Defining Leadership and its Challenges while Transitioning to DevOps

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Krikor Maroukian gained a BSc. (Hons) degree in Computer Science and an MSc. in Applied Informatics in 2005 and 2006 respectively. Currently, he works as a Sr Modern Service Management consultant at Microsoft Greece. He is also the International Representative of the IT Service Management Forum (itSMF Hellas) and member of the Board of British Computer Society (BCS), The Chartered Institute for IT, Hellenic Section. Krikor is a PhD Cand. at Henley Business School, University of Reading, UK. Krikor's interest lie in the areas of service management, agile software development, lean product development, DevOps adoption.

Stephen R. Gulliver received a BEng. (Hons) degree in Microelectronics, an MSc. degree (Distributed Information Systems) and a PhD in 1999, 2001, and 2004 respectively. Stephen worked within the Human Factors Integration Defence Technology Centre (HFI DTC), before getting a job as a lecturer at Brunel University (2005-2008). Dr Gulliver joined Henley Business School (University of Reading) in 2008 as a lecturer and in 2014 was promoted to the role of Associate Professor. Since 2005 Dr Gulliver's teaching and research (in the UK and abroad) has linked to the area of pervasive Informatics, and he has interests including: multimedia and information assimilation, e-learning and education systems, usability and human factors, technology acceptance, persuasion systems, health systems, and systems conflict and failure.

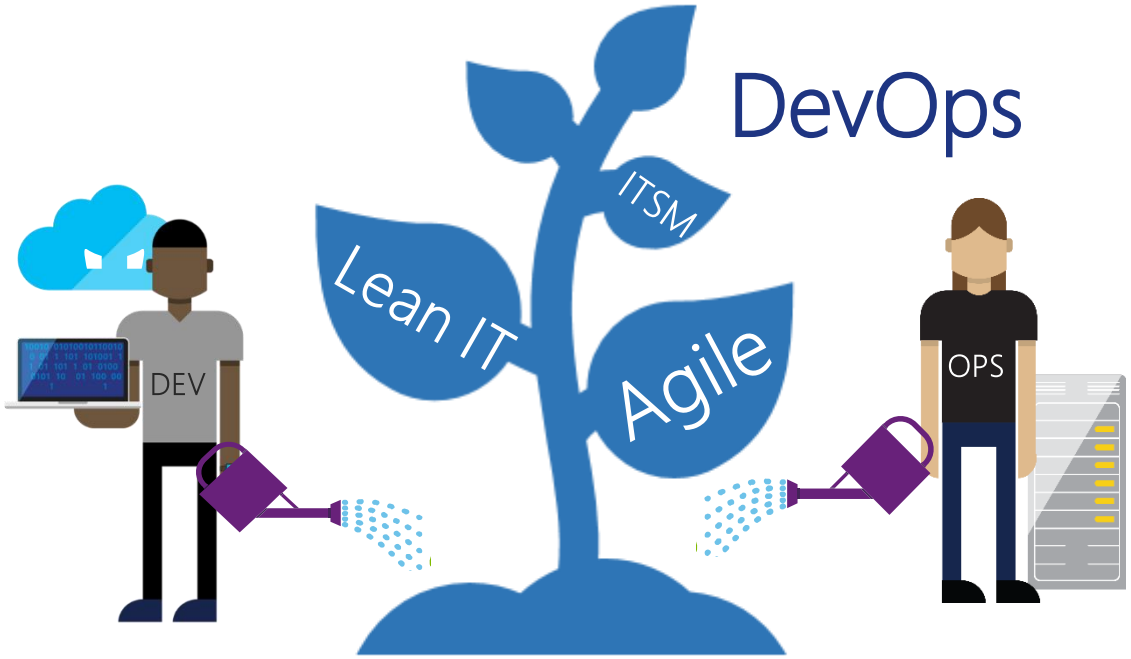
Agenda

- Motivation & Background
- Research Questions
- Results Analysis and Evaluation
  - Interviews
  - Survey
- Future Research

Motivation and Background

Working in a “silo” mindset

Defining DevOps is a Three-way Construct



1	People
2	Practice
3	Products

Academic Publication	Definition of DevOps	Focus on Definition
Bass et al. 2015	DevOps is a set of practices intended to reduce the time between committing a change to a system and the change being placed into normal production while ensuring high quality	Goal-oriented (fast delivery of quality software)
Dyck et al. 2015	DevOps is an organisational approach that stresses empathy and cross-functional collaboration within and between teams – especially development and IT operations – in software development organisations, in order to operate resilient systems and accelerate the delivery of changes	Means-oriented (empathy, cross-functional collaboration); and goal-oriented (operate resilient systems, accelerate change delivery)
Penners & Dyck 2015	DevOps is a mindset, encouraging cross-functional collaboration between teams – especially development and IT operations – within a software development organisation, in order to operate resilient systems and accelerate the delivery of changes	Means-oriented (attitude, cross-functional collaboration)
Smeds et al. 2015	A set of engineering process capabilities supported by certain cultural and technological enablers	Means-oriented (engineering capabilities)
De Franca et al. 2016	DevOps is a neologism, representing a movement of ICT professionals addressing a different attitude regarding software delivery through the collaboration between software systems development and operations functions, based on a set of principles and practices, such as culture, automation, measurement and sharing'	Means-oriented (attitude, cross-functional collaboration)
Jabbari et al. 2016	DevOps is a development methodology aimed at bridging the gap between Development and Operations, emphasising communication and collaboration, continuous integration, quality assurance and delivery with automated deployment, utilising a set of development practices	Means-oriented (cross-functional collaboration, automated deployment)
Lwakatare et al. 2016	DevOps is a mindset substantiated with a set of practices to encourage cross-functional collaboration between teams, especially development and IT operations, within a software development organization, in order to operate resilient systems and accelerate delivery of change.	Means-oriented (cross-functional collaboration, resilient systems, accelerated deployment)


Research Questions

Research Questions

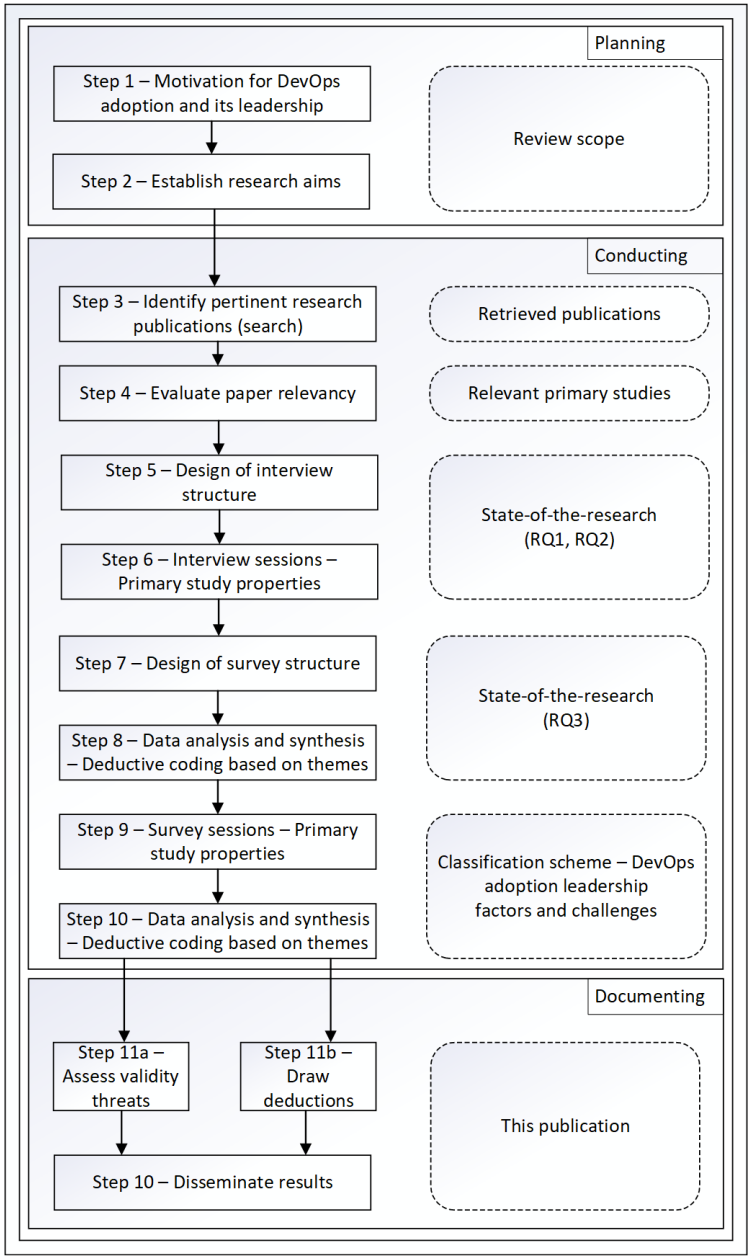
RQ1) Which leadership characteristics required to enable DevOps practice and principle adoption?

RQ2) What are the DevOps adoption inhibitors (resistance factors)?

RQ3) How should DevOps leadership be measured?

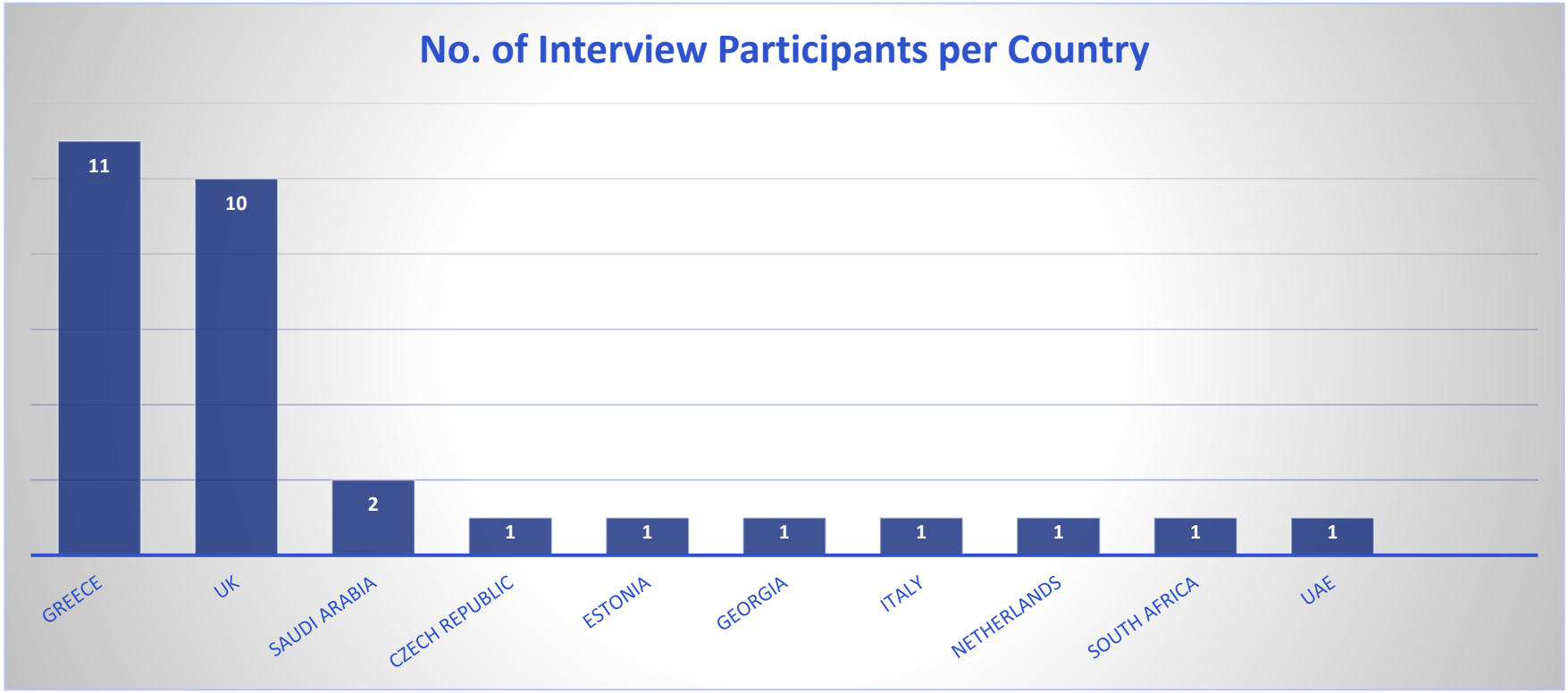
Research Design

Research Study Design



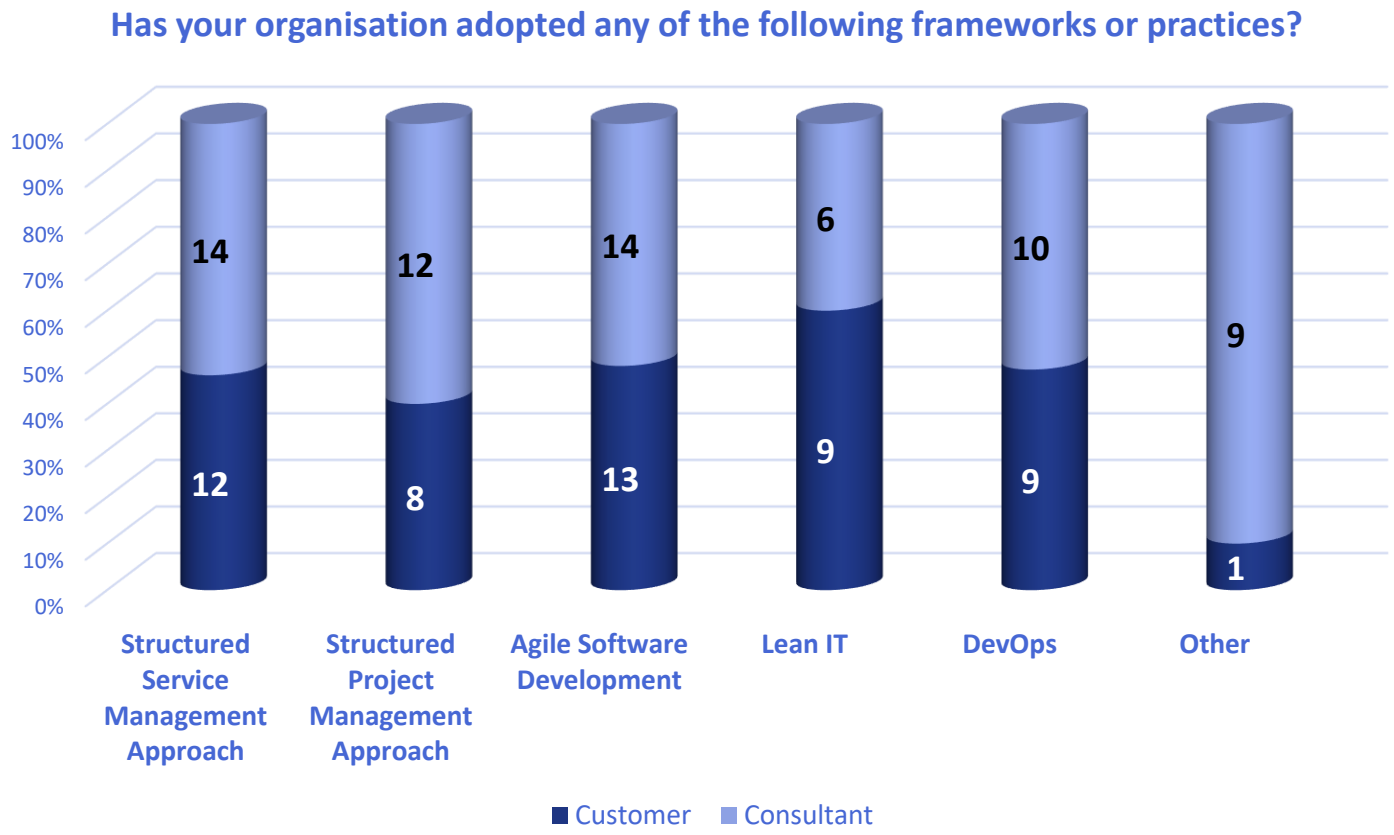
Interview Evaluation

Interview Series (Sep. 2018 - Jan 2019)

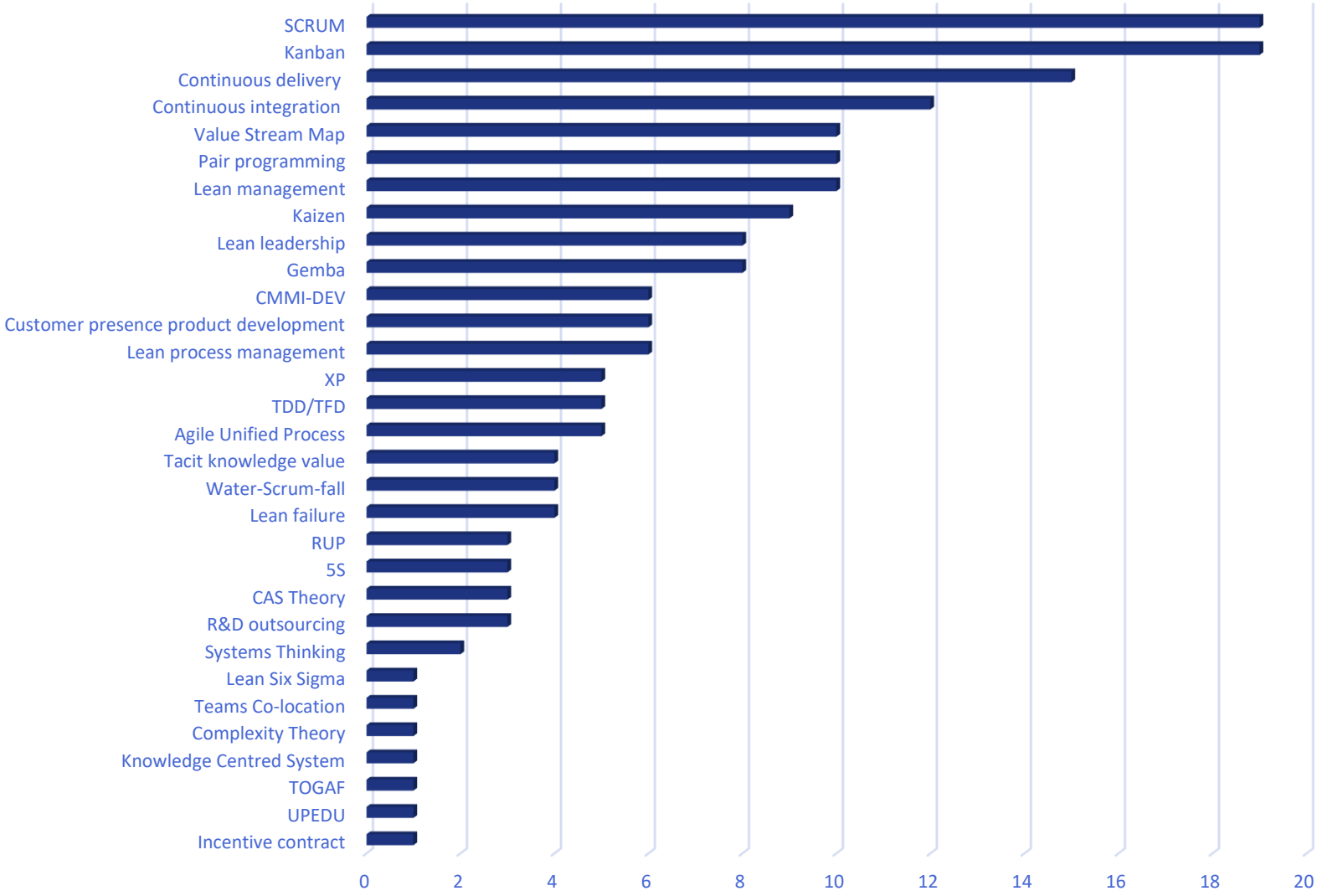


Interview Series (Sep. 2018 - Jan 2019)

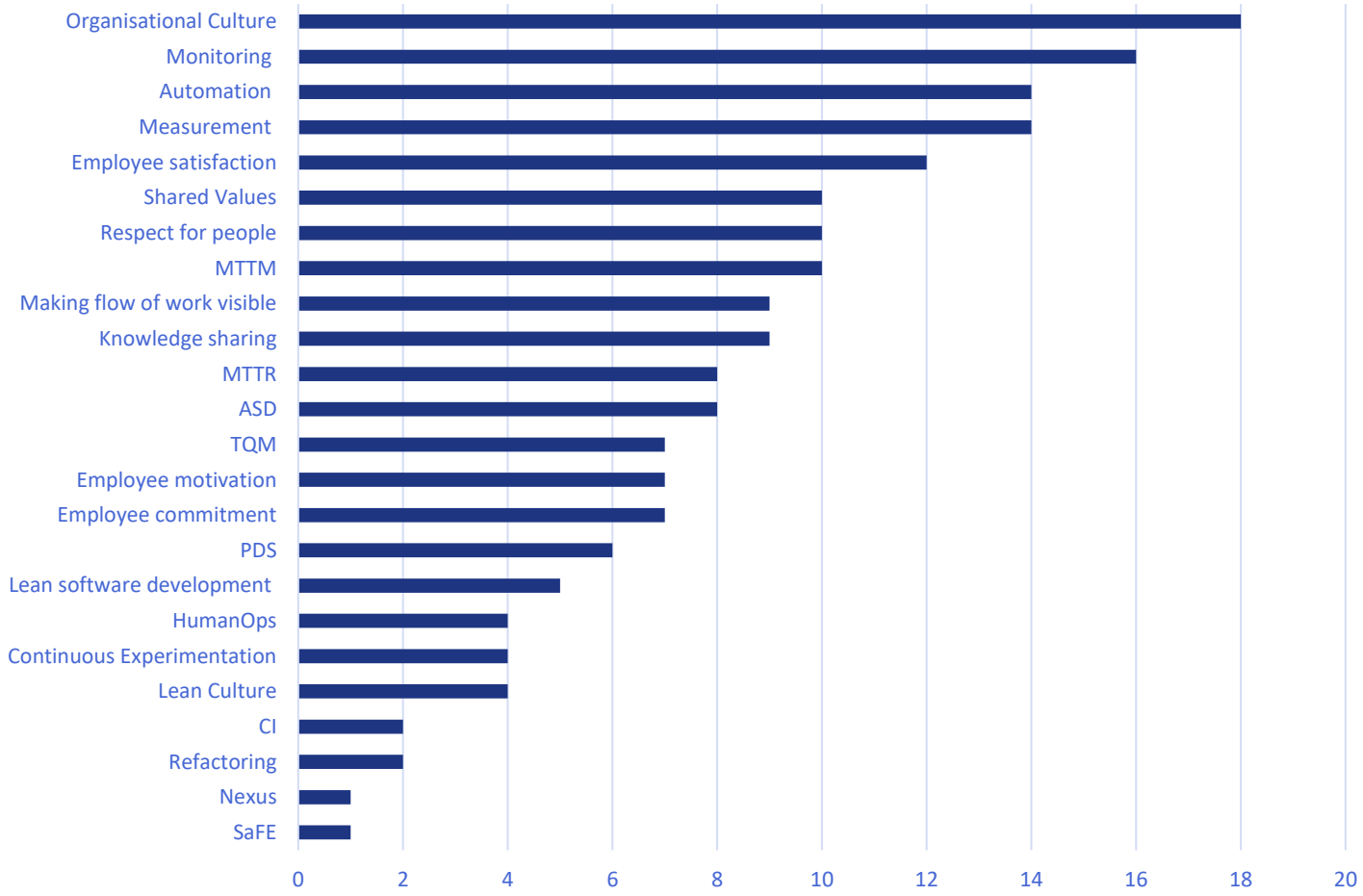
- Interviewee working industry included Consulting Services (14), Aviation (3), Government (3), Lottery (2), Insurance (2), Finance (2), Manufacturing (1), Logistics (1), ISV (1), Automotive (1)



Structured, agile and lean practices in order of preference (30 interviews)



Structured, agile and lean principles in order of preference (30 interviews)



Participants Defining DevOps Adoption Leadership and its Challenges

P27 (Georgia, IT Operations Lead) stated:

Any change can bring resistance and hinder adoption practices. Moving away from any already established approach generates resistance.

P24 (Greece, CIO) adds that:

Resistance happens because all the teams are getting out of their comfort zone. We are talking about different methodology, different structure, different KPIs, different roles, different rewarding scheme, different working location since the team is now collocated - everything is different.

P7 (UAE, Senior Digital Transformation Technologist) mentioned that:

Blame 'game' exists between IT teams which breads increased blameful culture.

P18 (UK, Managing Director) argued that:

Rather than adopting every new framework, methodology, set of practices, organizations should look into identifying the current bottlenecks and improvement areas.

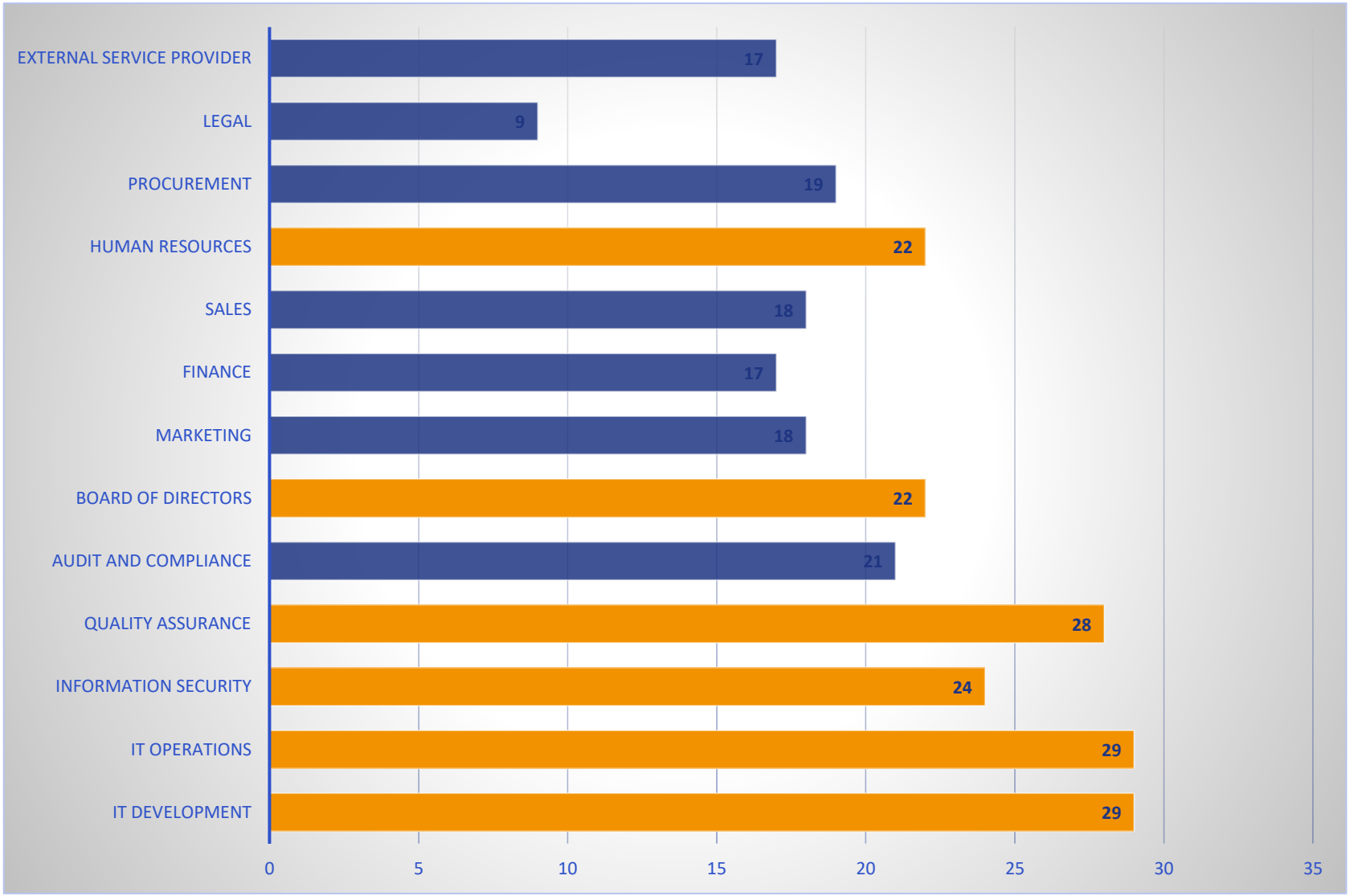
P19 (Greece, IT Operations Manager) stated that:

Leadership is the most important thing to adoption barrier breakdown.

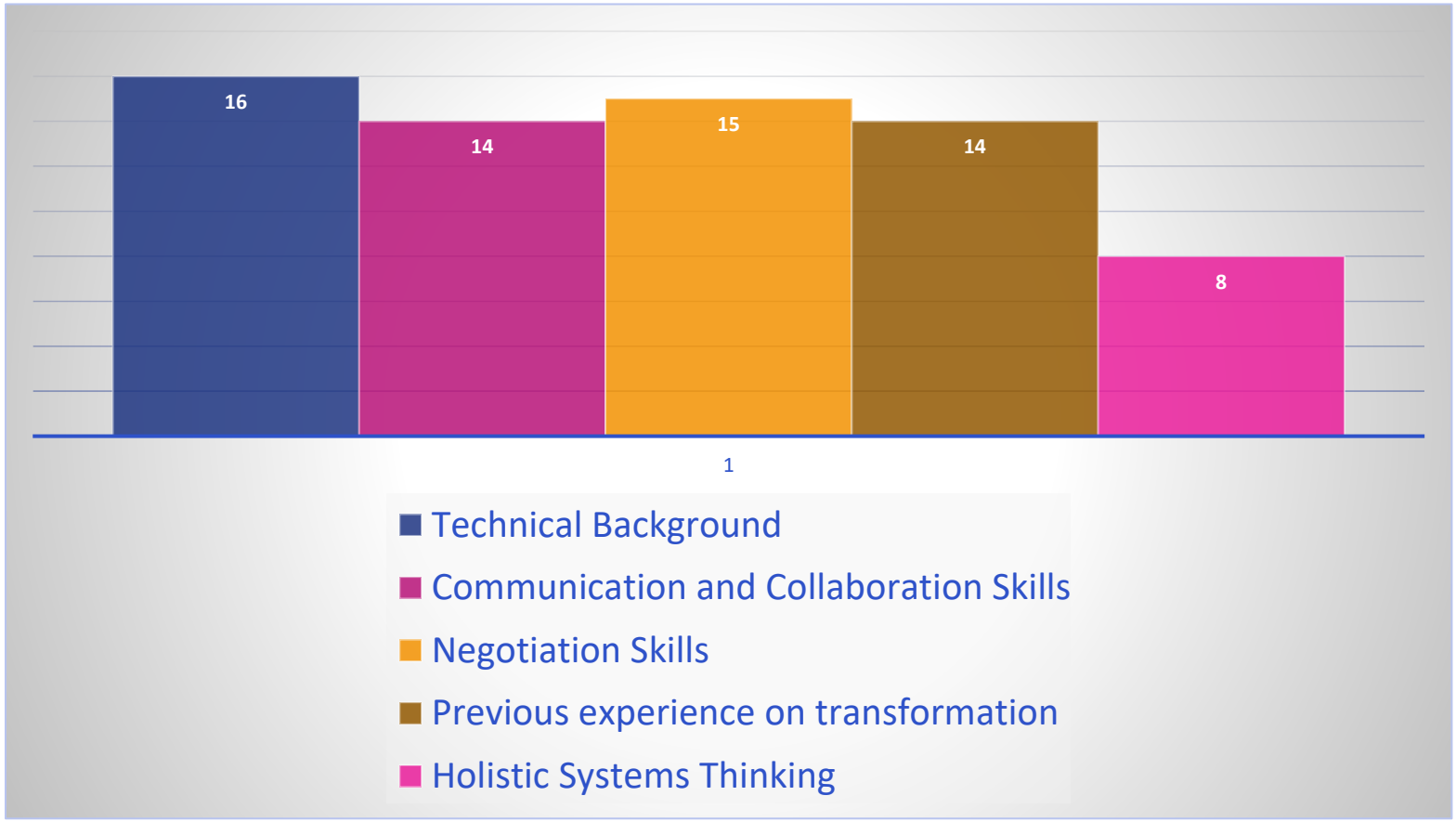
P23 (Estonia, CDO) added that:

A cross-functional leadership role with end-to-end ownership of DevOps adoption is imperative.

Organisational teams as part of DevOps adoption



DevOps Adoption Leadership
Top 5 identified factors (30 interviews)

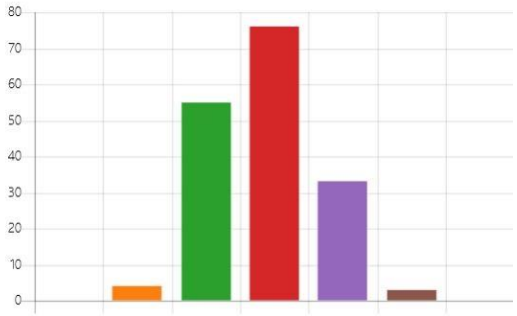


Survey Evaluation

Online Survey (Aug 2019 – Dec 2019)

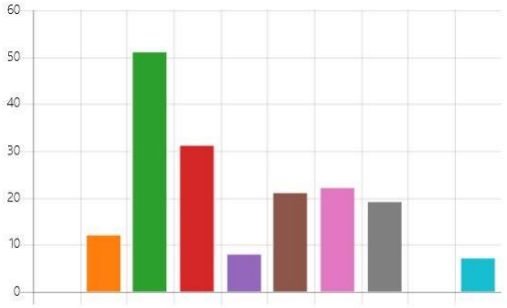
Please state your age (years) to help us improve segmentation of obtained survey outcomes.

Less than 21	0
21-30	4
31-40	55
41-50	76
51-60	33
61-70	3
71+	0



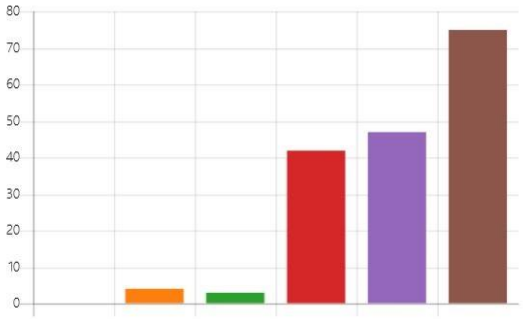
Please state your role area within the organization you are currently employed? Please select only one option.

Audit and Compliance	0
Business Development	12
Consultant	51
C-Level (CIO, CTO, CDO, etc.)	31
Information Security	8
Operations	21
PMO	22
Product/Software Development	19
Quality Assurance	0
Other	7



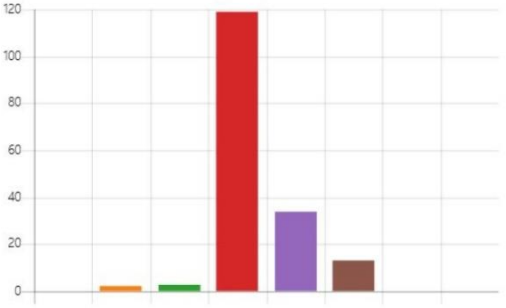
How many years of professional experience do you have?

less than 2	0
2-5	4
6-10	3
11-15	42
16-20	47
21+	75

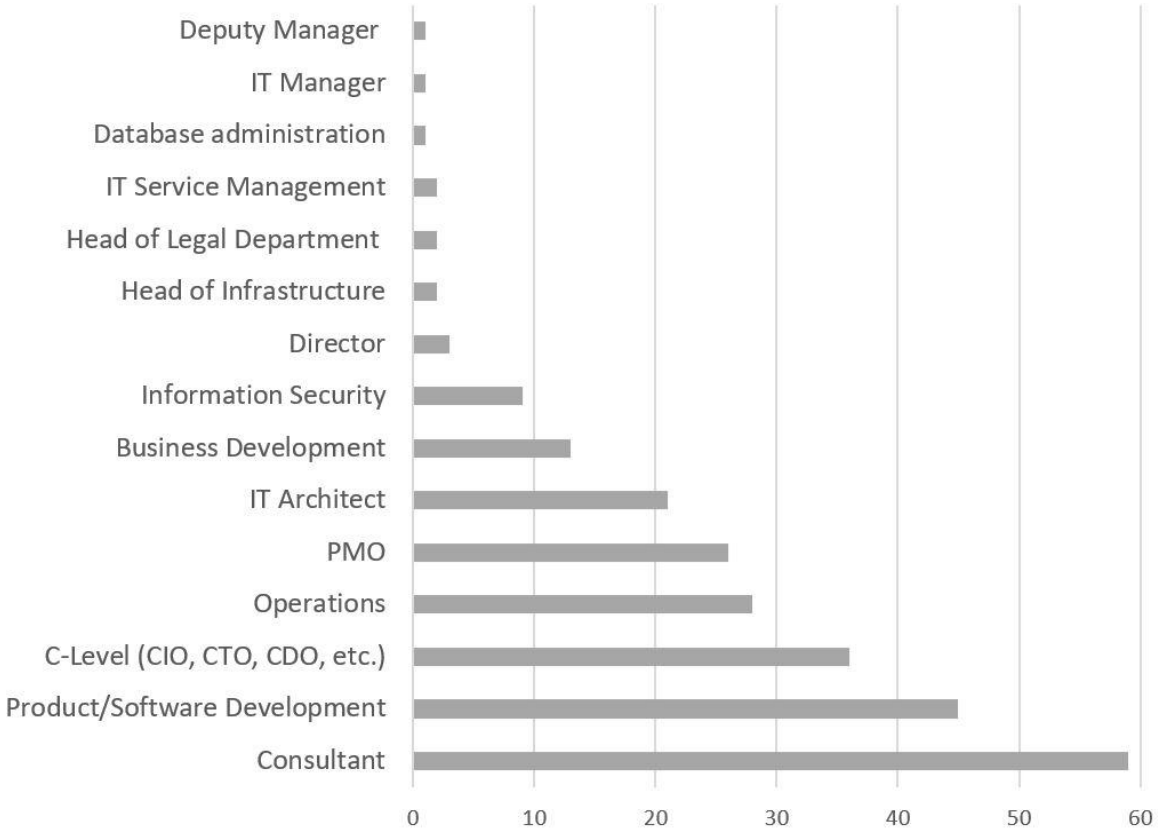


Which region are you based in? Please select only one option.

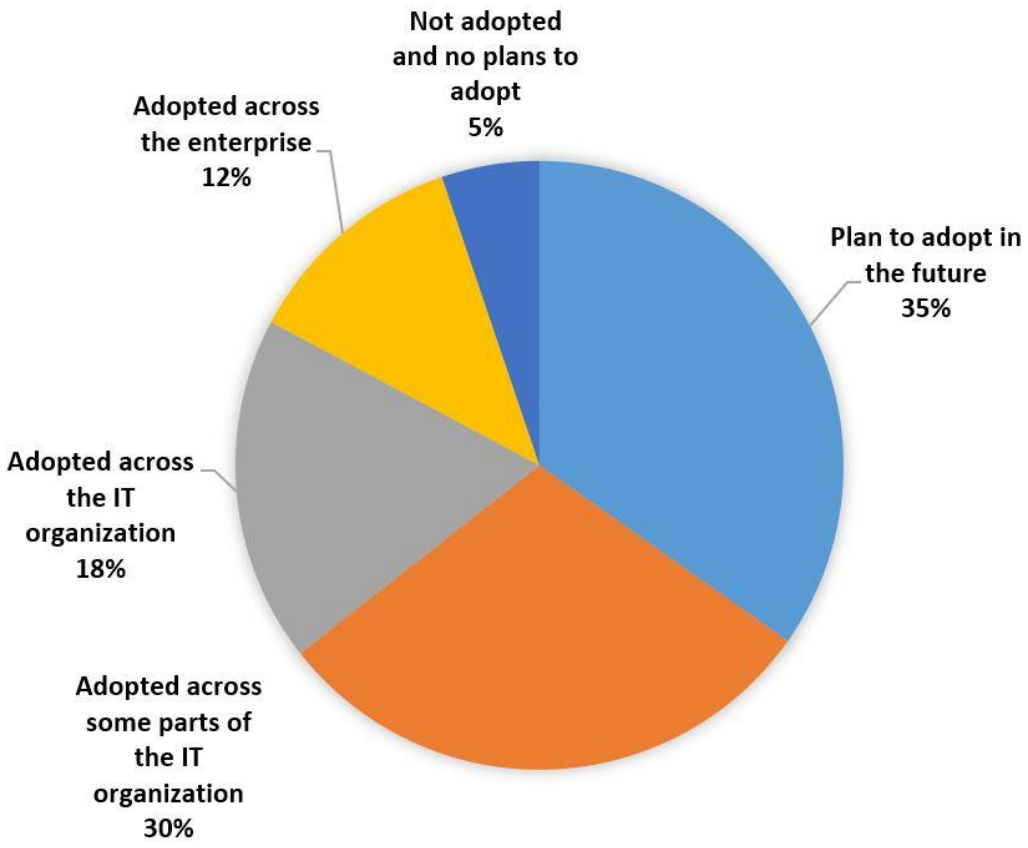
Africa	0
Asia	2
Australia and New Zealand	3
Europe	119
Middle East	34
North America	13
Russia	0
South America	0



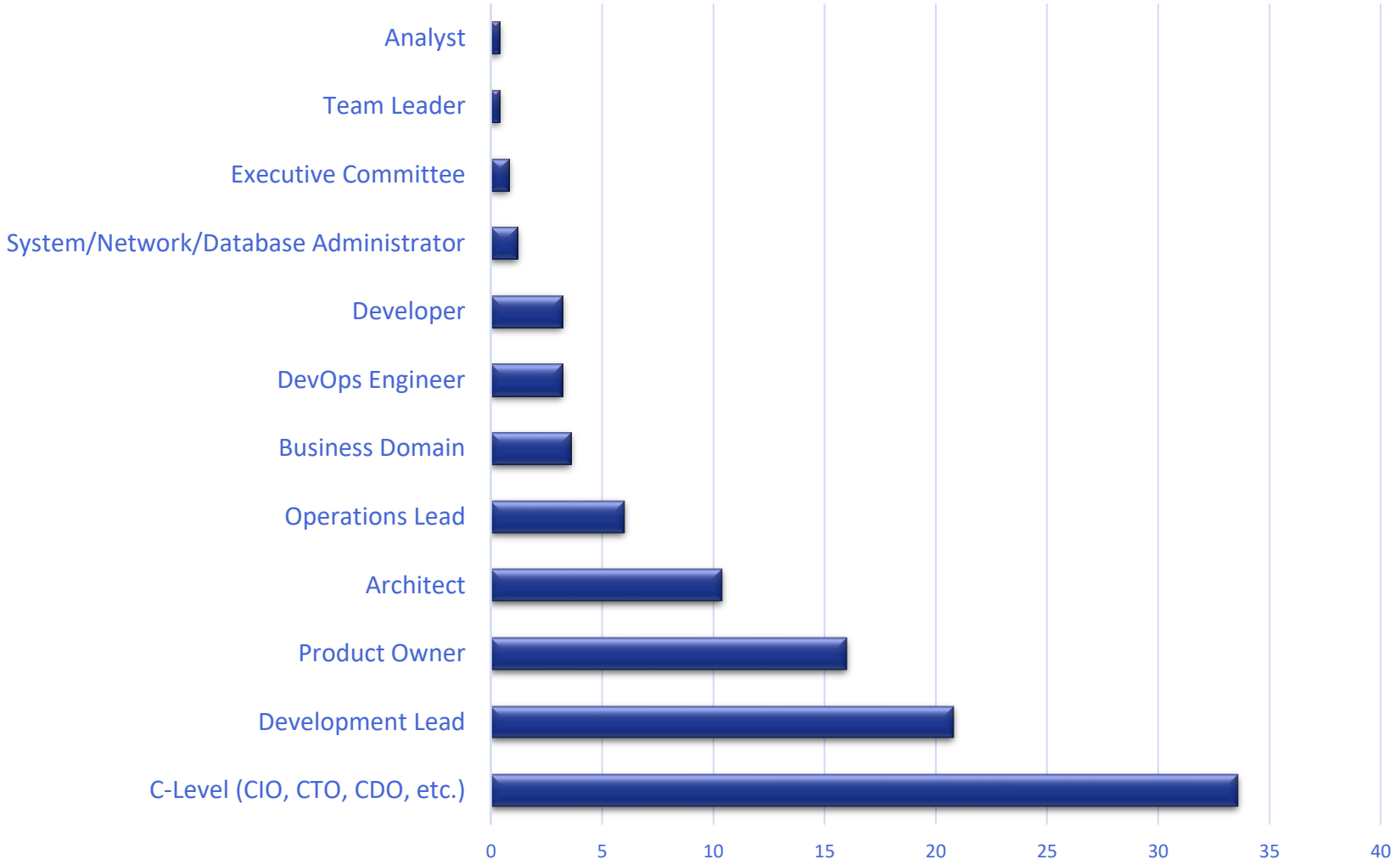
Survey Participant Job Role



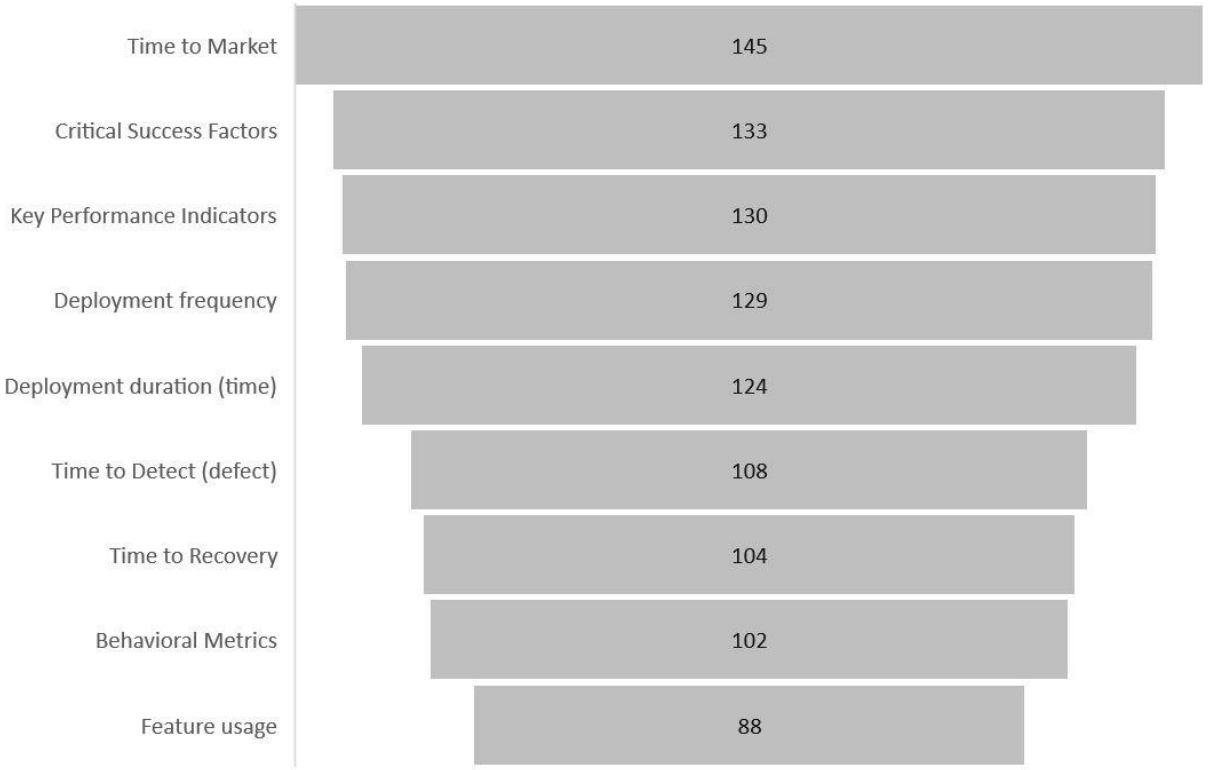
Participant Organisation on DevOps Adoption Planning



Role Responsible for Decision Making Process in DevOps Adoption



DevOps adoption metrics in order of highest preference



Future Research

Future Research

- This study can be further enhanced in the future by focusing on insights on the influence posed on DevOps teams by the adoption leadership role due to varying cognitive load levels.

- In the current pandemic crisis, as long as the “work-from-home” paradigm is enforced, in the global software product development community, it could potentially be affecting the interplay of DevOps adoption leadership characteristics.

Microsoft

Henley Business School
UNIVERSITY OF READING

IARIA

Informatics Research Centre

Thank you for your attention

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