

# INSETA Research Chair: Digitalisation

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PRESENTATION ON RESEARCH PROGRESS

# Measuring Occupational Change: Firm-level Studies

# Research Proposal

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# Background to the Research

In 2020, the DUT Research Chair conducted a research study:

*“Measuring occupational change in the insurance sector: approaches, methods and processes”.*

There is now a need to measure occupational change in key occupations in insurance firms as a second phase of the research.

# Terminology used in the Research

For the INSETA study, "occupational change" is defined from a human resource management perspective. It is characterised by the following elements:

Job tasks added to an occupation from a similar or new field.

A substantial change in the work content related to an occupation.

The necessity to acquire different competencies to fulfil the job tasks.

A change in the range and depth of job tasks in an occupation.

Occupational change may occur in an occupation in the same company, or by movement to other companies for the same occupation.

# Terminology used in the Research

## Job Shift

A job shift in labour economic terms refers to the mobility of workers. There are two types of job shift. External job shift is the mobility of a worker to a different type of organisation or economic sector. Internal job shift is the mobility of a worker to a different job in the same type of organisation or economic sector. The former is a good indicator of the growth or decline of organisation types or economic sector. The latter indicates an individual's efforts to relocate to workplaces due to personal preferences.

Zhou, X; Tuma, N.B & Moen, P. (1997) Institutional change and job-shift patterns in China, 1949 to 1994. *American Psychological Review*, 62(3), June: 339-365.

# Problem Statement

If occupational change is neither managed nor measured, it is difficult to align the human resources of the company to its business goals.

There is a need to investigate the types of skills needed by employees in specific occupations to assess whether they are prepared for the rapidly changing work environment.

There is also a need to identify key factors driving change in insurance firms and the impact of this on the future of the industry, firms, workers, training providers and the INSETA.

The changing nature and content of work require a regular review of jobs, occupations, skills sets, aptitudes and education qualifications in the insurance sector.

# Benefits of the Research

By conducting this research study, INSETA will be able to:

Identify factors driving occupational change in the sector.

Determine the nature, content and extent of occupational change.

Identify new and emerging jobs and occupations.

Develop training programmes that respond to occupational changes.

Inform training providers and employers of occupational changes.

Develop processes, methods and tools to track occupational change.

Enable evidence-based decision-making by the INSETA Board for project funding.

# Benefits of the Research

By measuring occupational change, employers will be able to:

Identify the needs of employees.

Remove obstacles in the workplace frustrate those needs.

Contribute to organisational effectiveness.



# Outcomes/Purpose of the Study

Key occupations in 3 insurance firms (small, medium and large) will be measured to determine occupational change.

The outcomes of this study are to:

- ☐ Discuss factors that are changing the nature and content of work in insurance firms.
- ☐ Determine the implications of these changes for insurance occupations.
- ☐ Identify occupations that are undergoing rapid changes.
- ☐ Develop occupational analysis methods and tools to design occupational qualifications that are responsive to the demands of the workplace.
- ☐ Assess the application of these occupational analysis methods and tools for changing occupations.
- ☐ Make recommendations to the INSETA on managing the occupational change process for skills development.

# Research Methodology

Two research methods will be used. These methods lend themselves to social distancing.

## **Literature review**

A literature review of the following will be conducted:

Theories, models and perspectives of occupational change.

Factors driving occupational change in the sector.

Occupations that are changing.

Process, research methods and tools used to measure occupational change.

## **Case Study**

Three firms (small, medium and large) will be identified and key occupations will be measured.

# An analysis of current and future skills needs of insurtechs

## Research Proposal

PROF HOOSEN RASOOL

# Background to the Study

- ❑ Financial technology (fintech), known as insurtechs in the industry, is transforming the financial services sector across the globe.
- ❑ SA has a small but fast-growing fintech industry, presenting considerable benefits and risks.
- ❑ Insurtechs are advanced technology insurance firms that have the potential to transform the provision of insurance services and products spurring the development of new business models, applications, and whose products and services are directly applicable in the delivery of financial services.

# Background to the Study

- ❑ An important development to consider is how the insurance sector responds to economic and societal technological innovations, and provides insurance processes and policies that incorporate such changes.
- ❑ For example, the sharing economy has enabled start-ups such as Uber to make ridesharing more convenient and widely available. While taxi drivers are required to have commercial motor liability insurance, Uber drivers may not have the necessary coverage because it is often a side business or a part-time job.
- ❑ Insurance providers are already responding to this particular case, but it raises a broader question about how insurance responds to new risks that do not fit individuals' or businesses' traditional lifestyles and/or economic activity.

# Terminology used in the Study

- ☐ Predictive Analytics
- ☐ Internet of Things (IoT)
- ☐ Connected insurance
- ☐ Automated risk analysis
- ☐ Digital distribution
- ☐ Peer to peer (social) insurance
- ☐ B2B services

# Problem Statement

- ❑ SA does not have a shortage of funding channels. However, many of the challenges are not accessible to insurtechs because they have yet to develop a proven business model, have not yet secured regulatory compliance and have yet to scale up.
- ❑ The low quality of inclusion products in SA creates opportunities for insurtechs to address consumer segments that are not currently served by traditional insurance service providers.

# Outcomes/ Purpose of the Study

- ☐ Provide an analysis of the insurtechs landscape in SA.
- ☐ Identify the key occupations and skills sets required for insurtechs
- ☐ Determine new qualifications and skills programmes that should be developed by the QCTO.
- ☐ Identify current and future occupations and skills needs for insurtechs.
- ☐ Develop learning and career pathways for new entrants into the insurance sector.



# Research Methodology

## Literature review

A literature review of the following will be conducted:

- ✓ Insurtech types
- ✓ Role of insurtechs in addressing the lower end of the market
- ✓ Current and future skills sets

## Case Study

Case study of two insurtechs

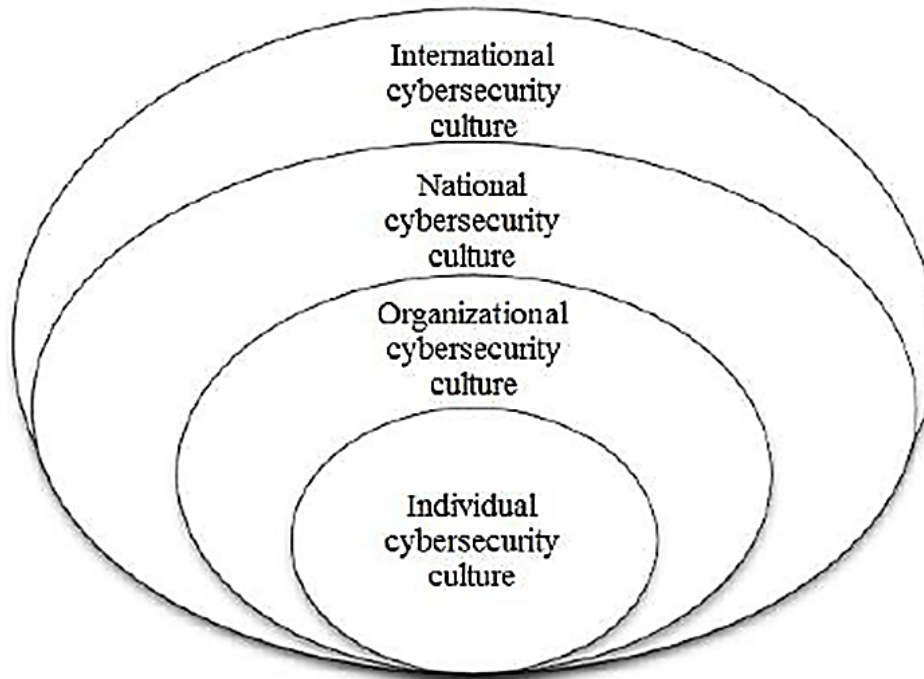
# Cybersecurity Culture at TVET Colleges:

## Literature Review

DR ZORAN MITROVIC

# The idea

***“To effectively deal with Cybersecurity, it is prudent [...] ensuring South Africa has a culture of Cybersecurity.”***  
(SA Government Gazette, 2015).



da Vega (2016)

- Due to the **lack of awareness and knowledge**, the idea was to **build cybersecurity culture** within **TVET colleges** that have a **potential to spread** through the **surrounding communities** where teachers and students live.

# The task at hands

- It is **essential** to generate and maintain the **positive attitude** of TVET **teachers** and **students** towards digital technology and **readiness** and **ability** to **use** it securely (Lange, Hofmann & Di Cara, 2020; Bandara et al., 2014).
- The above **facts** have **motivated** the **need** for creating an **Action plan** for **building cybersecurity culture** in TVET colleges that **have** a **potential** of **influencing** cybersecurity culture in the surrounding **communities**.
- The reviewed literature suggests that **knowledge** and **skills** having **crucial role** in **preventing cyber-attacks**.
- Hence the need for **speeding** up cybersecurity **awareness** and **skill acquisition** by students and teachers in TVET colleges.
- **Youth** will only **be able** to **drive change** if they have the **sense** of the **power** to **make a difference** - this should be **prioritised** in **youth-centred development** strategies in general, (IFAD, 2019).

# Literature review findings

- Schools are the **second uppermost target** for **ransomware** attacks.
- **Students** or **staff** that **circumvent** cybersecurity protections.
- HE cybersecurity **incidents** and **breaches** are caused by **social engineering** attacks (Impact, 2019).
- **Price of educational records** on the black market reaches **R 3,900** (USD 265) (ibid).
- **73%** of organizations are **unprepared** for cyberattacks and **many** of them **remaining** unprepared even **after** an **attack** (Inc, 2018).
- **85%** of **universities** agree that **more funding** must be given to **cybersecurity** (Purplesec, 2021).
- **Educational establishments** experienced the **sixth-most amount** of cybersecurity **incidents** out of **20 sectors**(Verizon , 2020).

# Literature review findings (2)

## ➤ **Dimensions of cybersecurity culture:**

- Attitudes
- Behaviour
- Cognition
- Communication
- Compliance
- Norms
- Responsibilities

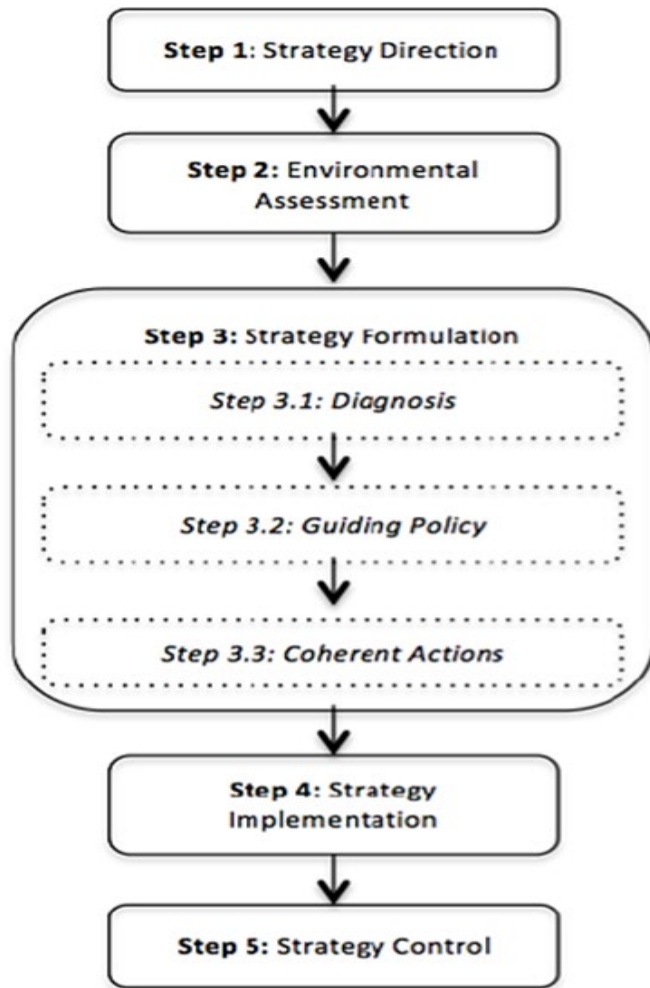
## **Factors impacting cybersecurity cultures:**

- **Organisational** culture
- Wider **cybersecurity strategy**
- The **roles** to be played by **different groups** (e.g. CEO, CISOS, middle management, IT, HR, etc.)
- **Human factors** in cybersecurity culture (e.g. psychological factors, compliance and personality, the social environment)
- **External** factor: (e.g. National culture)
- Creating a **receptive environment**

## **Implementation of cybersecurity culture:**

- **Frameworks** (e.g. ENISA Framework)
- **Syllabus** of the educational course on **cybersecurity culture: knowledge** acquisition
- **Activities** for delivering cybersecurity culture programmes (e.g. Online, hybrid, offline)

# Literature review findings (3)



Gcza & van Solms (2017)

**Measuring cybersecurity culture** (e.g. ENISA, 2018) :

- **Approach 1: Determine a CSC current situation independently** from the CSC interventions
- **Approach 2: Determine a CSC current situation** by utilising the CSC intervention metrics
- **Approach 3: Combine approaches 1 and 2**

# Towards constructing CSC conceptual model

- The literature review **main findings** are basically **elements** of the **conceptual** model of cybersecurity culture.
- The success of a CSC programme rests on a number of **key principles**(e.g. ENISA, 2018):
  - Secure **buy-in** at the **highest level**
  - **Follow** the **CSC Framework** for the **implementation** of the programme
  - **Know** the **organisation** so as to **ensure success**
  - **Measure** the **current cybersecurity** level of the **target audience**
  - **Draw** upon the **good practices** identified in this report.