- PEO License or other local accreditation
- Language and work place culture compatibility under the cover of soft skills

SYSTEMIC BARRIERS

- 'Reserved Title' – keep out foreign skills and experience on landing
- Multiple foreign credential recognition systems which are not harmonized
- Experience Assessment by representatives having inadequate or outdated other country knowledge?
- Piecemeal workplace integration support by voluntary sector – ESL, resume writing, cold calling, networking and sector terminology

EMERGING TRENDS IMMIGRATION ADDRESSING FEDERAL/PROVINCIAL DISCONNECTS

- Federal, Provincial and Territorial Strategic Direction on immigration
- Canada Ontario Immigration Accord:
  - Settlement Services
  - Language Training
  - Partnerships with Municipalities
  - Provincial Nominee Program
  - Immigration Portal
  - Newcomer Statistics
- Canada-Ontario Labour Market Partnership Agreement
  - Labour market integration of recent immigrants
  - Workplace skills development
- Canada-Ontario Labour market Development Agreement
  - Employment insurance funded initiatives

GLOBALIZATION AND FREE TRADE AGREEMENTS (FTA)

- *Free trade requires borderless access to the marketplace as well as the labour pool*
- *Access to marketplace is function of FTA and reduction of protectionism*
- *Access to the global labour pool calls for change in the historical role of the government to protect domestic workers from competition*
- *With reducing numbers of Canadian students entering engineering education, negative demographics and emergence of new economic competition Canada has no choice but to allow access to the global labour pool to remain competitive*
- *Consequently we are in the transition from 'Canadian First" to "Canada First'*
- *Ontario has yet to adapt to this transition from "Canadians First" to "Canada First" and IEBs are victims of this inadequacy.*

KEY RESEARCH FINDINGS

- No space in Ontario in which immigrants with engineering backgrounds who came under the point system geared to attract knowledge workers can independently demonstrate their skills, knowledge or proficiencies other than employment supports not geared to their needs and which drive them into survival modes of employment.
- Immigrants can only contribute to achieving the vision laid out in the innovation strategy of Canada if they are allowed to use their skills and knowledge
- IEBs represent the leading edge of the global migrant knowledge workers

RESEARCH RECOMMENDATIONS: SHORT-TERM

- New policy processes geared to creating an employment strategy to achieve meaningful employment outcomes for IEBs be instituted by broadening public consultation processes to engage all stakeholders, including the employers; the regulators; the education, training and immigration services sectors as well as the immigrants with professional backgrounds to allow them a means to create independent space.
- Opportunities and ‘space’ are created for IEBs to demonstrate their skills and knowledge through skills commensurate employment that lends itself to evolution of sustainable communities, institutions and technologies within the emerging engineering trends

RESEARCH RECOMMENDATIONS
LONG-TERM

- Regulation of professions, such as engineering, meet the commitments made by Canada to international trade agreements, GATS and NAFTA included;
- Employers rise to the challenge of global competition, and move beyond familiarity to embrace change while recruiters adapt HR technologies to the emerging global skills framework;
- The province gives serious commitment to the principles of equity and equality of employment outcomes for a sustainable future

LABOUR MARKET INTEGRATION OF IEBS
PROPOSED MODEL: CANADA FIRST

EMPLOYERS

- Move beyond familiarity to embrace change
- Move to tap into global marketplace
- Utilize global knowledge and skills pool within their easy reach
- Transform their human resource practices to rise to the challenge of globalization and avoid the risk of being left behind.

EXPECTED OUTCOMES

- Equitable and skills commensurate employment outcomes
- Relevant and cost-effective employment supports
- Creation of common shared global work culture
- Strong information sharing systems
- Maximum utilization and contribution of skills and knowledge
- Social cohesion and world class workforce

HIRING PRACTICES

Recruiters translate employer needs into:

- Hiring for 'Canada First' as opposed to 'Canadians First'
- Merit and global competency based frameworks and scanning processes
- Demands for licensing derived upon the basis of NAFTA, GATS and other emerging free trade agreement requirements
- Communication rather generic language skills

SYSTEMIC BARRIERS

- Acknowledge Range of 'Reserved Titles'
- Harmonize foreign credential recognition systems
- Continuous Professional Development for all focusing on Cross cultural experience and emerging paradigms
- Broaden public consultation processes to engage all stakeholders in developing holistic employment supports and cross-cultural workplace competencies

CREATING A SPACE FOR IEBs

- There was no organization representing IEBs
- Through its multi-stakeholder roundtable on developing an employment strategy for IEBs CAPE has established itself as a legitimate voice for IEBs
- Creating database of skills, experience and credentials of IEBs(998 CAPE members and 66 form a community association)
- Mapping of existing professional engineering opportunities
- Investigating how IEBs can meet the aspirations of the Federal vision in the medium term (Preliminary ideas will be discussed)

CAPE's MULTI-STAKEHOLDER ROUNDTABLE EMPLOYMENT STRATEGY

- APT is a member of this roundtable
- CAPE should work with CCPE, PEO, OSPE to create a framework for a process from pre-immigration selection and information, to settlement into relatively suitable employment for immigrants with engineering backgrounds (IEBs)
- Cape is developing a conceptual design of pilots that can create the room for them to fill the gap between conventional engineering and sustainable engineering

PRELIMINARY INITIATIVES

- Hold a database of skills and qualifications of 998 IEBs
  - Extend this to incorporate the databases of our community association coalition
  - Assess and develop knowledge specific sub-databases (e.g engineers having IT skills as well)
- Pilots
  - Moving the information systems of institutional structures to knowledge application through management information systems and decision information systems geared to the fast pace of change
  - Creating tools to help institutions to move to horizontal information sharing and decision knowledge systems geared to the emerging context based (societal, ecological and physical) engineering

DISCUSSION

IEB Survey- Range of disciplines

Engineering Discipline	Number
Civil Engineering	177
Electrical and Electronics Engineering	162
Mechanical Engineering	154
Engineering Managers	82
Industrial and Manufacturing Engineering	72
Chemical Engineering	56
Software Engineering	32
Electrical and Electronics Engineering Technologists and Technicians	30
Geological Engineering	6
Railway and Yard Locomotive Engineering	6
Civil Engineering Technologists and Technicians	25
Computer Engineering (Except Software Engineering)	29

Next

IEB Survey- Range of disciplines (Continued)

Engineering Discipline	Number
Metallurgical and Materials Engineering	21
Engineering Inspectors and Regulatory Officers	16
Industrial Engineering and Manufacturing Technologists and Technicians	15
Petroleum Engineering	14
Aerospace Engineering	13
Mechanical Engineering Technologists and Technicians	13
Mining Engineering	9
Engineering Officers, Water Transport	8
Stationary Engineering and Auxiliary Equipment Operators	7
Geological Engineering	6
Railway and Yard Locomotive Engineering	6
Other Professional Engineering, n.e.c.	35

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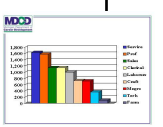
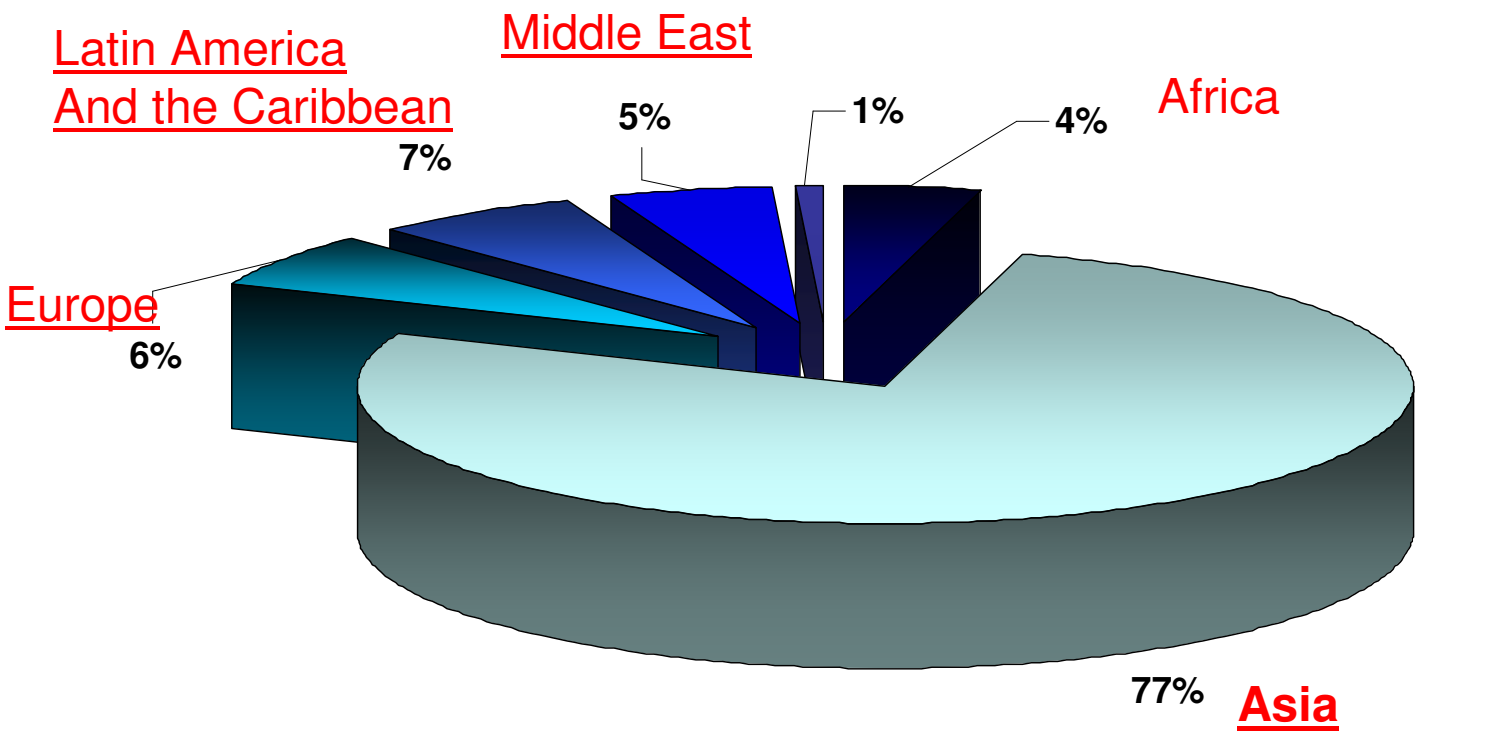
chart



MEMBERS FROM DIFFERENT REGIONS



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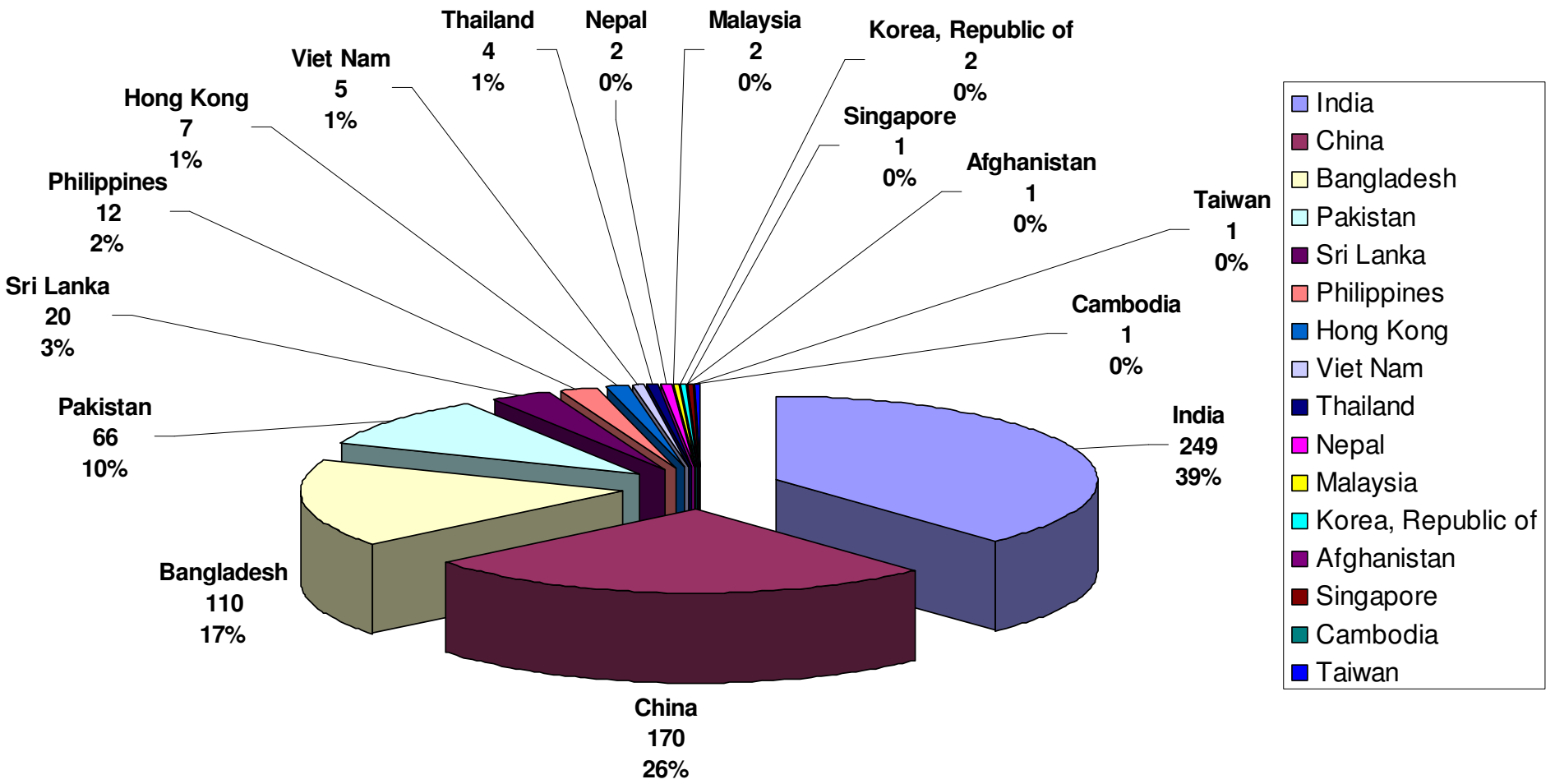
Members from Asian countries



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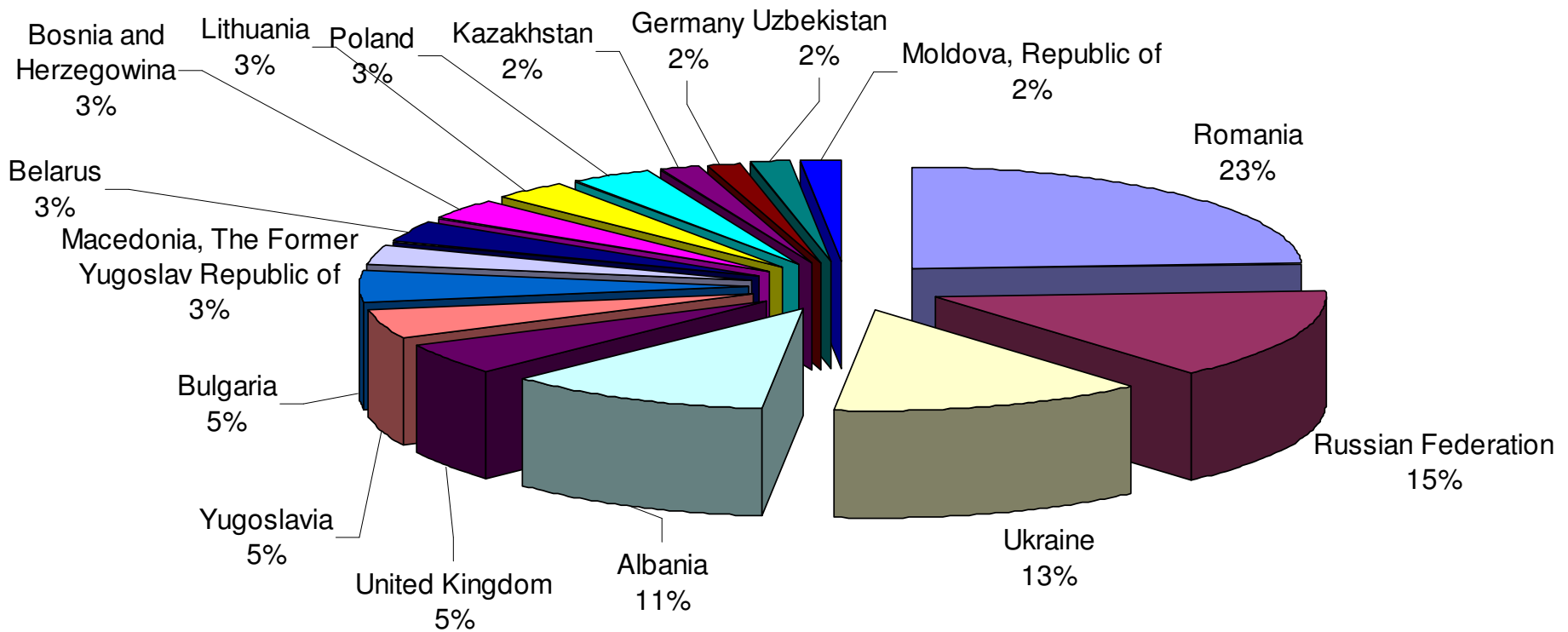
Members from European countries



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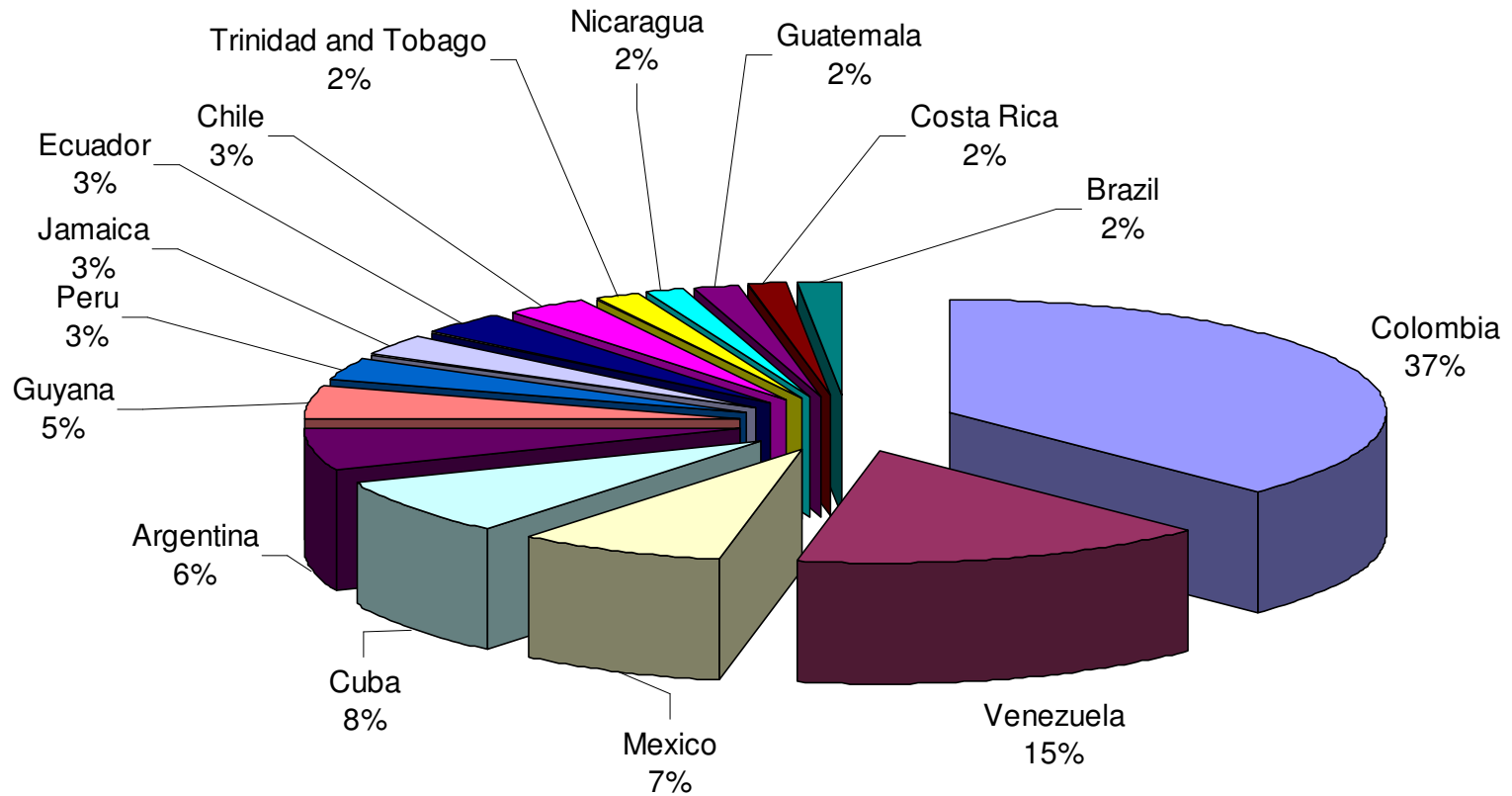
Members from Latin American and the Caribbean countries



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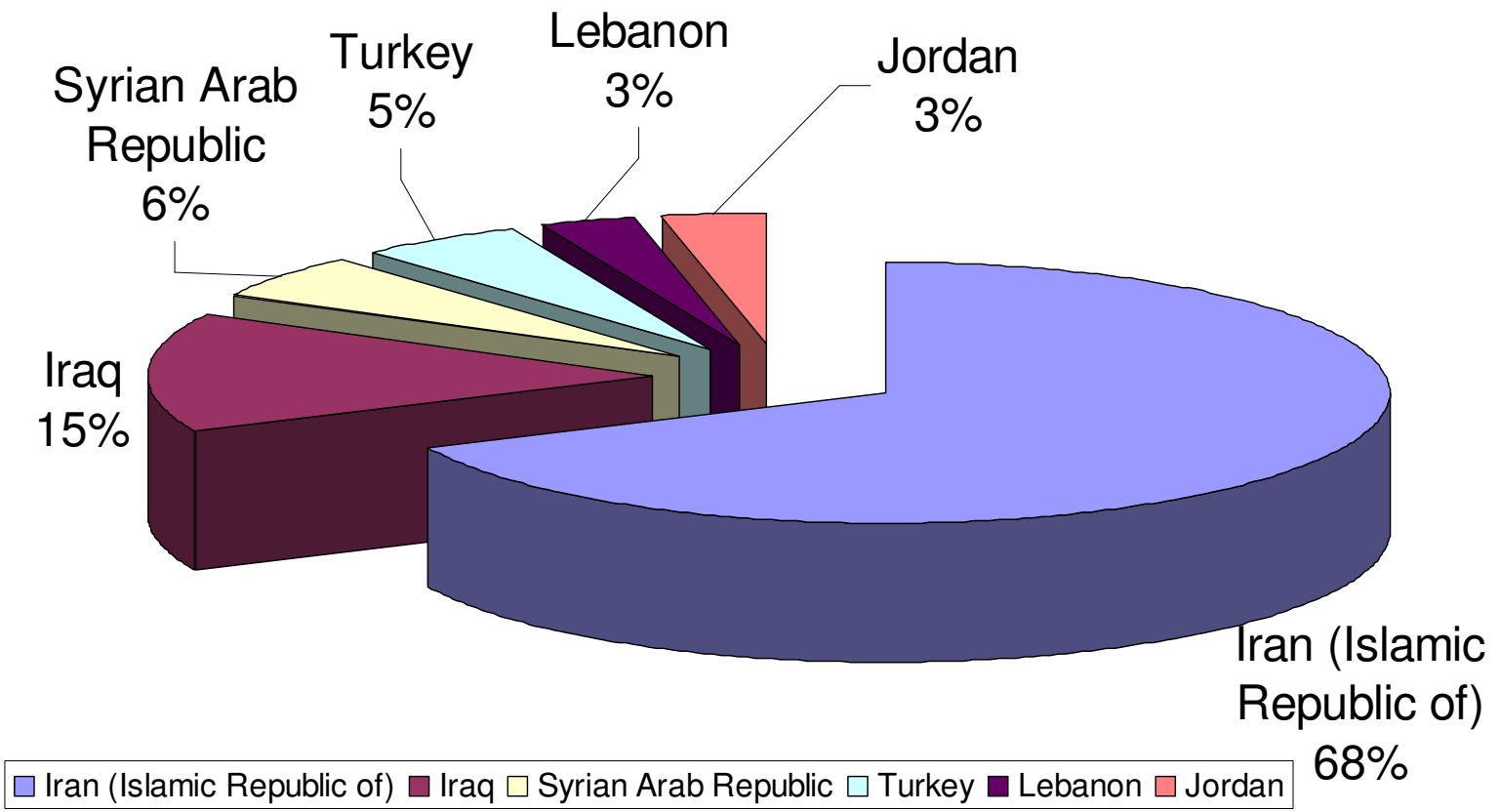
Members from Middle Eastern countries



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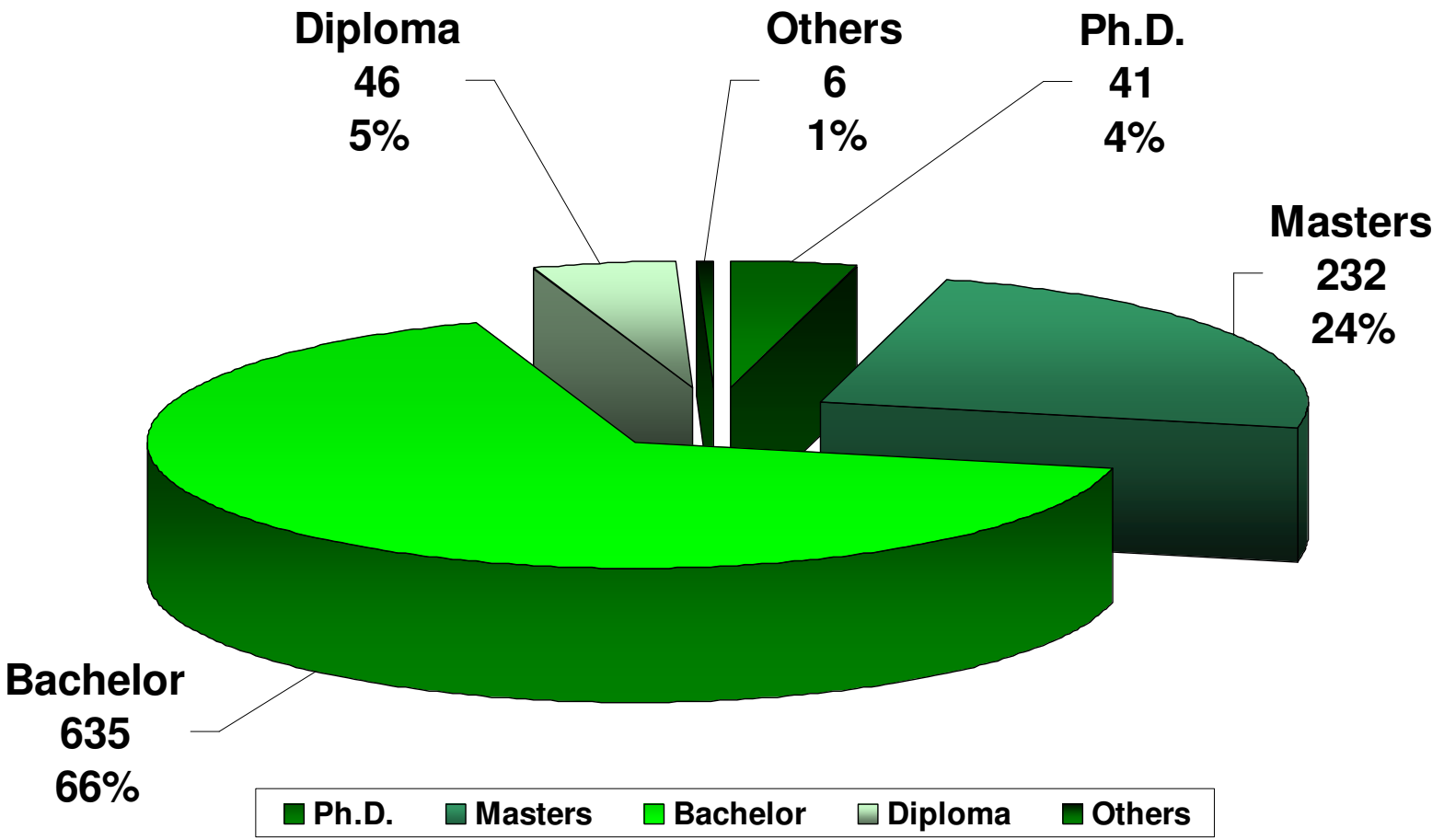
RANGE OF QUALIFICATIONS



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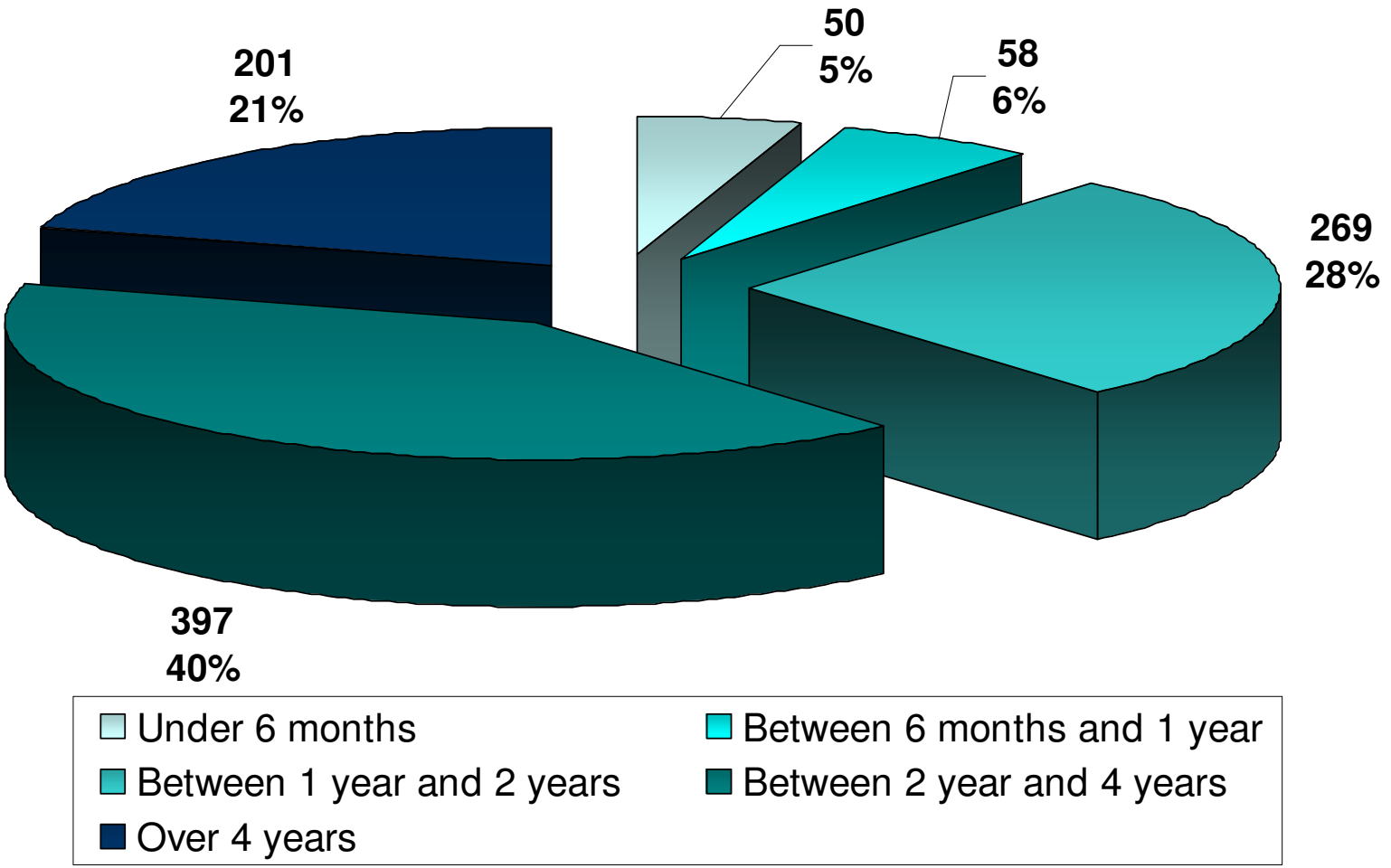
LENGTH OF STAY IN CANADA



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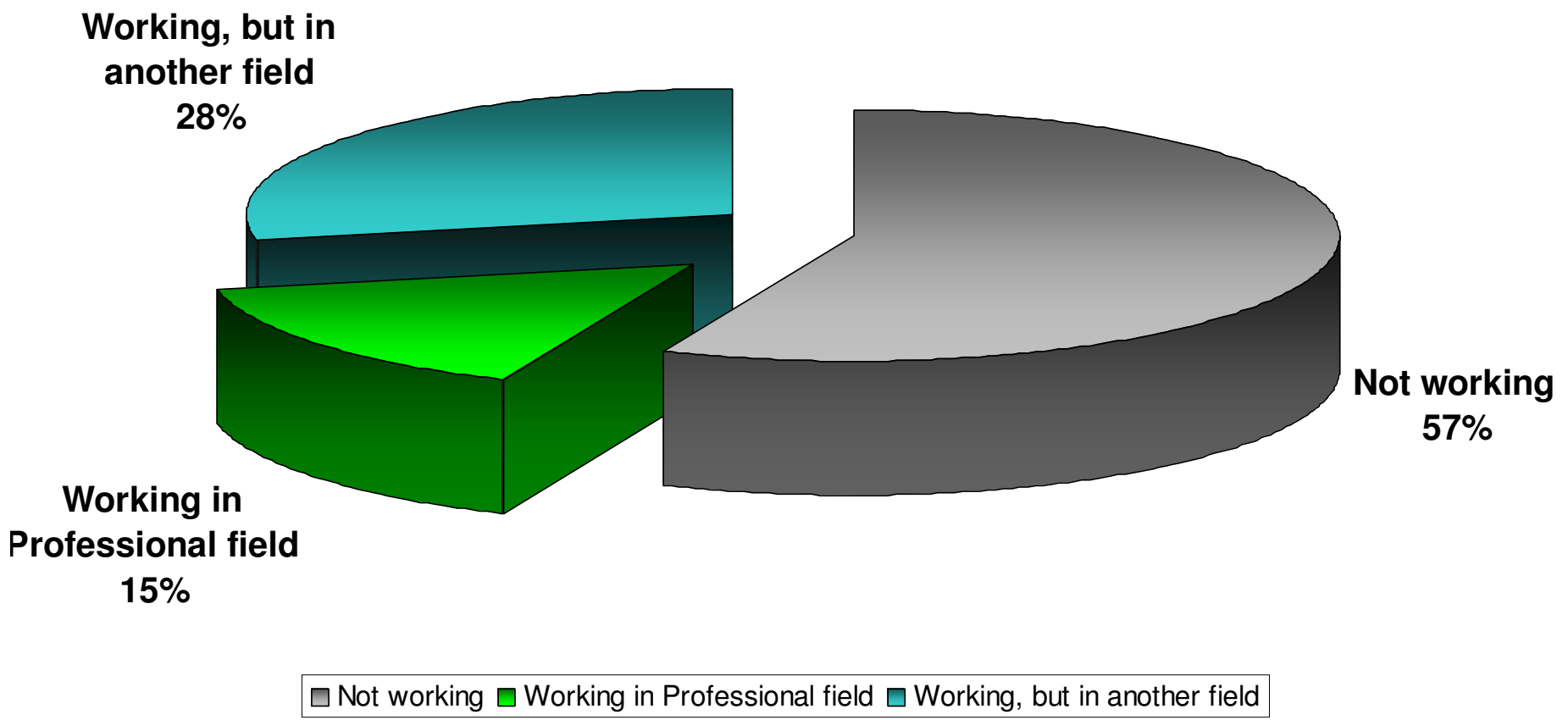
EMPLOYMENT STATUS



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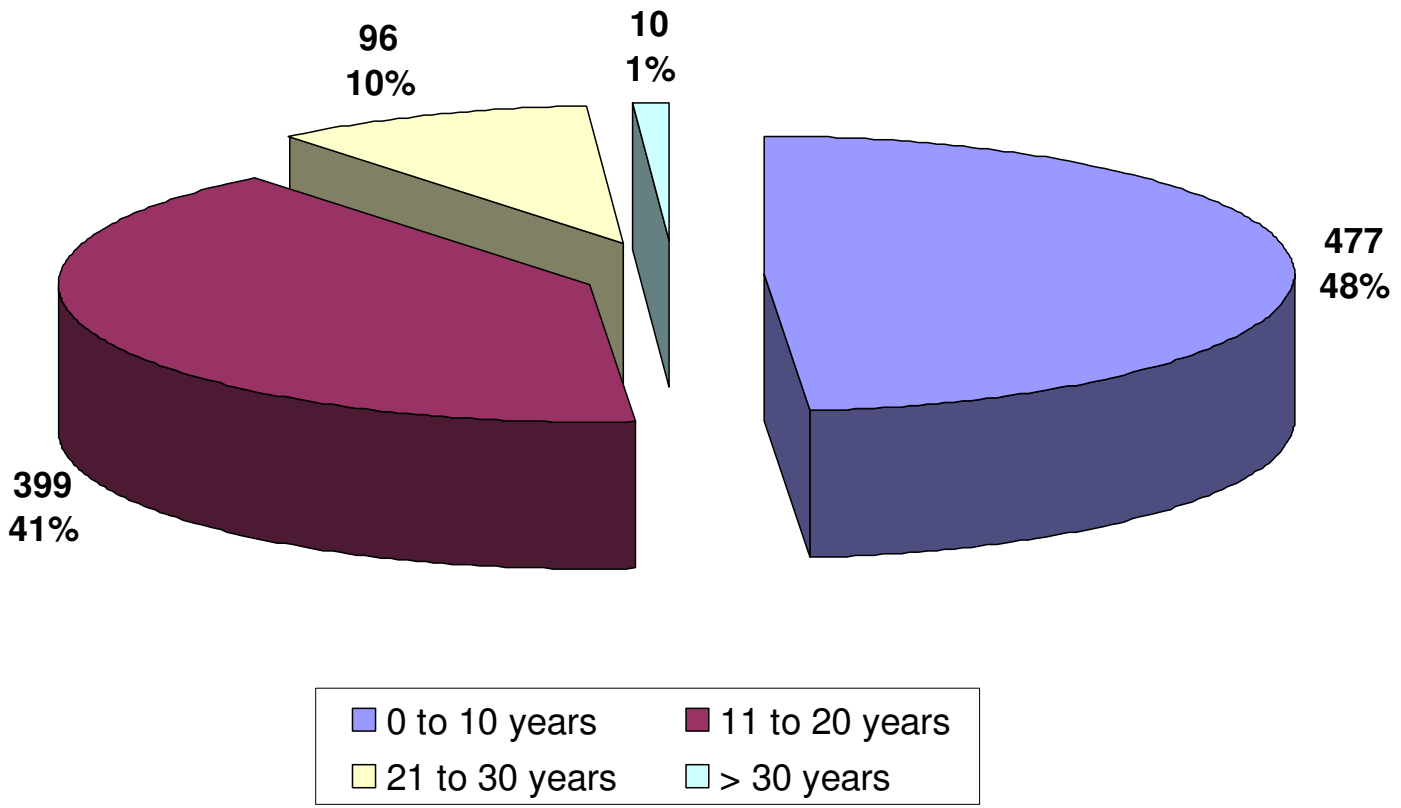
YEARS OF ENGINEERING EXPERIENCE



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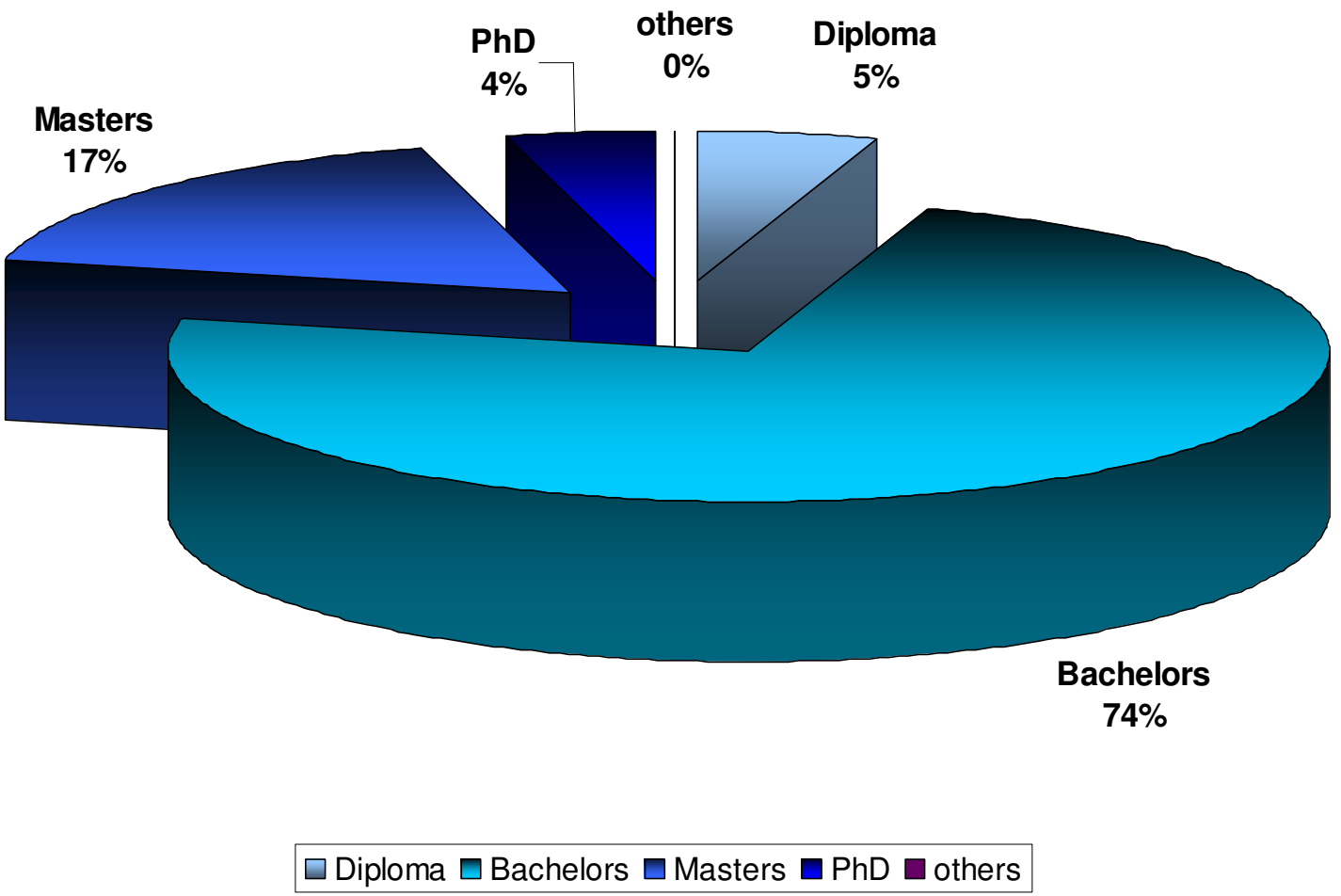
EMPLOYED MEMBERS - QUALIFICATIONS



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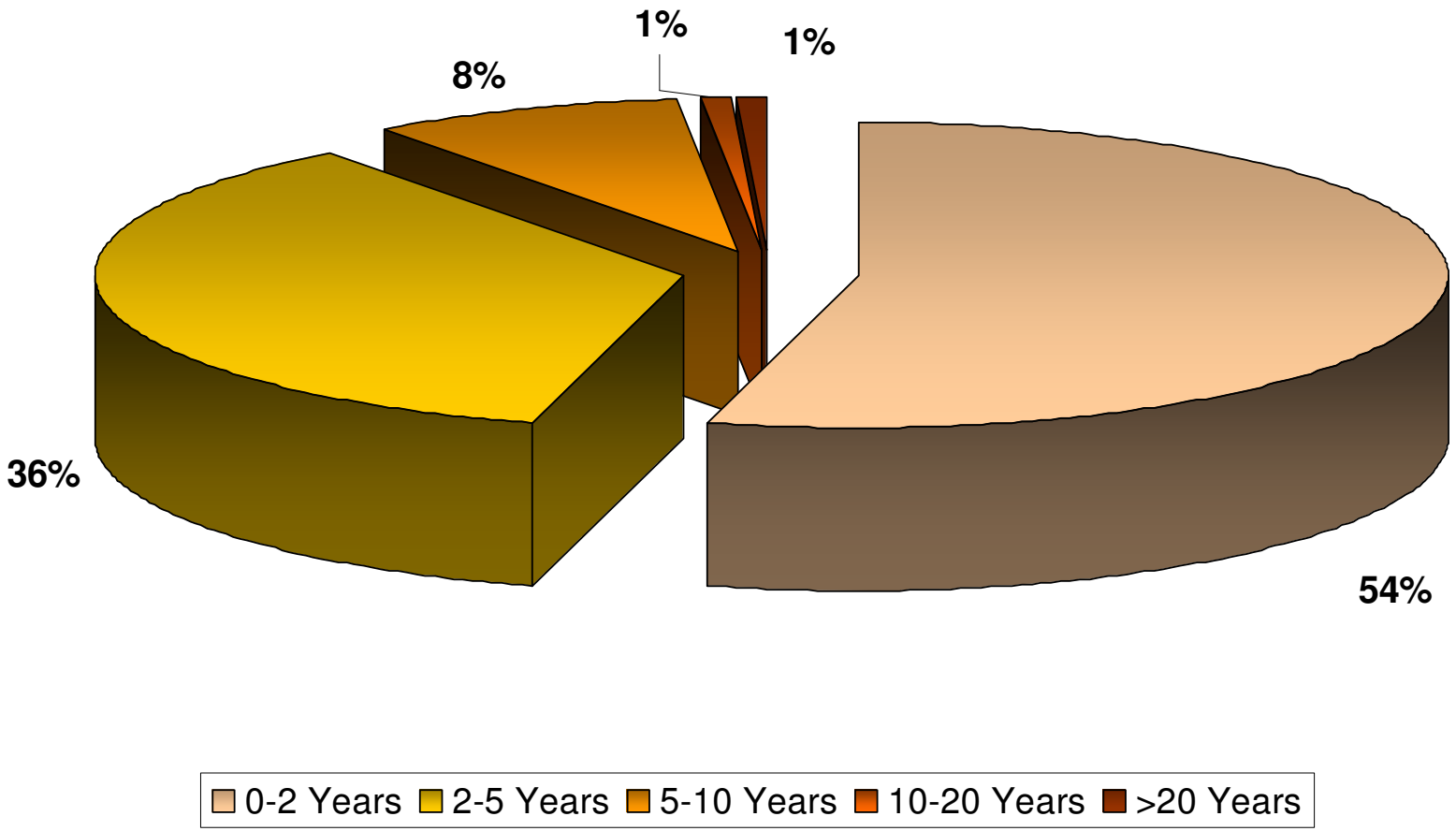
EMPLOYED MEMBERS -LENGTH OF STAY



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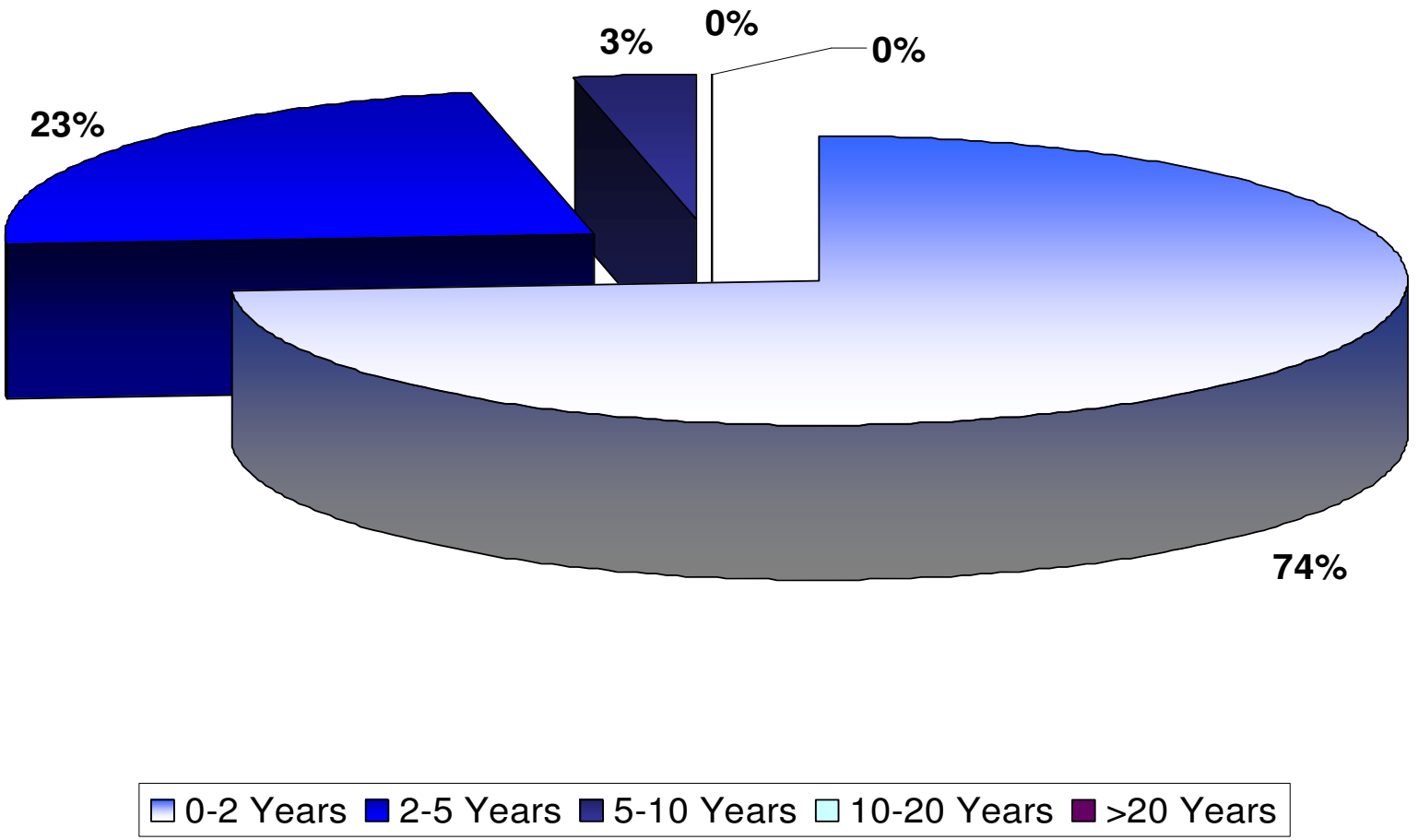
EMPLOYED MEMBERS - YEARS OF ENGINEERING EXPERIENCE



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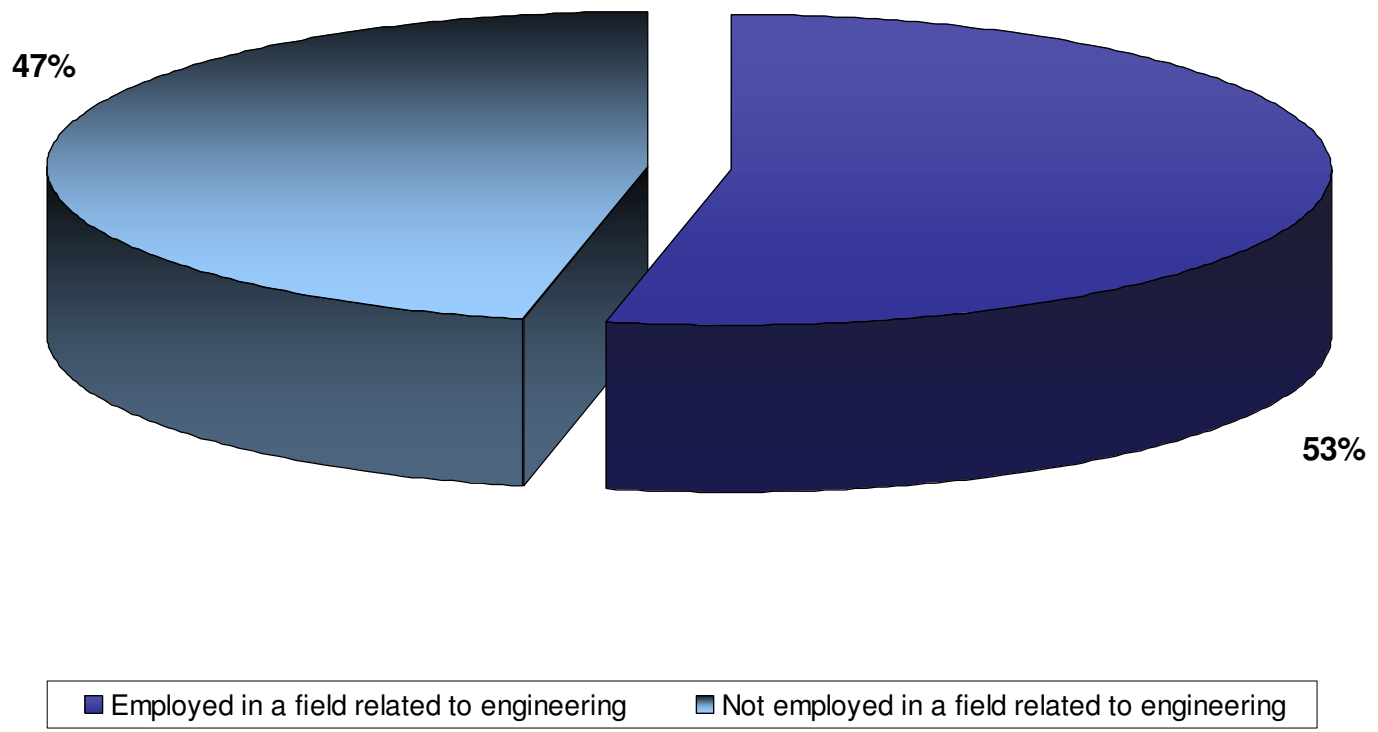
EMPLOYED MEMBERS TYPE OF EMPLOYMENT



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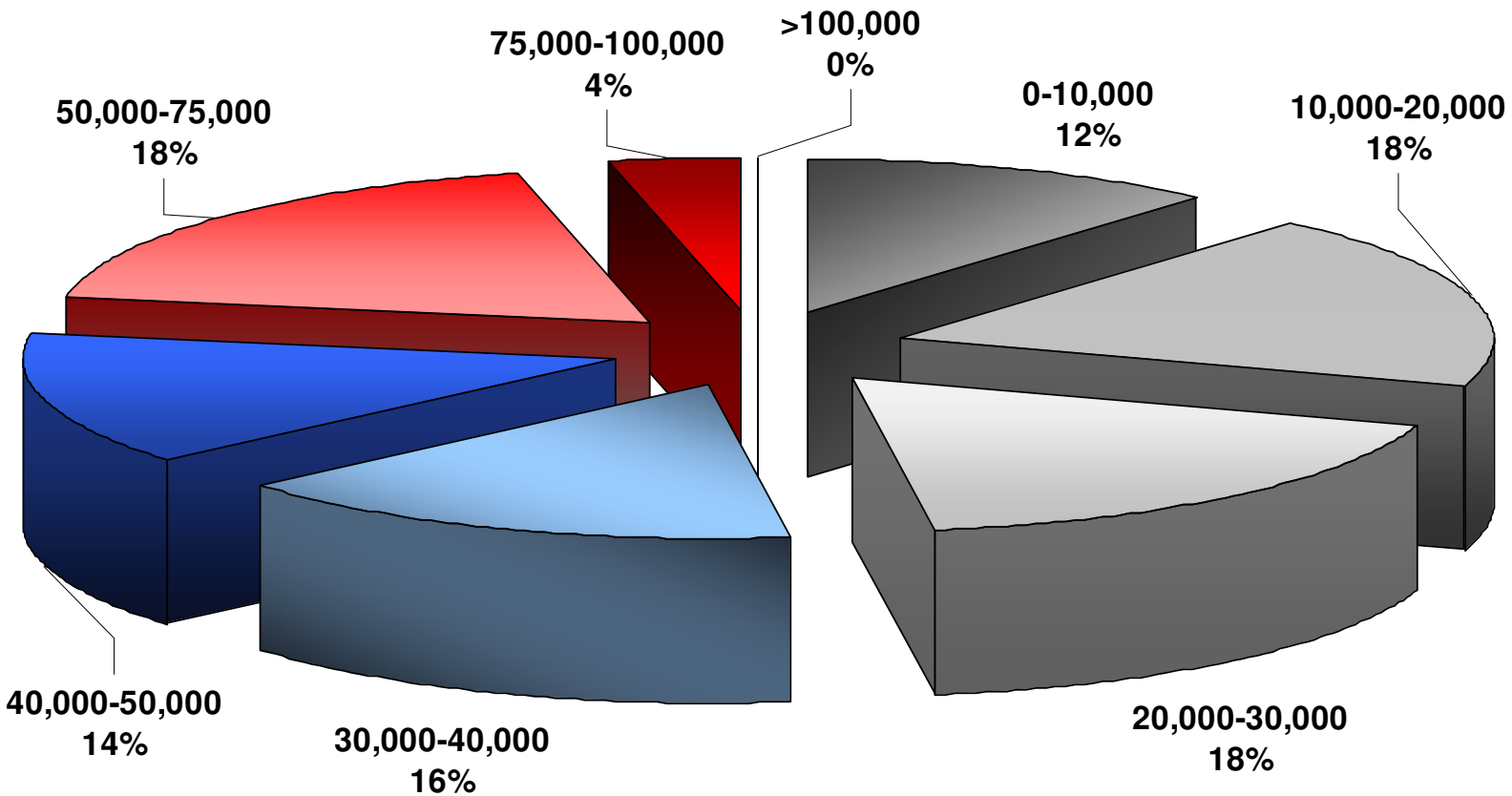
EMPLOYED MEMBERS – INCOME DATA



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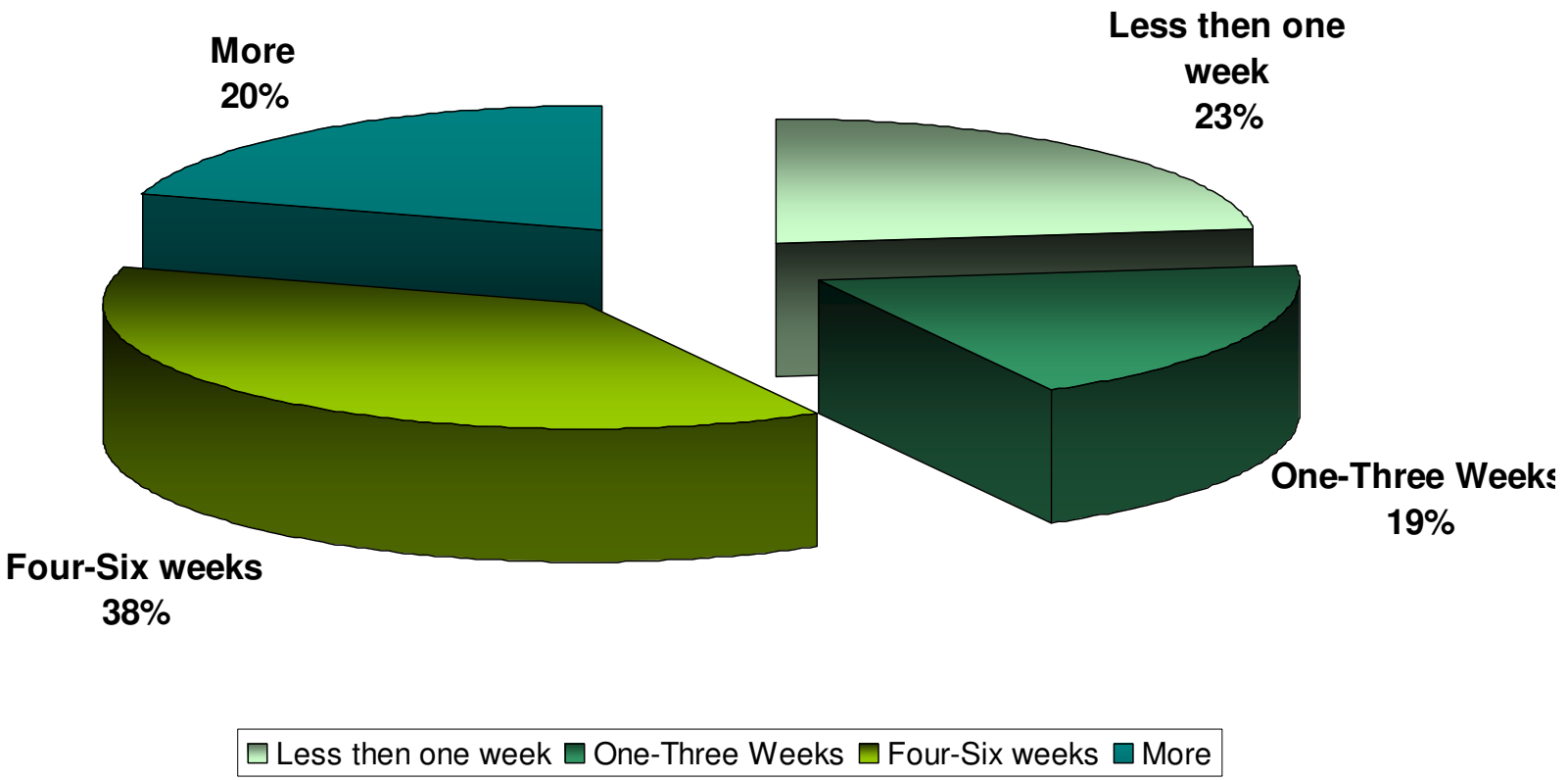
Employment Support Survey-
Length of program



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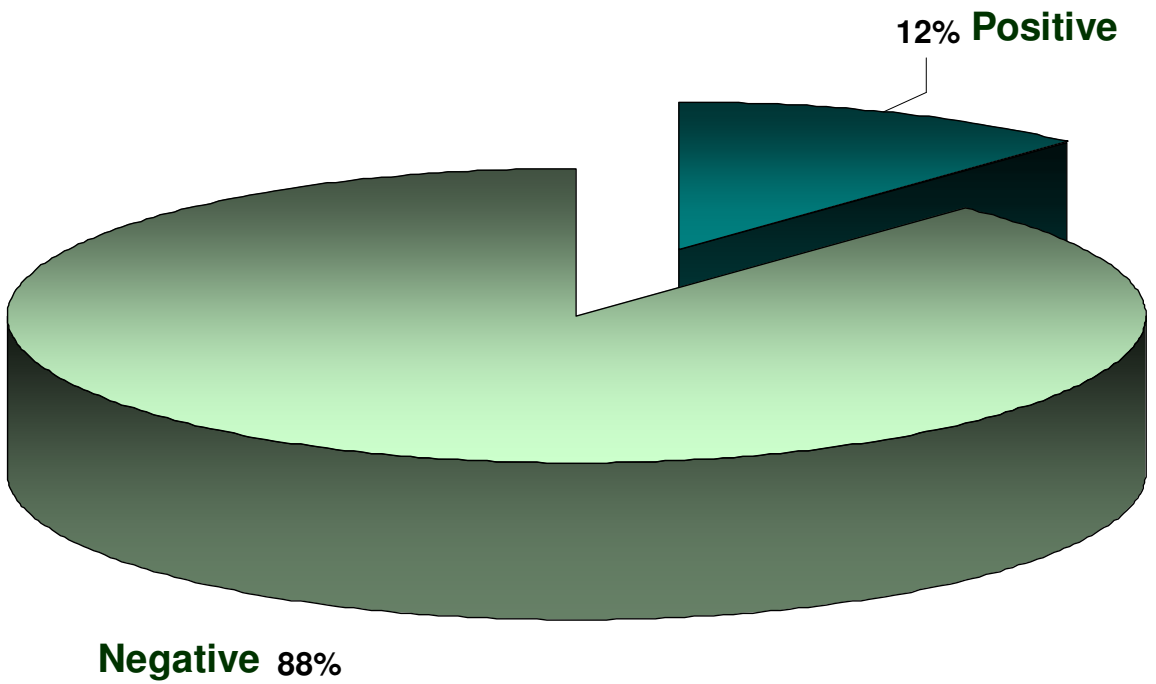
Employment Support Survey-
Outcome



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