Exploring Big Data to Examine Employee Health and Wellbeing: An ESRC Seminar Series

Introduction to Seminar 4: Employee Perspectives

The Team

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The Seminar Series

- Funded by the ESRC http://www.esrc.ac.uk/

- The Digital Society Network (UoS) is also contributing to the series
  http://www.sheffield.ac.uk/faculty/social-sciences/digital-society-network/digital-society-network

The Seminar Series

- Aims to **critically** explore the possibilities of using digitally captured/Big Data for assessing:
  - health and wellbeing risks within organisations
  - advancing knowledge on health and wellbeing prediction.
- Explores the idea of using some of the huge amounts of digitally captured and other data gathered within organisations
- Potential to use this as a 'temperature check' of the organisation's health
- Identify patterns in work practices that might lead to poor health and wellbeing
- Recognising limitations & ethical issues

Key Questions

- What IT working practices are related to ill health/poor wellbeing?

- What aspects of health/wellbeing can be assessed using Big Data/digital data within organisations?

- What types of Big Data/digital data might enable us to find indicators (or risk areas) of poor wellbeing/health within organisations?

- How can we advance our knowledge of IT-related health/wellbeing using Big data/digital data within organisations?

Series Structure

- Each seminar will focus on a key question related to the potential for Big Data to indicate Employee Wellbeing:
  - Seminar 1 - Examining the relationship between IT working practises and ill health
  - Seminar 2 - Indicators of Wellbeing
  - Seminar 3 - What Data and How?
  - Seminar 4 - Employee Perspectives
  - Seminar 5 - The Benefits and Disbenefits of monitoring digital data for health purposes (Edinburgh)
  - Seminar 6 - Using Digital Data to Examine Employee Health - Lessons Learned and Directions for Future Research (London)
- Our website - http://www.dew.group.shef.ac.uk/
- Follow us on Twitter – *@DEW_Seminars*

Picture So Far…

- Seminar 1 asked 'what are unhealthy IT related work behaviours', Seminar 2 considered how such behaviours might be indicated within organisational data (or other data), Seminar 3 focused on big data and measurement and analysis

- Seminar 4 focuses on employee perspectives

- Critical perspective – some of the issues associated with using big data from employee perspectives

- But also how Big data/organisational might data help us develop our understanding of wellbeing
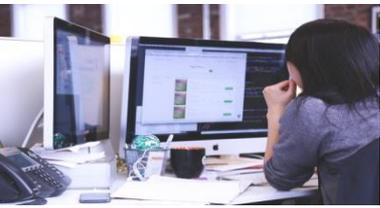
Seminar 4

11.00   Bridgette Wessels: *'Introduction to Seminar'* and *'Framing the use of big data from employee perspectives'*

11.30   Sara Eriksen *'Designing for Accountability in the Age of Big Data'*

11.55   Maureen Howard and Andrew Dodman *'Staff Wellbeing: The employer and employee perspective'*

12.25   Discussion of first three papers

12.55   Lunch

13.45   Yvonne Dittrich *Big Data for collaborative decision making'*

14.10   Liz Robson *Enacting the internet and social media on the public sector's frontline*

14.50   Discussion of two papers given in the afternoon

15.15   Coffee.

15.30   Discussion and main themes/learning points

16.15   Finish

Outline of talk: Framing the use of big data for wellbeing from employee perspective

- Dimensions of employee wellbeing and health.
- Current approaches: (1) self monitoring services; (2)organisational approaches; (3)prevention [NHS] and health [commercial] promotion tools.
- Data and related issues from employee positions
- Awareness, protections and transparency
- Requires a framework of RRI and stakeholder collaboration

Data for work: wellbeing and health data

- Employee **wellbeing** (work involvement and enjoyment) as well as employee **health**.

- Stakeholder responsibility: employees, public health and employers.

- Lack of capacity at workplace level to translate epidemiological and health research into simple, consistent and organisational friendly action.

- Job quality, work organisation, health promotion and other drivers of positive health at work

Current approaches (1): self monitoring

➢ Open source software for online interventions to support healthy living www.lifeguideonline.org, UBhave, LifeGuide Toolbox.

➢ Telehealth – monitoring chronic health http://malt.group.shef.ac.uk

➢ Quantified Self: data production based the integration of body proxemics sensors and enhancements that measure bio-information for self-analytics.

➢ ***Self monitoring using self generated data and professionally informed data interventions.***

OH and HR: organisational approaches

- Firm X – research revealed that employees want a better work/life balance, prompted the collection baseline data from the health risk assessments (HRA)

- 50% of the employees provided baseline data on a range of risks, for example, Body Mass Index (BMI) and stress/anxiety.

- Juice for Life (more of that later)

- ***Health related data – wellbeing data?***

Data as information provision: public and commercial

- National Health Service:

http://www.nhs.uk/Livewell/workplacehealth/Pages/Workplacehome.aspx

- Commercial Apps: http://www.digitaltrends.com/mobile/best-health-and-fitness-apps-for-iphone/

- ***Data: general level/ professionally generated and self-generated and personalised.***

What data?

- Big data: **3Vs**: Volume refers to the amount of data, variety refers to the number of types of data and velocity refers to the speed of data processing.

- Wellbeing data: the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning. It is subjective and typically measured with self-reports.

- Health data: HRA, Body Mass Index (BMI) and stress/anxiety levels.

Data at employee level

- Personalised learning environments, self-reporting tools, organisational data capture.
- ➢ What data from where?

- End-user/employee trust: clear informed consent and transparent data privacy.
- ➢ Problem with big data: transparency.

Research with employees

▸ Privacy Impact Assessment (PIA) with an extension to social, ethical and other relevant issues.

▸ Conducted throughout the development cycle of a new, or substantially revised, tool or system

▸ Consultation / review by employee reps. and expert stakeholders

▸ Publish in order to foster employee and public trust and responsible innovation

▸ Dependencies on user requirements, use cases and functionalities (adapted from http://www.develop-project.eu - DP)

Employee involvement

▶ Systematic and comprehensive analysis of each of requested functionalities and system requirements according to the following criteria:

  ▶ General privacy issues and questions

  ▶ Legal requirements – i.e., the General Data Protection Regulation (GDPR)

  ▶ Social and ethical issues – discrimination, gender, accessibility

▶ Consideration of the data life-cycle

  ▶ Data collection

  ▶ Data sharing

  ▶ Data storage and transmission (adapted from DP)

Outlining wellbeing data

- The employee's personal details

- Health data

- Wellbeing data

- Social media and other self-generated data

- Sensor data

- Organisational data

- The content of any feedback

- The details of those providing feedback

- Will any sensitive data be collected?

Employee involvement

- Ensure that each employee is fully aware of what data is being collected and for what purpose
- Employee has consented to the collection of this data (via a clear notice on a system when the employee requests feedback)
- Employee to provide his/her informed consent to the collection of data
- In order to minimise risk of collecting sensitive data, anonymisation, pseudonamisation or data scrubbing to render data subjects unidentifiable (as far as possible) (adapted from DP)

Issue of feedback and responsibility

- To whom is the feedback visible:
- ➢ Only the employee?
- ➢ Any members of the employee's social network?
- ➢ Any members of the organisation, including HR and future managers?
- How can feedback be used, other than by the employee for his/her own wellbeing goals?
- Are managers or HR able to access this feedback in order to make decisions about employee development?
- Can peers see this feedback and use it in comparing their wellbeing with that of their colleagues? (adapted from DP)

Risks: is the data reliable and robust?

- Risks in self-reported wellbeing data, social media data, health data, sensor data, workplace surveys.

- Employee interpretations of data analysis/may disagree with the analysis of the data and/or information.

- Inaccuracies can compound and have significant implications on decision-making by managers
  - HR and OH might like to query a wellbeing matrix across the organisation.
    - Create a wellbeing matrix that is context specific, can allow for subjective interpretations of wellbeing and general health and wellbeing indicators. (adapted from DP)

Concluding points

- Consider how to undertake responsible R&D of wellbeing systems using a range of data sources.

- Mindful about data: limitations of data and risks of data-driven solutions

- Think beyond a narrow definition of privacy

- A system for who? Employees? HR? Health providers? For all?

- The following talks cover these issues.