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FOREWORD
We are delighted to present to you the programme and genesis of the first South East Asia conference on Population and Health being organised by the Portsmouth-Brawijaya Centre for Global Health, Population, and Policy. The Portsmouth-Brawijaya Centre was created jointly by the University of Portsmouth, United Kingdom and the University of Brawijaya, Indonesia in 2015 with support from a UK Newton Institutional Links award. The focus of the Centre is to undertake research on contemporary issues on population and health in the global South. The Centre research has been supported by UK Medical Research Council (MRC); UK Department for International Development (DFID); UK Economic and Social Research Council (ESRC), British Academy (BA), and other national and international governments. Research carried out in our Centre in Indonesia focuses on population and health in the eleven South East Asian countries, and we aspire to evolve as the regional hub for coordinated research on population and health. The South East Asia Conference on Population and Health is the regional platform to bring together researchers, policy makers, and civil society organisations to discuss key population and issues affecting the region. Some key papers from the conference will be published as Special Volumes in leading journals in the field to promote further debate on programmes and policies that affect population and health issues in the region. This biennial conference marks the beginning of a new era in regional cooperation in research that will address the unique needs of the South East Asia region, a context of very diverse demographic and health transitions.

The idea of a South East Asia regional conference on population and health first emerged during a meeting held at the Portsmouth-Brawijaya Centre in 2016. This was further discussed with Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN) for possible co-design and co-funding.
There was unanimous support from BKKBN, and we thank them for co-funding and co-designing the conference. We received exceptional support from the University of Brawijaya, and the University of Portsmouth in the form of co-funding for this conference. We would like to thank the Session Chairs, distinguished colleagues who contributed to scientific sessions, and the conference team who worked outstandingly hard to make the conference a great success. We thank Indonesian government, particularly, Governor of East Java Province or inaugurating the conference. A number of individuals and organisations including the British Council supported us in organising this event in a number of ways, and we thank them all sincerely. We look forward to your active participation in the conference and hope you will enjoy your stay in Malang.

Thank you for being part of this historic event that will pave the way to future biennial conferences and productive collaborations.

Professor Saseendran Pallikadavath  
Dr M Faishal Aminuddin  
Henny Rosalinda, MA  
Portsmouth-Brawijaya Centre for Global Health, Population and Policy
August, 7th 2018

Number: 064/SEABC2018/LOC/VIII/2018
Subject: Letter of Confirmation

Dear Najamuddin Khairur Rijal,

We are pleased to confirm that your abstract entitled “The Industrial Revolution 4.0 and Labour Issues: Case in Indonesia” has been accepted for Poster presentation at “South-East Asia Biennial Conference on Population and Health 2018” to be held during November 8-9, 2018 at Singhasari Resort, Batu, East Java, Indonesia

For oral presentation authors:
Each oral presentation will have approximately 15-20 minutes including question and answer session. Please send your full paper and power point slides electronically to session chairs and the committee (seaacconference2018@gmail.com) by 10 October 2018 so that Session Chairs and Discussants have time to provide best possible feedback.

For poster presenting authors:
Those presetting posters should prepare the poster according to the guidelines provided. They should bring the poster with them on the day of presentation and meet one of the conference staff to organize display. The poster sessions will last for 1.5 hours and the main author is expected to be with the poster during the entire poster session to answer questions/clarifications from participants.

To all:
We plan to send you the full programme details by end of September 2018. All accepted papers including posters (if they can prepare a full paper by 10 October 2018 and send to the conference email) deemed suitable for publication by the selection committee will undergo peer review process set out by the journal. Papers will be finally selected by the guest and journal editor. We encourage authors of posters to submit full papers for consideration for the journal. We anticipate to accept about 21 papers for journals from both oral and poster authors.

Please contact the organizing team if you have any questions regarding the conference attendance including accommodation and other logistics.

Kind Regards,
Prof. Saseendran Pallikadavath
Chair of The Committee
INSTRUCTIONS FOR ORAL AND POSTER PRESENTATIONS

Template papers and oral presentation
1. Paper must be written in English.
2. Paper should not exceed 7000 worlds (excluding references).
3. Paper must be submitted electronically as an attachment using MS Word using the following template.
   - Background/Introduction
   - Methods
   - Results
   - Discussion
   - Conclusion
   - References
4. The deadline for full paper is October, 10th 2018.

Poster Template
- All posters are displayed at the Conference in a single, one-hour session. Poster presenters must be on hand with their poster during the session.
- Poster size: Standard Academic poster (A2) – 42 x 59 cm
- One poster presentation will be mounted on each side of the board. Use thin, lightweight mounting materials, since heavy board is difficult to keep in place. Push pins will be provided.
- Title Prepare a banner for the top of the poster indicating the title, author(s), and affiliation(s). Lettering on the banner should be at least one inch high. Layout Avoid long textual passages and use graphs and diagrams as much as possible.
- Details of the methodology generally should be brief (unless your poster focuses on a methodological development).
- Use a large font size for your text, such as 24-point. Arrange materials in columns rather than in rows so that viewers can move to the right as they finish reading each column. Indicate the sequence of figures or graphs with numbers or letters at least one inch high.
- Graphs/Illustrations Figures should be designed to be viewed from a distance (3-4 feet). Use clear graphics.
- Each figure or table should have a heading in large typeface. Detailed information should be provided in a legend below in smaller typeface. Figure legends should describe concisely the content of the figure and the conclusions.
- Presentation Prepare a short verbal description of your key findings. Consider providing an abstract, handout or copies of your paper to distribute. At least one of the authors should be present during the entire poster session. 

T
The Industrial Revolution 4.0 and Labour Issues: Case in Indonesia

Background
1. The Industrial Revolution 4.0 allows the advanced technology to replace the need for human power.
2. Based on the analysis of McKinsey Global Institute, Industrial Revolution 4.0 has an impact especially on the labour sector because the presence of robots and machinery will eliminate many jobs in the world. It is expected to eliminate 400-800 million jobs by 2030.
3. This automation and robotization era raises two paradox conditions. The digitalization era provides benefits through the ease and efficiency of economic activities of companies and industries to increase productivity. On the other hand, Industrial Revolution 4.0 reduces the use of low skill labour because it is replaced by artificial intelligence, so the unemployment rate will increase.
4. Indonesia will experience a demographic bonus. In 2030, estimated the population of productive age will reach 64 percent of the total population, so need for employment will increase. And, the presence of Industry 4.0 will raise problems (threats) related to employment in Indonesia, while providing opportunities.

Research Aim
This study aims to discuss about the consequence of Industrial Revolution 4.0 toward labour issues in Indonesia, which is threats (jobs lost) and opportunities (jobs gained) along with the development of internet-technology in Industry 4.0 era.

Method
This study is descriptive-qualitative approach, using secondary data from library research.

Conceptual Framework

Discussion and Recommendation
Workers need to adjust their skills (learning, job mobility) increasing migration from rural areas to cities. For businesses can readjust their workforce and retrain workers to have the jobs.

Main References
The Industrial Revolution 4.0 and Labour Issues: Case in Indonesia

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South-East Asia Biennial Conference on Population and Health 2018
Malang, 8-9th November 2018

The Industrial Revolution 4.0 presents threats and opportunities for workers in Indonesia, especially along with the demographic bonus experienced by Indonesia. These threats and opportunities are:

<table>
<thead>
<tr>
<th>Threats</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. According to the Ministry of Manpower, there are several jobs that have declined in periods Industry 4.0 since 2018 to 2030.</td>
<td>1. According to the Ministry of Industry Airlangga Hartarto, the application of technology in industrial sector can save the time and costs.</td>
</tr>
<tr>
<td>2. According to the McKinsey survey, in Indonesia about 52.6 million jobs potentially to be replaced by digital systems.</td>
<td>2. Technology collaborates labor with mechanical engineering processes.</td>
</tr>
<tr>
<td>3. UGM’s Head Dwikorita Karnawati said, the Industry 4.0 in the next 5 years would eliminate 35 percent of the types of jobs. Even in the next 10 years, the jobs lost will increase to 75 percent.</td>
<td>3. Airlangga Hartarto said, Industry 4.0 will increase employment that requires special skills.</td>
</tr>
<tr>
<td>4. The other main issue in the Indonesian manpower is the education and skill gaps. The lack of education and skill of workers worsened with the mismatch of labour market demand.</td>
<td>4. Industry 4.0 encourages growth of the creative industry. In 2015, this sector contributed GDP of 852 trillion, in 2016 it reached 923 trillion, and 990 trillion in 2017.</td>
</tr>
<tr>
<td>5. McKinsey studies show, in France over the past 15 years 500,000 jobs have been lost due to the development of internet. But at the same time, the internet also created 1.2 million new jobs.</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Potential Jobs Lost</th>
<th>Potential Jobs Gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2020</td>
<td>Administrative, drivers, printers, mailers, expedition officers, operators, mechanics, communication devices and radios.</td>
<td>Trainers, nurses, financial managers, lawyers, sales agents, analysts, doctors, physiological therapists, financial advisors, programmers, regular news services.</td>
</tr>
<tr>
<td>2021-2025</td>
<td>Receptionists, carpenters, 3D designers, semiconductor processors, bank teller, travel agents, fast-food cooks, and machine operators.</td>
<td>Work related to maintenance and installation, mediation, medical, data analysts, information system managers, vocational counselors, environmental impact analysts.</td>
</tr>
<tr>
<td>2026-2030</td>
<td>Welding expert, accountant staff, machine operators, truck drivers, and engineers.</td>
<td>Designer, artificial intelligence programming, automaton machines designers and controllers, software and online games designer.</td>
</tr>
</tbody>
</table>

This study aims to discuss the consequence of Industrial Revolution 4.0 toward labour issues in Indonesia, which is threats (jobs lost) and opportunities (jobs gained) along with the development of internet-technology in Industry 4.0 era.

Method

This study is descriptive-qualitative approach, using secondary data from library research.

Discussion and Recommendation

Jobs lost for low-skill labour and provide opportunities for skilled-labour.

Workers need to adjust their skills (skilling, up skilling, reskilling) because of the demands of competitive employment.

Increasingly national migration (from rural to urban) because of the demands of competitive employment.

Skilling for productive age needs to facilitate. If skills are not available for jobs, foreign workers can take the jobs.

Background

1. The Industrial Revolution 4.0 allows the advanced technology to replace the need for human power.
2. Based on the analysis of McKinsey Global Institute, Industrial Revolution 4.0 has an impact especially on the labour sector because the presence of robots and machinery will eliminate many jobs in the world. It is expected to eliminate 400-800 million jobs by 2030.
3. This automation and robotization era raises two paradox conditions. The digitalization era provides benefits through the ease and efficiency of economic activities of companies and industries to increase productivity. On the other hand, Industrial Revolution 4.0 reduces the use of low skill labour because it is replaced by artificial intelligence, so the unemployment rate will increase.
4. Indonesia will experience a demographic bonus. In 2030, estimated the population of productive age will reach 64 percent of the total population, so need for employment will increase. And, the presence of Industry 4.0 will raise problems (threats) related to employment in Indonesia, while providing opportunities.

Key Technology of IR 4.0

- Artificial intelligence
- Internet of Things
- Cyber Physical Systems
- Internet of Things, network
- Advanced Robotics
- Virtual Reality
- 3D Printing
- Internet of Things
- Internet of Things
- Cyber Physical Systems
- Internet of Things, network
- Advanced Robotics
- Virtual Reality
- 3D Printing

Industrial Revolutions Timeline:

- Industry Revolution 1.0: Mechanization, steam power, weaving loom
- Industry Revolution 2.0: Mass production, assembly line, electrical energy
- Industry Revolution 3.0: Automation, computers and electronics
- Industry Revolution 4.0: Cyber Physical Systems, Internet of Things, network

Main References

CERTIFICATE

is hereby granted to

Najamuddin Khairur Rijal

For the Participation and contribution on

SOUTH-EAST ASIA BIENNIAL CONFERENCE
ON POPULATION AND HEALTH
Singhasari Resort, Batu, Indonesia
November 8-9, 2018
as
Presenter

SASEENDRAN PALLIKADAVATH
Chair of Committee