



The Role of Open Source in New Business Formation: Innovations for Development

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Marie-Claire Ayurwanda of Rwanda



- Survived HIV and death of two husbands
- Build house for her four children
- Started second business and employed others
- Empowered by a micro loan

<http://mifos.org/impact/social-mission-success/>



This story involves Fineract software

- Banking software for micro-loans
- Started by Grameen Bank which received the Nobel Peace Prize 2006
- Open source now called: Apache Fineract
 - <https://fineract.apache.org/>
- Global community
 - 245 businesses use Fineract to service
 - 6,083,974 clients



Research Questions

RQ1: How is open source participation correlated with the registration of new businesses?

RQ2: How are open source participation and the registration of new businesses together correlated to development in terms of unemployment rate changes?



Agenda

- Theoretical Background
 - Development, ICT for Development, ICT in Business, Open Innovation Model
- Theoretical Model
- Method
- Findings
- Contributions
- Limitations and Discussion



Development

- Development is “a process of expanding real freedoms that people enjoy” (Sen, 1999, p. 3)
- Economic, social, and human development
(Malaquias et al. 2017)
 - Economic: new business formation and job creation



ICT for Development

- Studied for over thirty years (Walsham 2017)
- Two perspectives (Brown and Grant 2010)
 - ICT for Development (ICT4D)
 - ICT in Development
- Three research streams (Avgerou, 2008)
 - Catching up
 - New solutions
 - Implications of dynamics
- ICT is not Development (Sahay, 2016)



ICT in Business

- Micro- and small enterprises (MSE) are foundation of economic development
(Grosh and Somolekae, 1996)
- ICT enables business activities and services
(Roztocki and Weistroffer, 2016)
- ICT use in micro enterprises increases growth by 3.8% (Qiang et al., 2006)
- MSE upgrade their ICT use (Donner, 2006)

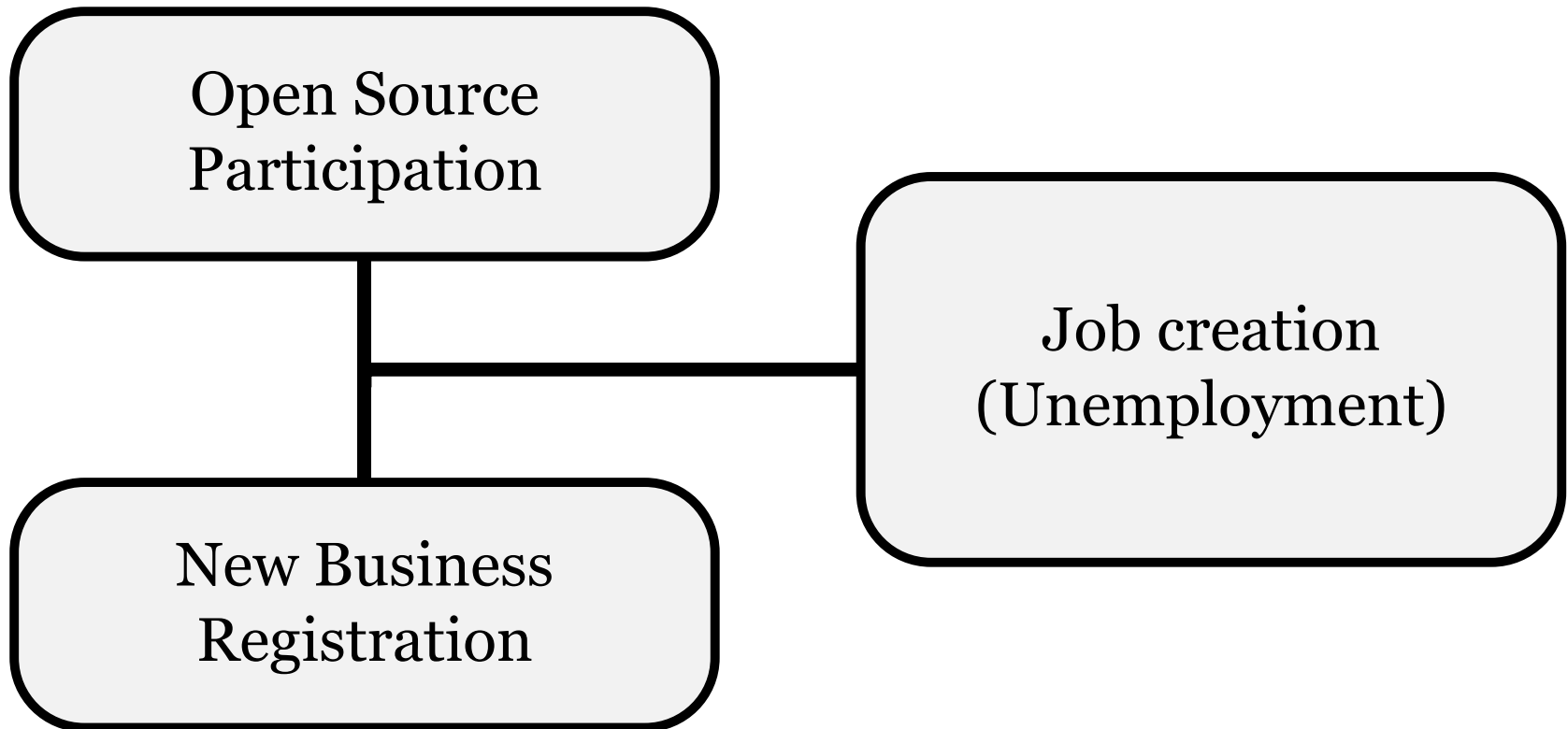


Open Innovation Model

- Innovate with locals for better solutions
(Nanne et al., 2015)
- Open Source Software democratizes access to software innovations
(von Hippel and von Krogh, 2003)
- Avoid detrimental intellectual property law
(Owoeye, 2016)



Theoretical Model





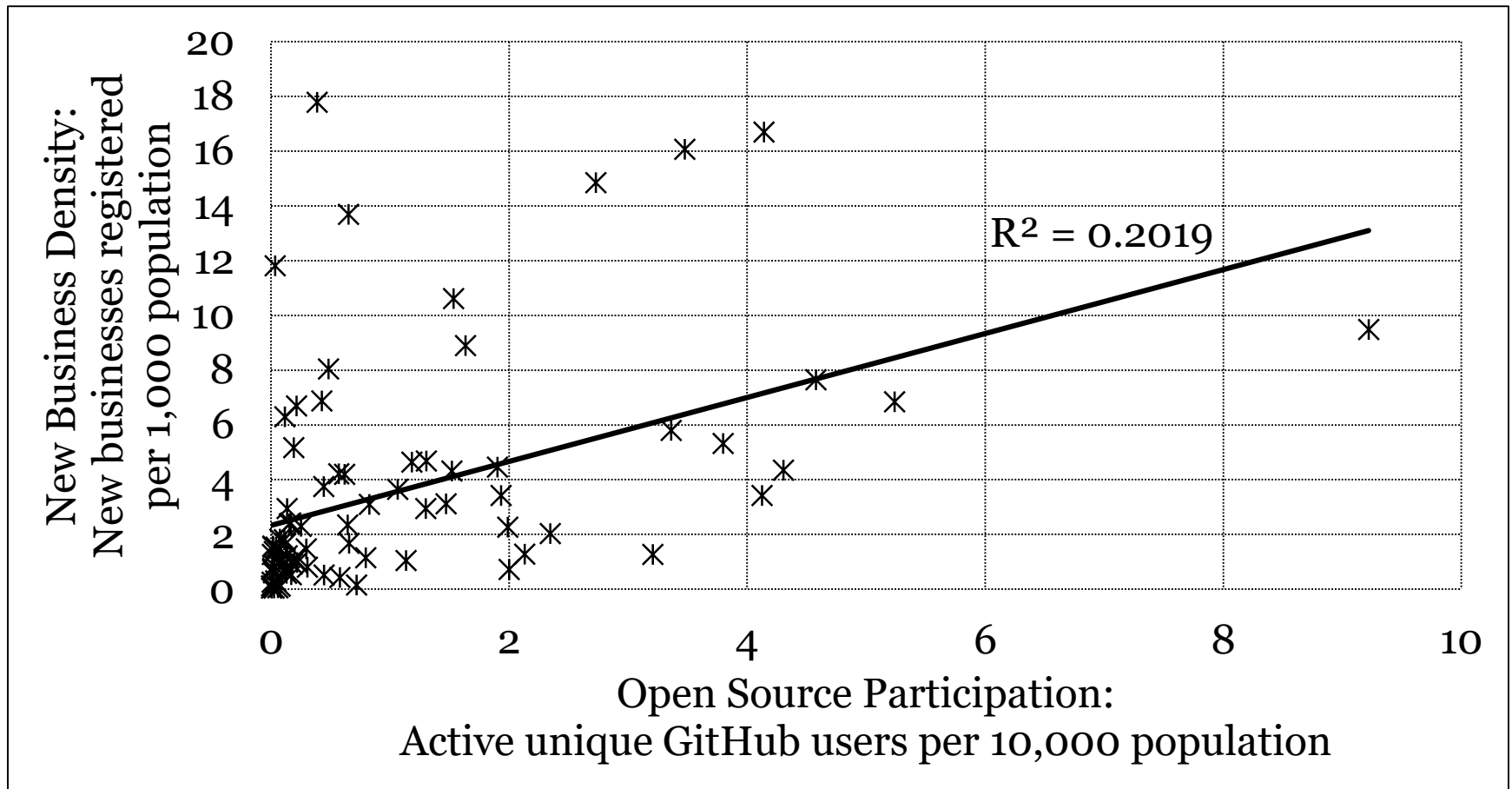
Method

- Data: 81 countries
- Variables:
 - Open Source Participation (GitHub)
 - New Business Formation (World Bank)
 - Unemployment Rate Change (World Bank)
- Spearman's rank order correlation
- Linear Regression



Findings to RQ1:

How is open source participation correlated with the registration of new businesses?





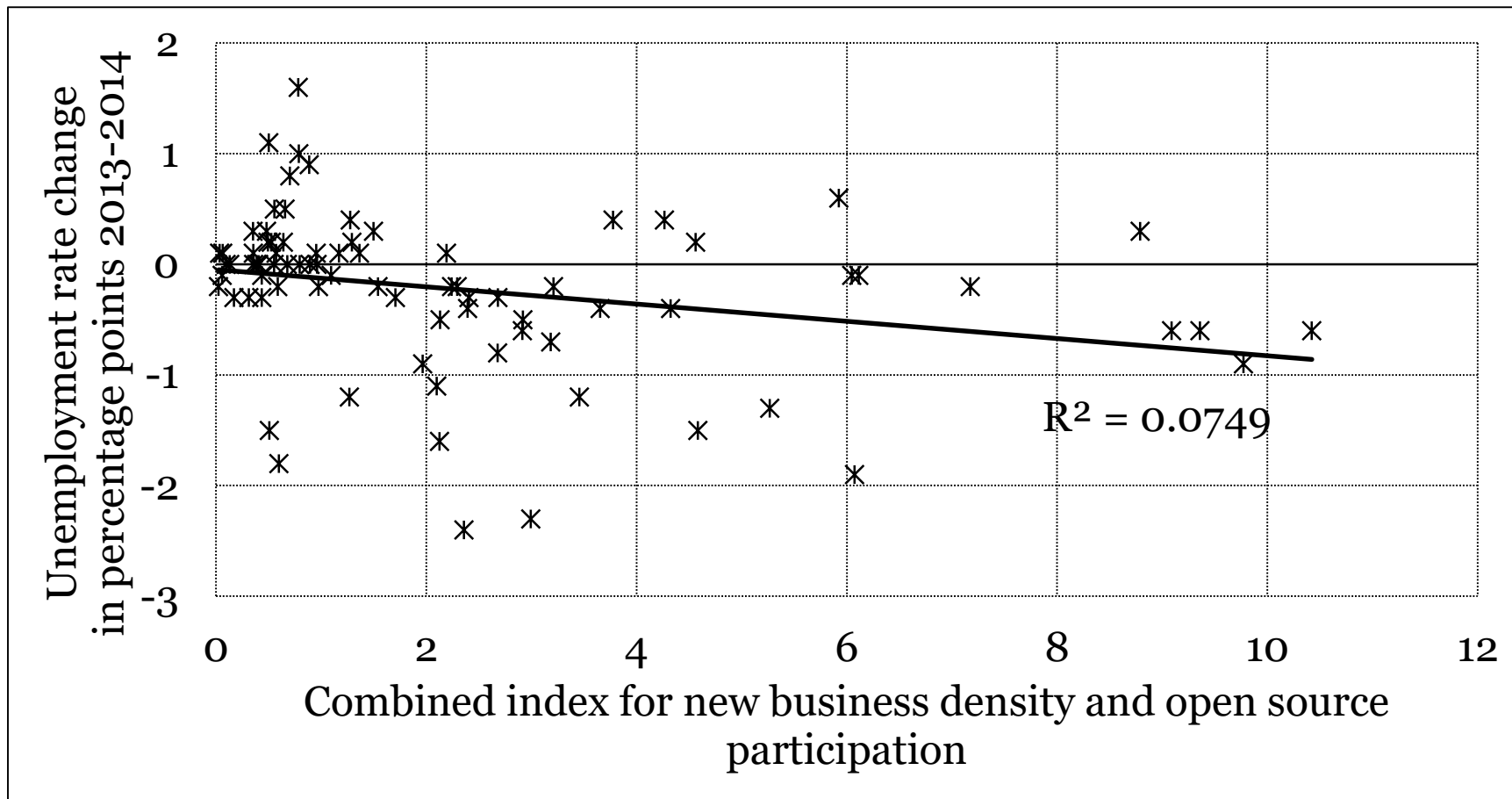
OSS Benefits for MSEs

- **New Business** (Gruber and Henkel, 2006)
 - Spark business ideas
 - Reduce up-front sunk cost
 - Lower entry barrier
 - Gain visibility with potential customers
- **Economic Growth** (Garzarelli et al., 2008)
- **Most value through participation** (Bonaccorsi et al., 2006)



Findings to RQ2:

How are open source participation and the registration of new businesses together correlated to development in terms of unemployment rate changes?





Contributions and Recommendations

- Discovery of a relationship between open source participation and new business formation
- Discovery of a relationship between open source participation and new business formation with development
- Open source can help create effective solutions in low resource environments
- Policy makers can create environment to foster open source participation



Limitations and Future Research

- Secondary, incomplete, “old” data
~9% of GitHub users provide country
- Mechanisms and complexities that are behind the observed correlation
- Social inclusion and diversity in Open Source
- Social and human development outcomes

Thank You

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