Stakeholder Engagement and Responsible Research & Innovation in promoting Sustainable Development and Empowerment through ICT

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Abstract

ICT plays a significant role in both developed and developing countries across the globe. ICTs are also seen as playing an important role in achieving the UN's Sustainable Development Goals (SDGs). In particular, their importance is seen in terms of achieving sustainable development in the areas of health, education, social inclusion, global partnership and empowerment, among others. However, much ground cannot be made without creating and involving communities and networks that will support the sustainable use and development of ICT in emerging and developing countries. One concept that advocates for the inclusion of communities and establishment of networks around the use and development of ICT is Responsible Research and Innovation (RRI). At the core of RRI is the engagement of different stakeholders within communities and networks that are involved with ICT development in emerging and developing countries to ensure sustainable development. Using stakeholder theory, we introduce the work being conducted in the Responsible Research and Innovation Networked Globally (RRING) project to highlight the important role of stakeholders as part of RRI in the use and development of ICTs in emerging and developing countries. In particular, we will discuss how stakeholder engagement as part of RRI can be understood in an emerging country like India, specifically through our discussion of a women's artisan handicraft centre known as Gramshree in the heart of Ahmedabad, India. We aim to highlight aspects of stakeholder engagement, the role of stakeholders in implementing ICTs in women's sustainable development and empowerment. The aim is to showcase how sustainable development and empowerment could be achieved through the formation of a community network around ICT use and development.

Keywords: Sustainable Development, Responsible Research and Innovation, ICT, Women Empowerment, Stakeholder Engagement

1. Introduction

Responsible Research and Innovation (RRI) is a process for better-aligning research and innovation with the values, needs and expectations of society through close cooperation between all stakeholders in various strands including the application of new knowledge in full compliance with gender and ethics considerations (Vasen, 2017). Also, RRI has emerged as a concept with the potential to advance the discourse of responsibility towards society and the environment in light of major challenges being faced today (Martinuzzi, Blok, Brem, Stahl, & Schönherr, 2018). Thus, RRI provides a strong foundation to inform everyday practices, policies, and approaches to deal with the issues that affect sustainable development such as digital divisions, inaccessible knowledge and social inequalities. At the core of RRI as an approach to innovation, is the promotion of a more open and sustainable research and innovation process through stakeholder engagement (UNESCO, 2019). However, RRI has often been seen as Europe focussed due to its supposed origins, which has made it feel more Eurocentric

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than global. There is however a shift from the Eurocentric perspective of RRI to a desire to understand it from a global perspective as seen from the work of the RRING project. Such work acknowledges that RRI is a global practice albeit done and/or understood differently from that of Europe. As such, having a global understanding has the potential to enrich knowledge sharing and a richer and in-depth look at how RRI can actually contribute to global challenges such as those outlined by the UNs SDGs.

A scoping of the literature, both of projects and academic research showed that there are very few attempts for a global RRI perspective and many, when undertaken, are devised for particular stakeholders such as industry or domains like ICT and health in certain geographies of the world. The connection between RRI and societal challenges at the global scale has been pursued in academic literature (Lehoux, Pacifico Silva, Pozelli Sabio, & Roncarolo, 2018; Voegtlin & Scherer, 2017). For instance, Voegtlin and Scherer (2017) equate responsible innovation with innovation done in support of Sustainable Development Goals (SDGs) on the dimensions of 'do no harm', 'do good', and govern these two dimensions at the global level through soft law. Other researchers expressed doubts over the potential of the RRI concept to be pursued at a global level, mainly due to its Western bias. Murphy et al. (2016) indicate the need to return to the foundations of RRI and open it to other normative traditions and cultures (Murphy, Parry, & Walls, 2016).

Other researchers investigated whether the EU RRI keys are appropriate for a global pursuit of RRI. The EU-funded project RRI Practice conducted workshops on RRI in Australia, Brazil, Bulgaria, China, France, Germany, India, Italy, the Netherlands, Norway, the United Kingdom and the United States (RRI-Practice, 2019). The projects report concludes that awareness for RRI as a concept is low, albeit upon introduction and further discussion the concept is received positively (Owen & Forsberg, 2017).

One might look at this and argue that the low awareness problem was the introduction of RRI as a Eurocentric import which is possibly why there was low awareness, perhaps what could have worked better would have been an attempt to understand how these areas 'do' and 'define' RRI, an aspect that the RRING project is pursuing. In so doing, Stilgoe, Owen, & Macnaghten (2013) premise of RRI having achieved common ground in a shared understanding of the fact that innovation should be "oriented towards societal needs, be useful to society and be mission-oriented" would have held true. In general, the European Union (EU) RRI keys which include ethics, societal engagement, gender equality, open access and science education (European Commission, 2012), are somewhat constrictive to the wide transformative potential of RRI. To this end, the four dimensions of RRI, including anticipation, inclusion, reflection and responsiveness, are found to be better suited.

Nonetheless, the EU keys are found to be commonly included in national activities related to innovation, with the exception of science education which proves to be too vague. Specific issues connected to particular political, economic and social contexts are mentioned as well. For example, in India, a broader concept of equity that would go beyond gender equality was proposed by the research conducted by the RRI Practice project. In other contexts, it is suggested that stakeholder engagement would be done only superficially, without any real input into decision-making (Forsberg, Shelley-Egan, Ladikas, & Owen, 2018).

All these are efforts to contextualise RRI on a global level due to the fact its

characteristics are more worldwide than Eurocentric. Therefore understanding what it means, how it works and how it may be defined at a global level, particularly when it comes to emerging countries such as India in light of sustainable development is pertinent. The RRING project does much work around this as it acknowledges that each region of the world is advancing its agenda on RRI through developing a methodology that brings together a coherent understanding of RRI in a global context. Specifically, the RRING project aligns stakeholder engagement and RRI with sustainable development through the establishment of a sustainable global RRING community network. As such, this paper presents a nuanced understanding of what stakeholder engagement means and how stakeholder engagement is at play through the introduction of Gramshree a non-governmental organisation (NGO) in the heart of Ahmedabad in India. The focus is on understanding the role of stakeholder engagement as part of RRI, particularly in supporting the use of ICT for sustainable development and empowerment.

2. Method

This paper used a rich picture and a stakeholder analysis to analyse stakeholder engagement at Gramshree (Bryson et al., 2013; Jepsen & Eskerod, 2009). The rich picture provided a way to explore, acknowledge and define stakeholder engagement situation through diagrams to create a preliminary mental model of the stakeholders that are engaged at Gramshree and the roles that they play (Bell, Berg, & Morse, 2016).
The analysis comprised the following steps:
1. Identification of stakeholders, from analysis and study of the interaction of participants at Gramshree.
2. Classification of the identified stakeholders into more general categories to facilitate the process and analysis.
3. Identification and ranking of the interests of each category of stakeholders. The interests correspond to the aspects the stakeholder value most and expect to be fulfilled through the use of ICT at the Gramshree.
4. Identification and ranking of the influences of each category of stakeholders on the use of ICT at the Gramshree, as perceived by the researchers and coordinators of the organisation. This is based on estimates on what each category of stakeholders has to offer to the initiative and the relative level of importance in terms of ICT use at Gramshree. This step was accomplished through observations and unstructured interviews with the different participants at Gramshree.
5. A classification of stakeholders, considering the levels of interest and influence estimated in the previous steps as the result of a free exercise and mapped on a stakeholder analysis matrix.
6. Identification of the roles of different stakeholder groups in supporting the use of ICT for sustainable development, specifically regarding women empowerment.

3. Stakeholder Engagement at Play in Gramshree

Gramshree is an NGO which aims to support women's empowerment through enhancing their knowledge of handicrafts which they can use to generate income for

themselves and their families. Through the women working at the organisation, Gramshree produces handmade accessories, garments, homeware through use of different traditional embroidery techniques, patchwork, applique as well as printing, which is all handmade. The women's expertise at the centre also includes designing patterns and final samples which women which are produced on a large scale and then sent to different Gramshree communities for women to make. Gramshree is also a haven for women who have been abused and have suffered other difficulties, such as a loss of their husbands. It is also a haven for children. The organisation offers the women an opportunity to be involved in difficult social activities such as education, building friendships, building their confidence as well as learning about finances. Gramshree has different stakeholders involved with varying degrees of understanding of ICTs. In particular coordinators have a deeper understanding of the importance of ICTs, specifically the use of social media in the promotion of the women's artisan products. However, women artisans who are given the opportunity to develop their skills only use ICTs such as mobile phones for simple communication purposes between friends and family. However, there is a desire and steps are being taken to use social media to promote the women's work to a wider audience.

4. Interests and Influences of Stakeholders in Implementing ICTs at Gramshree

The interests of the stakeholders were identified with the expectations of the use of ICTs in supporting the women for empowerment and sustainability. The identification of the interests occurred concurrently with the identification of the needs that the stakeholders would like to see addressed through the use of ICTs in promoting their outputs. The influence, in turn, was related to the direct or indirect power of the stakeholders in affecting the implementation of ICT use at Gramshree. As already mentioned, in the methods section, the identification of interests and influences was accomplished by building a rich picture that involved informal conversations with different representatives of Gramshree. In this paper, the interests and influences for each stakeholder type were conjectured in a free exercise. Figure 1 below gives the outcome of the free exercise carried out to map the different stakeholder groups at Gramshree.
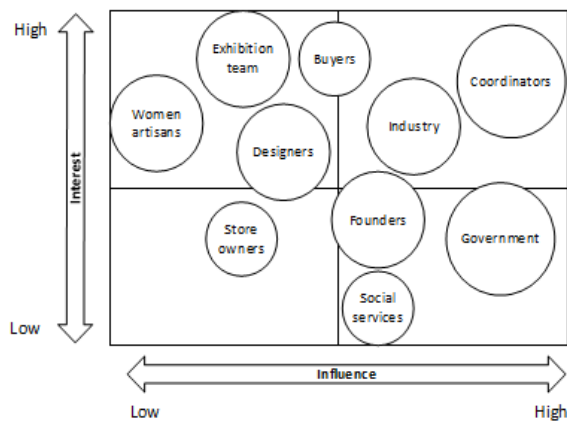

Figure 1: Interests and Influences of stakeholders in implementing ICTs at Gramshree

Figure 1 above presents a mapping of the different stakeholders that are engaged at Gramshree. The stakeholders are mapped according to their influence and interest in the implementation of ICTs at Gramshree to support women become more independent in their artisan business. The interests or influences were ranked according to their level of importance in implementing ICTs from the standpoint of the stakeholders of the organisation, respectively, following the narratives that were part of the rich picture of Gramshree. The information thus obtained from the mapping may be taken as an important tool for the management of Gramshree, and may be used to align the implementation of ICT use in achieving the objectives of the organisation with the needs and expectations of the most important stakeholders. In particular, these objectives may be related to sustainability and women empowerment. By understanding the interests and influences of different stakeholder groups at play in Gramshree, which depending on the situation, maybe either those that have more interest in the use of ICTs or those that can affect the implementation of ICTs most, management can plan an efficient allocation of effort towards the identification and engagement of stakeholders. The engaged stakeholders play a significant role in supporting the organisation in meeting its goals, specifically around sustainability and empowerment through ICT use based on their level of influence and interest in ICTs.

RRI provides a strong foundation in dealing with the issues that affect sustainable development such as digital divisions, inaccessible knowledge and social inequalities (Giovannini et al., 2015). RRI fosters the engagement of stakeholders in different initiatives, including organisations such as Gramshree. There are several reasons why stakeholders' engagement is important. The first reason is one of knowledge co-production between stakeholders. This co-production of knowledge is often a result of active input from different stakeholders, which facilitates mutual learning (Chilvers, 2013). In the case of initiatives such as Gramshree, stakeholders influence the success of the initiative by bringing a wider input based on their different disciplines and backgrounds. The engaged stakeholders combine their knowledge on artisan craftsmanship and how ICT could be leveraged in promoting their sustainable development. Secondly, different stakeholders contribute to increasing the legitimacy of the initiative. Results from initiatives or organisations that engage different stakeholders claim legitimacy compared to ones that do not engage a range of stakeholders (Spitzeck & Hansen, 2010) therefore increasing buying-in and pride of ownership of the activities and the outcomes resulting from them. Thirdly, stakeholder engagement facilitates accountability of significant uncertainties that occur in initiatives and inform policy formulation and implementation guidelines that support and maintains the relevance of the initiative to communities (Webler, Kastenholz, & Renn, 1995; Webler, Tuler, & Krueger, 2001).

Regardless of all the said worth of stakeholder engagement, there are still some shortfalls on how organisations could fully utilise the leverage of stakeholder engagement in achieving some of their goals. One way to deal with such shortcomings in utilising stakeholder engagement as part of RRI in achieving sustainable outcomes is to understand stakeholders and the roles they play by using a stakeholder mapping approach (Bryson, Quick, Slotterback, & Crosby, 2013). Stakeholder mapping involves categorising stakeholders in relation to their level of interest, influence, power and

relevance to a particular initiative (Leventon, Fleskens, Claringbould, Schwilch, & Hessel, 2016). For instance, regarding influence, stakeholders could be identified to contribute based on their knowledge and expertise (Rahman, Moonira, & Zuhora, 2015). Using stakeholder mapping, we can highlight that different stakeholder groups may be engaged in an initiative such as Gramshree, subject to the perceived technical competence and influence on specific aspects of the initiative. For instance, this can be around the use of ICT in achieving particular outcomes. Durham et al. (2014) point out that the right mapping of stakeholders promotes effective use of available resources within an initiative; whether it be material or human (Durham, Baker, Smith, Moore, & Morgan, 2014). Using the stakeholder analysis described above, the paper has been able to highlight the level of influence and interest of stakeholders in implementing ICTs that has the potential to support women's sustainable development and empowerment.

5. Conclusion

Mapping the interests and influences of each category of stakeholders, provided a nuanced understanding of what stakeholder engagement means and how stakeholder engagement is at play through the introduction of the Gramshree in the heart of Ahmedabad in India particularly in supporting the use of ICT for sustainable development and empowerment. Understanding stakeholder engagement at Gramshree using stakeholder analysis is useful for the design and planning of functions and roles within Gramshree. The process of designing and planning stakeholder functions and roles with regards to ICT use should be carried out making the best possible use of the opportunities made available through the influences of each stakeholder category in implementing ICT for development and women empowerment.

6. Acknowledgements

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