ARTIFICIAL INTELLIGENCE, EMPLOYMENT AND SOCIAL CONFLICT IN KATHMANDU MEDICAL COLLEGE HOSPITAL, NEPAL

A Dissertation

Submitted to the Faculty of Humanities and Social Sciences of

Tribhuvan University in Fulfillment of the Requirements for the

Degree of

Doctor of Philosophy

in

CONFLICT, PEACE AND DEVELOPMENT STUDIES

By

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LETTER OF RECOMMENDATION

We certify that this dissertation entitled **"ARTIFICIAL INTELLIGENCE, EMPLOYMENT AND SOCIAL CONFLICT IN KATHMANDU MEDICAL COLLEGE HOSPITAL, NEPAL "** was prepared by Prakash Adhikari under our guidance. We hereby recommend this dissertation for final examinations by the Research Committee of the Faculty of Humanities and Social Sciences, Tribhuvan University, in fulfillment of the requirements for the Degree of DOCTOR OF PHILOSOPHY in CONFLICT, PEACE AND DEVELOPMENT STUDIES.

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APPROVAL LETTER

This dissertation entitled **Artificial Intelligence, Employment and Social Conflict in Kathmandu Medical College Hospital, Nepal**, was submitted by **Mr. Prakash Adhikari** of Humanities and Social Sciences, Tribhuvan University, in fulfillment of the requirements for the **Degree of Doctor of Philosophy in Conflict, Peace and Development Studies.** I hereby, certify that the Research Committee of the Faculty has found this dissertation satisfactory in scope and quality. Therefore, it has been accepted for the degree.

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DECLARATION

I hereby declare that this Dissertation is my own work and that it contains no materials previously published. I have not used its materials for the award of any kind and any other degree. Where other authors' sources of information have been used, they have been acknowledged.

Signature: .....

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ABSTRACT

The concept of consciousness, once considered uniquely human, is increasingly manifested in machines through technological evolution, culminating in advanced AI systems (Russell & Norvig, 2021). Rule-based AI executes tasks under direct human instruction, whereas expert AI exhibits adaptive, near-sentient behavior, challenging traditional human-centered production frameworks (Nilsson, 2014). As AI advances, physical, mental, and skilled labor face creation, replacement, and displacement, contributing to rising unemployment and social conflict (Brynjolfsson & McAfee, 2014). A study of 119 AI systems at KMC Hospital, involving 1,214 employees, revealed that expert AI significantly drives labor displacement, reshaping employment dynamics and societal structures (Frey & Osborne, 2017) in Nepal.

Humans distinguished themselves through the cognitive revolution, enabling tool use and laying the foundation for modernization and the AI-driven Fourth Industrial Revolution (Schwab, 2016). As machines perform cognitive-like tasks, the relevance of human labor is increasingly questioned. Mechanization now extends beyond routine work to skilled labor, encompassing creation, replacement, and displacement, thereby threatening physical, mental, and skilled labor (Acemoglu & Restrepo, 2019). This labor disruption challenges the legacy of the 12,000-year-old agricultural revolution. Globally, job losses are rising, and in Nepal, hospitals implementing AI have improved service efficiency while reducing employment, highlighting emerging social conflicts around labor (Kshetri, 2021) in hospitals.

This study employed a post-positivist approach to move beyond the objectivity of positivism and examine the subjective, multi-dimensional impacts of AI on employment and emerging social conflicts (Phillips & Burbules, 2000). Focusing on transformations induced by rule-based and expert AI, the research analyzed their effects on physical, mental, and skilled labor through creation, replacement, and displacement. Using a qualitative design, the study examined 119 AI tools at KMC Hospital, collecting data from 19 respondents among 1,214 employees across eight departments via structured face-to-face and phone interviews. Data were analyzed descriptively and analytically to draw conclusions about AI-driven labor dynamics.

AI tools of 119 were identified, primarily classified as rule-based or expert systems (Russell & Norvig, 2021). Expert AI was mostly used in health care, pathology, and radiology for complex and expert tasks; however, rule-based AI was chiefly

deployed in administration, security, housekeeping, driving, and pharmacy. AI can effectively deliver an extent of management that is beyond human capability, increasing throughput, quality of service, reliability, and operational efficiency. Across the eight departments, AI adoption has increased steadily, with robotic systems simplifying workflows and administrative processes. These developments are a clear indication of the sphere of AI and, even more so, efficient delivery metrics in each department's responsibilities.

Employees number of 1214 across eight departments engage with rule-based or expert AI tools, revealing patterns of job creation, replacement, and displacement (Brynjolfsson & McAfee, 2014). Rule-based AI primarily supports job creation and replacement, whereas expert AI drives displacement. For instance, robotic AI can complete tasks that initially needed four workers with one, and pathology AI can process at a rate of 900 samples an hour, which previously took two days. As a result, workers doing physical, mental, and skilled labor will be at a greater risk of unemployment, creating greater social inequality and causing an increase in social conflict as AI is altering the landscape of work and employment.

AI tools about 119, primarily rule-based and expert systems, are in active use across eight departments (Russell & Norvig, 2021). Rule-based AI predominates in administration, security, and pharmacy, supporting job creation and replacement, whereas expert AI dominates healthcare, pathology, and radiology, contributing to displacement. Recent additions, including robotic AI and 64-channel MRI machines, have transformed workflows, enabling tasks previously requiring multiple workers to be completed by one and pathology processing in one hour instead of two days. Across 1,214 roles, physical, mental, and skilled labor are increasingly displaced, shifting employment conflicts from institutional to broader societal levels.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

3D	Three-Dimensional,
ABG	Arterial Blood Gas
AF	Atrial Fibrillation
AI	Artificial Intelligence
AIS	Administrative Information System
AKI	Acute Kidney Injury
BIVDA	British In Vitro Diagnostics Association
CAD	Coronary Artery Disease
CAI	Computer-Assisted Instruction
CBC	Complete Blood Count
CCTV	Closed-Circuit Television
CM-Path	Cellular Molecular Pathology
COVID	Coronavirus Disease
CPATH	Computational Pathology
CPD	Conflict, Peace, and Development
CPM	Continuous Passive Motion
CSSD	Central Sterile Supply Department
CT	Computed Tomography
CTG	Cardiotocography
DP	Digital Pathology
ECG	Electrocardiogram
EEG	Electroencephalogram
EMG	Electromyography
ETO	Ethylene Oxide
HbA1c	Glycated Hemoglobin

HMIS	Health Management Information System
ICT	Integrating Information and Communication Technologies
ICU	Intensive Care Unit
IFT	Interferential Therapy
IRC	Institutional Review Committee
IT	Information Technology
ITS	Intelligent Transport Systems
KMC	Kathmandu Medical Collage
LLM	Large Language Model
ML	Machine Learning
MRI	Magnetic Resonance Imaging
NOTES	Natural Orifice Transluminal Endoscopic Surgery
OPD	Outpatient Department
OT	Occupational Therapy
PAT	Performance and Talent
PFT	Pulmonary Function Tests
RFID	Radio Frequency Identification
TMT	Thermo Mechanically Treated Steel
TTE	Transthoracic Echocardiogram
TTP	Total Testing Process
UBI	Universal Basic Income
UV	Ultraviolet
VAT	Value-Added Tax
WS	Web Service
WSI	Whole Slide Imaging
Xray	X-radiation