

# HAS MANDATORY CYBERSECURITY TRAINING IMPROVED FIELD IT PRACTICES IN MULTINATIONAL DATACENTRES, AND CAN SCENARIO-BASED TRAINING ENHANCE IT FURTHER?

STUDENT: MARTIN SMYTH

SUPERVISOR: PAUL BARRY



## INTRODUCTION

THIS STUDY FOCUSES ON THE IMPACT OF MANDATORY CYBERSECURITY RELATED TRAINING WITH REGARD FIELD IT STAFF PRACTICES IN DATACENTER'S AND WHETHER SCENARIO-BASED TRAINING CAN ENHANCE PRACTICES FURTHER.

## LITERATURE REVIEW

GHOSH & FRANCA (2021) REPORTED THAT CONVENTIONAL TRAINING METHODS CONSISTING OF LECTURE'S, EXAMINATIONS AND LAB EXPERIMENTS ARE INSUFFICIENT IN TERMS OF ADDRESSING THE NEEDS OF EMPLOYERS, AND HAVE LED TO A DETACHMENT BETWEEN TANGIBLE SKILLS WHICH CAN BE USED IN THE REAL-WORLD AND ACADEMIC KNOWLEDGE.

AALTOLA ET AL (2022) ARGUED THAT INTERACTIVE ENGAGEMENT WITH REGARD LEARNING CAN AUGMENT THE DEGREE TO WHICH INDIVIDUALS ABSORB CYBERSECURITY RELATED TRAINING SUCH AS SCENARIOS OR GAMES WHICH INVOLVE THE INDIVIDUAL IN APPLYING THEIR KNOWLEDGE IN A PRACTICAL SENSE.

VAN STEEN & DEELEMAN (2021) DISCUSS THE EFFECTIVENESS OF GAMIFICATION IN IMPROVING KNOWLEDGE RETENTION AND ATTITUDES WITH REGARD CYBERSECURITY TRAINING BY DEMONSTRATING IN THEIR LIMITED STUDY THAT PARTICIPANTS IN THEIR GAMIFIED TRAINING HAD IMPROVED BEHAVIOURS AND ATTITUDES WITH REGARD CYBERSECURITY IN COMPARISON PARTICIPANTS IN NON-GAMIFIED TRAINING FORMATS.

AJEMBA ET AL (2024) NOTE THAT THE LACK OF EMPIRICAL VALIDATION APPEARS TO BE A THEME IN SIMULATION VALUE RESEARCH, AS WHILE THE VOLUME OF ACADEMIC LITERATURE IS INCREASING, MORE QUALITY RESEARCH IS REQUIRED.



## METHODOLOGY

A MIXED METHODOLOGY IS APPLIED IN THIS RESEARCH, UTILIZING QUALITATIVE AND QUANTITATIVE DATA CONSISTING OF INTERVIEWS, QUALITATIVE SURVEY'S AND HISTORICAL TRAINING AND INCIDENT DATA.

SURVEYS AND DATASETS WERE ANALYSED USING JASP V0.96 & EXCEL 365, WHILE ATLAS.TI WAS USED TO ANALYSE THE INTERVIEW DATA.

## RESEARCH QUESTIONS

1. CYBERSECURITY TRAINING THAT INCLUDES INTERACTIVE ELEMENTS AND SCENARIO-BASED LEARNING EQUIPS DATACENTRE FIELD IT STAFF TO MORE EFFECTIVELY IDENTIFY NEW AND EMERGING THREATS AND RESPONSES THAN CONVENTIONAL TRAINING FORMATS.
2. THAT CURRENT CYBERSECURITY TRAINING PROGRAMMES ONLY PARTLY PREPARE DATACENTRE FIELD IT AND THAT ENGAGING ROLE RELEVANT INTERACTIVE CONTENT INCREASES EFFECTIVENESS OF CYBER TRAINING SIGNIFICANTLY.
3. ROLE SPECIFIC CYBERSECURITY TRAININGS AUGMENTED WITH RECURRENT ASSESSMENTS AND PURPOSEFUL INCENTIVES FOR DATACENTRE FIELD IT STAFF, WILL YIELD BETTER ENGAGEMENT, RETENTION AND IMPROVED COMPLIANCE WITH POLICY THAN GENERIC UNTAILORED PROGRAMMES.

## SYNTHESIS

COLLECTIVELY THE SYNTHESIS OF ALL THE RESEARCH SUPPORTS THE CORE HYPOTHESES OF THE STUDY, THAT MANDATORY LEARNINGS CREATE AWARENESS HOWEVER A MORE ROLE SPECIFIC AND SCENARIO-BASED TRAINING APPROACH REINFORCED THROUGH MANDATORY TRAINING WHILE IDEALLY ENHANCED USING SIMULATION. GAMIFICATION AND INCENTIVES WORK BEST AS COMPLEMENTARY TOOLS AS OPPOSED TO PRIMARY METHODS TO ENGAGE AND REINFORCE.