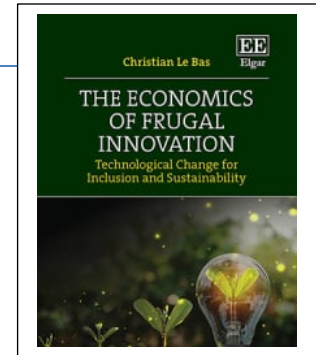


Book Review

Reviewing Implications of 'Economics of Frugal Innovation' on Developing Countries

A Comparison to Inspiration Economy Labs



Mohamed Buheji
email: buhejim@gmail.com

Founders of Socioeconomic Institute for Advanced Studies (SIAS)- Rwanda

Received 20 Jan 2023, Revised 1 March 2023, Accepted 10 April 2023,
Published 1 May 2023

Abstracts

This paper reviews the work of Le Bas (2023), which introduced the 'Frugal Innovation' (FI) from the inclusion and sustainability economics perspectives. The book shows how FI is integrated into different industries to ensure this low-cost innovation process can create a paradigm shift similar to what the Nano Car made in the different industries.

Frugal products and process innovations and their importance to emerging and developing economies markets are synthesised and then compared to their impact on the developed economies. This new direction in optimising resources to benefit developing countries and underprivileged communities is compared to what the author has developed as a new paradigm in dealing with challenges through inspiration economy approaches and, specifically, inspiration labs.

Keywords: Frugal Innovation, Economic Transition, Inspiration Economy, Developing Countries.

1.0 Introduction

Frugal Innovation FI is an approach to innovation that focuses on creating simple, affordable, and sustainable solutions to complex problems. This approach has important implications for community development, particularly in low-income or resource-constrained areas. Korze et al. (2021), Albert (2019), Buheji (2019b).

*Corresponding author e-mail: buhejim@gmail.com

One of the key benefits of FI is that it can help to address the needs of underserved communities. By creating low-cost and accessible solutions, FI can help to bridge gaps in healthcare, education, infrastructure, and other critical areas. For example, frugal innovations like low-cost medical devices, solar-powered lamps, or water filters can make a big difference in improving access to healthcare, education, and basic necessities for people living in rural or low-income areas. Lim and Fujimoto (2019).

Another implication of FI is that it can empower local communities to develop their own solutions to problems. Frugal innovations often rely on local resources and knowledge, which means that they can be developed and implemented by community members themselves. This can help to build local capacity and foster a sense of ownership and pride in the solutions that are developed. Buheji (2020)

Through FI we can have more rapid positive environmental impacts that prioritise sustainability and enhance minimalism thinking. There are many innovations that can bring in renewable energy sources to support overcoming the scarcity of water or electricity in certain communities. Korze et al. (2021)

Overall, this paper focuses on the significant implications that FI brings for community development. By creating simple, affordable, and sustainable solutions to complex problems, FI can help to address the needs of underserved communities, empower local communities to develop their own solutions, and promote sustainable development practices. The author starts by defining FI characteristics and requirements with examples of Tata cars and the innovations achieved in healthcare. Then, the reflections on Le Bas (2023) work make us focus on how FI is changing the developed world paradigm through the learning happening in the emerging markets. The researcher shows how FI is supporting sustainability by emphasising self-sufficiency or creating disruptive innovation, or addressing the SDGs besides helping the poor communities. Albert (2019).

2.0 Literature Review

2.1 Defining Frugal Innovation

Frugal Innovation (FI), as described by Le Bas (2023) is a phenomenon whereby solutions are developed to serve low-income customers, mainly in developing countries, with affordable products and services that help address pressing social and environmental problems. Buheji and Ahmed (2018).

Scholars have studied FI from various perspectives, resulting in multiple definitions, and that this type of innovation is creating solutions developed under various resource constraints, and they are often significantly cheaper than conventional equivalents, thus serving customers who would otherwise be overlooked, Von von Janda et al. (2020), Hossain et al. (2016), Buheji (2019b), Rao (2013).

2.2 FI Characteristics and Requirements

FI have specific characteristics and requirements for its processes, or products, or business models, which makes it unique, affordable, adaptable, and accessible approaches. FI uses extreme resource constraints conditions to bring solutions that are efficient and have a cost advantage. DAngelo & Magnusson (2020), Buheji (2019b), Lim and Fujimoto (2019).

FI is usually directed towards addressing specific societal challenges through products and services that remain competitive with a lower cost of production and which could fit more emerging markets, Von Janda, et al. (2020). The affordable solutions that FI bring to the market can be characterised as local know-how bringing with it an understanding of local markets and creating social change, Krishnan & Prashantham (2019).

The other characteristic of FI is the focus on the wellbeing for the benefit of the underprivileged. This means reorienting the innovation value chain and approaches to the benefit of the common good. The whole ideation of innovation work for a clear purpose, which is the creation of more durable, simple, yet essential to compete with more sophisticated but more expensive goods. This type of approach is essential for developing economies but is becoming crucial for a large share of the demand of developed ones.

2.3 Frugal Innovation by Tata Cars

Tata wanted to create a market for lower-class families who could afford a car, but could afford two-wheelers. The idea of this frugal Innovation is to disrupt the market of the lower class regarding mobility and create a new market for those who have no access to cars. Although the example illustrated by Le Bas (2023) was early, it has given a clear picture of the depth of frugal Innovation, especially for communities developing and enhancing the achievement towards the united nations' sustainable development goals (UN-SDGs). Some researchers believe that FI, if it enters a digital world, would provide an

opportunity to drive the attainment of (UN-SDGs) with a much more scalable impact. Le Bas (2023), Albert (2019).

Tata Nano would not have been 'cost-effective; without the realised belief of both the engineering and design teams of Tata of FI slogan 'less is more' till the final output of the vehicle, which cost \$2000. Therefore, Le Bas (2023) mentioned Tata Car so that we appreciate what other car manufacturers and different sectors are doing. Following the same FI approaches, Kwid also came to address the necessity for a high-end frugal car market. Kwid, which was developed by Renault-Nissan in India, was launched in 2015 and cost around \$4,000. The Kwid car targeted both the Indian and Brazilian market. Krishnan and Prashantham (2019).

2.4 Frugal Innovation in Healthcare

Le Bas (2023) mentioned the impact of the simple design infant warmer that was brought forward by (FI) which is low-cost and helps prevent hypothermia in premature or low birth weight babies. The device is portable, does not require electricity, and costs around \$200, compared to the \$20,000 cost of a traditional incubator. This Innovation has helped to reduce infant mortality rates in many developing countries, where access to high-quality medical equipment is limited. Lim and Fujimoto (2019).

This led to the development of the GE product of lullaby Baby Warmer which is cost-effective for many developing countries. The medical device is sold for \$3,000 against \$12,000 for the product available in the market and which is usually afforded by major hospitals. Despite its cost-differentiation, the FI did not sacrifice features such as durability, simplicity, and performance, and this made the device now even used by hospitals in many developing countries. These FI approaches a small sleeping bag that is made from a pouch of phase-change material (PCM) that absorbs or releases heat in accordance with the baby's needs, where the heater retains optimal heat levels for up to 8 hours.

Similar to The FI process led to a baby warmer that is inexpensive, durable, hygienic, safe, and portable. The FI also help to bring in waterproof materials that allow the easy cleaning and sterilisation of the warmer. FI helped to overcome challenges such as building trust between mothers in the temperature scales, by embracing easy-to-interpret signs of "OK" and "Not OK".

Siemens used FI to bring higher value to customers of the Fetal Heart Monitor that uses inexpensive microphone technology rather than costly ultrasound

technology. This affordable Fetal Heart Monitor is part of Siemens' larger portfolio of frugal solutions labelled SMART (Simple, Maintenance-friendly, Affordable, Reliable, and Timely-to-market). SMART products are 40-60 percent cheaper than high-end solutions. They are also energy-efficient as well as quicker and easier to implement, use, and maintain. Siemens estimates there is a US\$200 billion global market for SMART products. Rao (2013)

The other healthcare-related product that came to be a popular example of FI contribution to the quality of life in poor communities is the Jaipur Foot. Jaipur Foot is a low-cost prosthetic foot made from locally available materials and costs around \$30 to produce, compared to the \$3,000 cost of a traditional prosthetic foot; it helps many less privileged people to access such affordable prosthetic devices and enables them to have more independent and productive lives.

To help combat counterfeit drugs in Africa, also FI helped to develop a mobile-based technology platform designed. The system allows consumers to check the authenticity of drugs they purchase by sending a code via SMS. This Innovation has helped to improve the quality and safety of drugs in many African communities, reducing the risk of illness and death due to counterfeit drugs. Rao (2013)

2.5 How is Frugal Innovation Changing Developed World Paradigm?

From the introduction, we know now that FI is the ability to generate considerably more business and social value while significantly reducing the use of scarce resources. It is an approach about solving and transcending the mindset of "doing more with less". Through FI we can set a game with life conditions or demand that is similar to a change strategy to meet the challenges of inflation, economic and socioeconomic instability, or austerity. Through approaches such as FI organisations need not only to become cost-conscious, but in fact, change the reality towards bringing creative solutions that are simultaneously affordable, sustainable, and of high quality. It is a whole new mindset, of flexible approaches that perceive resource constraints not as a debilitating challenge but as a growth opportunity. Korze et al. (2021), Krishnan and Prashantham (2019), Lim and Fujimoto (2019), Radjou, and Prabhu (2013).

Through this paradigm, Unilever has already introduced many FI products in European Union to help communities that are already suffering from inflation and economic crisis survive and maintain a minimal quality of life.

Unilever's frugal offerings in developing countries made them distribute soaps and shampoo in small quantities, individual units or tiny sachets to millions of cost-conscious rural consumers. This practice has now transferred to the EU market. For example, the popular Surf detergent is now sold by Unilever in smaller packs, requires less water and creates less pollution, and where the packs are only five washes to manage a small cash flow. The company has also introduced low-cost brands of tea and olive oil in European markets. Through FI, Unilever managed to make 25% of its agricultural raw materials from sustainable sources and uses lower-emission trucks to distribute its products. Radjou and Prabhu (2013). Such projects are bringing the phenomenon of "frugality" which refers to being able to bring a frugal solution that helps in enhancing saving for the stakeholders involved; while reducing waste.

2.6 FI in Emerging Markets

FI helps today to enable all the poor to save, spend, and transfer money using their cell phones without having a bank account. FI also helps to support the availability of solar energy at very low prices to over 125,000 households in remote villages in poor communities.

FI in Rwanda is optimising the limitations of its lands by subcontracting all farming work from the government to different community members or coops. This boosted Rwanda's agricultural output without adding more overhead to the government.

Le Bas (2023) mentioned the differentiation that FI could bring to the world, i.e. more than 75% of the globe who look for 'low cost, but good enough' innovations'. Such innovations would help to bring specifically the developing economies' consumers and the unserved lower end of the mass market for simple products that address essential contextual elements. There are another of the main advantages of FI in emerging markets is that it brings new products or services that create breakthroughs even for developed countries. Such demand could bring a shift to the corporate mindset of developed countries and industries. Radjou and Prabhu (2013).

2.7 Frugal Innovation and Sustainability

FI's potential contributions to the three pillars of sustainability are also discussed (Howell et al., 2018). Second, this study reveals that FI has dual outcomes in terms of achieving both business growth and inclusive growth.

FIs are arguably driven by both economic and social motivations, so they often create new markets by developing affordable products that improve people's living conditions and encourage inclusive growth. We, therefore, argue that given the well-balanced economic, social, and environmental outcomes, FI has the potential to address some of the world's grand challenges, such as sustainable energy generation, affordable healthcare, female empowerment, reduced child labour, and local job creation. Korze et al. (2021).

Rosca et al. (2017) and Albert (2019) emphasised the importance of inclusive growth and sustainability in establishing a strong driver of FI diffusion. Many authors speculate that tomorrow there will be strong demand for Innovation that is more socially acceptable as far as environmental goals are concerned, Hansen et al. (2009).

The importance of sustainability establishes a strong driver of FI diffusion. Many authors speculate that tomorrow there will be strong demand for innovation that is more socially acceptable. The FI complex interactions between economic players.

2.8 FI and the concept of Self-Sufficiency

The planet is faced with resource scarcity on the one hand, and economic constraints on the other, so we hope that it brings balance and sobriety to the current consumption-driven and growth-driven narratives that are predominant.

Inspiration Economy focuses on optimising the use of non-financial resources of the communities. This especially important today with the rising need for reusing and/or repurposing things or resources during a time of inflation and economic instability. The more we start to see how to optimise these restricted resources, the more frugal innovation and inspiration economy approaches would be appreciated in the different communities. Buheji (2019b), Buheji (2018b).

2.9 FI and Complex Disruptive Innovation

FI depends on incorporating complex interactions between economic players. These frugal systems could be cities or regions defining new programmes of development based on frugality, or networks of actors linked through Circular

Economy practices to manage natural resources that supply renewable energy systems (Albert, 2019).

FI fits disruptive innovations in the area of aligning social and environmental challenges and thus disrupts the way we are fighting against climate change and pollution, besides eliminating equality, poverty, and other socioeconomic challenges. Rao (2013).

FI main disruptive change comes from the way it is efficiently managing to improve the wellbeing of individuals or the community and not only to enhance profits. Thus, FI is becoming a lever to create a better world the creating new approaches or employing simple technology that enhances the economic inclusion of low-income people. Rao (2013).

2.10 Frugal Innovation and Poor Communities

FI represent a niche for new channels for profits that come from serving low-income communities while alleviating socioeconomic problems such as poverty, or exploiting inequality, Knorringa et al. (2016).

The simplification of the design and the production process, coupled with the non-sophisticated technology, helped to bring many solutions to poor consumers. These socioeconomic interactions between the economic players within networks of actors that are designed to help shape further new hidden solutions. Rao (2013)

Therefore, one could conclude that FI plays a great role in moving socioeconomic development in developing countries since it helps numerous consumers with low purchasing power to participate in the economic cycle, Winkler et al. (2020). The idea is based on the fact that when poor communities start to enter the economic cycle, they start to sell and buy products, and low-income customers start enjoying a range of options. This creates a platform for socioeconomic development that is supported by transferring knowledge in low-income markets.

3.0 Synthesis of Literature

3.1 Comparing the Processes of FI and Inspiration Labs

Both FI and Inspiration Labs target to create change through a bottom-up approach that brings in solutions that support frugal innovation development in a locally adapted context. FI and inspiration labs, use the concept of 'influencing without power', in relevance to eliminating challenges in

developing communities, or in dealing with causes that lead to more inequality in the world. i.e. bringing real Innovation that is efficient and suites the purpose. Buheji (2019a), Buheji (2018)

Inspiration Labs work with the community and the stakeholders to create breakthroughs in the change targeted, while FI does a prototype and then embraces changes based on feedback from fieldwork. Buheji (2019a). DAngelo & Magnusson (2020) and Lim and Fujimoto (2019) see that FI involves an affordable but practical product that is developed to fulfil a need among low-income customers in an emerging market. Buheji (2016).

Both FI and Inspiration Labs work on the basis that resource scarcity is an opportunity that can be a catalyst for radical Innovation. Both work on enhancing the capacity to absorb the rate of consumption, by developing self-sufficiency or through supplying or optimising the proper non-financial resources. Besides, both FI and Inspiration Labs focus on “doing more with less” strategy. Buheji (2019a), Buheji (2018b).

FI has been lately more used as a simple innovation approach which could overcome the expenses of cutting-edge technological products. The revolutionary change operated by FI becomes evident through the frugal product when it becomes more appealing to low-income consumers.

One important piece of information deserves particular attention here: there is an increasing number of consumers with minimal spending capacity in developed economies.

Both FI and Inspiration Labs have the capacity to provide new solutions for communities with limited purchasing power and help address unforeseen problems that society may experience. For example, both FI and inspiration albs can play a role in dealing with the crisis of the COVID-19 pandemic in the future due to their focus on the affordability of the solutions, besides the customer aspirations, and product localisation and accessibility are critical if low-income customers are to adopt products.

3.2 FI and Economic Transition

FI is used more than ever in developing simple strategic transformations for achieving certain economic, social, and environmental goals. FI helps to deliver long-term transformation towards business growth and inclusive growth. In order to support economic transitions, FI should be employed in policy change,

which supports what Buheji (2020) has seen about the economics of Innovation and its role in consumers' way of life. Buheji and Ahmed (2018).

3.3 Frugal Innovation as a Transformative Change Methodology

The cost of living has increased dramatically in many economies – what do you think a frugal approach offers in the current economic situation?

It offers the opportunity to encourage minimalism and sobriety in consumption by changing the dialogue, enabling consumers to drive the demand for frugal Innovation through a conscious, change in society's mental set.

Le Bas (2023) has shown how frugal Innovation can play as transformative change methodology. The recent global crises have made this theme even more relevant. Le Bas emphasises that frugal approaches, directly and indirectly, a long-term management philosophy. FI Transformative change targets 'human progress' while pure Innovation are made via the decisions of organisations motivated by the search for profits.

The growth of frugal Innovation can happen in parallel with new movements such as low-tech and sobriety. But, at the moment, the intersections are not mainstream, and we are wondering how we could bring this to the forefront of political discourse and increase awareness about choices to drive positive business and societal transformation. Buheji and Ahmed (2018).

Innovation of any transformative change, as per Schumpeter, is about the capacity to bring in creative response to the disequilibria and/or the modification of the economic, social, and environmental conditions.

3.4 Frugal Innovation and Schumpeterian Innovation

Despite the failure in improving the consumers' perception about owning the Tata Nano car and it is being associated with a lower social status, The Tata Nano case provides a good reference for developing affordable products for lower market levels through a frugal perspective, Lim and Fujimoto (2019).

Le Bas (2023) mention that the heterodox approaches to the economics of innovation and evolutionary economics that FI provides brought the Schumpeterian model of Innovation. These frugal products are associated with a concentration on core functionalities and a minimum level of technological advancement performance.

Schumpeter is a scientist who believed that the search for Innovation depends on the intrinsic characteristics of the system and not only on the economics of entrepreneurial competence. These characteristics can be used for effective, transformative change that is analysed not only in terms of innovation knowledge externalities as per the Schumpeterian model, but also in terms of the social and environmental context.

4.0 Discussion and Conclusion

Christian Le Bas brought key elements of the economics of frugal Innovation (FI). He introduced the implications of frugal Innovation (FI) on the reality of the market we are experiencing today, by illustrating the impact of both the Tata Nano car and the GE lullaby Baby Warmer on the classical innovation process. This helped the reader and, specifically, the practitioners to appreciate more the FI concept and its impact scope.

The review of the book shows there are various personal, business, and social motivations act as key drivers for FI. The author of this paper sees that such key drivers make the book to be a good introduction to the academic community and would enhance their understanding of FI practicality and bring a comprehensive understanding of what FI is constitutes of. The review found that similar rising approaches are helping in both conserving natural resources and efficiently optimising the utilisation of non-financial resources to solve complex socioeconomic problems. For example, through such approaches, we started to see the poor get to preserve their food safely without having access to fridges with electricity. And through the spread of such FI approaches, it is not surprising to see communities starting social enterprises that encourage the use of banana fibres as a raw material for making sanitary pads.

The work of Le Bas (2023) could be more developed by future researchers by focusing on how comprehensive frameworks could bring a common understanding of this field. Therefore, this paper shows that FI could be compared to similar concepts as Inspiration Economy Labs can create new types of products, processes, or approaches that can create fresh business models that focus on serving low-income customers or improving their quality of life. Such new approaches would need to renew the type of markets in developing countries and stimulate new forms of competition.

Overall, frugality enables firms to utilise new innovation opportunities by adopting a new mindset oriented towards developing affordable products for new markets. At the same time, the inspiration economy uses the opportunities

to create a specific community outcome. However, FIs managed to create low-tech, affordable solutions that serve low-income customers, mainly in developing and emerging economy markets.

References

- Albert, M (2019) Sustainable frugal innovation - The connection between frugal Innovation and sustainability, *Journal of Cleaner Production*, Vol 237, 117747.
- Buheji, M (2020) Creating Innovation Policies that Leads to Positive Future Spillovers -A Critical Review, *Business and Economic Research* ISSN 2162-4860, Vol. 10, No. 1, p. 176-181.
- Buheji, M (2019a) Understanding the Economics of Problem-Solving. A Longitudinal Review of the Economic Influence of Inspiration Labs- Three Years Journey on Socioeconomic Solutions. *American Journal of Economics* 2019, 9(2): 79-85.
- Buheji, M (2019b) 'Re-designing the Economic Discovery of Wealth' a Framework for Dealing with the Issue of Poverty, *International Journal of Economics, Commerce and Management* United Kingdom 7(2): 387-398.
- Buheji, M. (2018a) "Influencing without Power" Currency in Inspiration Labs, A Case Study of Hospital Emergency Beds. *American Journal of Industrial and Business Management*, Vol. 8, pp. 207-220.
- Buheji, M. (2018b) Role of Empathetic Engineering in Building More Resilient Green Economy. Case Study on Creating Resilient Self-Sufficient Food Security Programs in Middle East. *Advances in Social Sciences Research Journal*, 5(3) 148-157.
- Buheji, M. and Ahmed, D (2018) Book Review- Innovation in Developing and Transition Countries - New Horizons in Regional Science Series. *Review of European Studies*; Vol. 10, No. 3,
- Buheji, M (2016) *Handbook of Inspiration Economy*. Bookboon.
- D'Angelo, V and Magnusson, M (2022) Frugal Approaches to Innovation: Industrial Settings and Innovation Strategies, in *IEEE Engineering Management Review*, vol. 50, no. 2, pp. 88-92, 1 Secondquarter, June 2022, doi: 10.1109/EMR.2022.3171133.
- Hossain, M; Simula, H, Halme, M (2016) Can frugal go global? Diffusion patterns of frugal innovations, *Technology in Society*, Volume 46, pp. 132-139.
- Howell, R, van Beers, C, Doorn, N (2018) Value capture and value creation: The role of information technology in business models for frugal innovations in Africa, *Technological Forecasting and Social Change*, Volume 131, pp. 227-239.

- Knorrina, P., I, P., Leliveld, A., & van Beers, C. (2016). Frugal Innovation and development: Aides or adversaries? *European Journal of Development Research*, 28(2), 143-153. <https://doi.org/10.1057/ejdr.2016.3>
- Korze, A; Buheji, M and Davidovic, D (2021) Re-Interpretation of “Sustainability” **Concept**, in Post- Covid-19 Period, *International Journal of Management (IJM)*, 12(2), pp 156-165.
- Krishnan, R. T., & Prashantham, S. (2019). Innovation in and from india: The who, where, what and when. *Global Strategy Journal*, 9(3), 357-377. <https://doi.org/10.1002/gsj.1207>
- Le Bas, C (2023) *The Economics of Frugal Innovation. Technological Change for Inclusion and Sustainability*. E-Elgar
- Lim, C., & Fujimoto, T. (2019) Frugal innovation and design changes expanding the cost-performance frontier: A Schumpeterian approach. *Research Policy*, 48(4), 1016-1029. <https://doi.org/10.1016/j.respol.2018.10.014>
- Radjou, N and Prabhu, J (2013) *Frugal Innovation: A New Business Paradigm*. Knowledge Website, Instead. <https://knowledge.insead.edu/entrepreneurship/frugal-innovation-new-business-paradigm#:~:text=Unilever%20has%20already%20introduced%20many,mashed%20potatoes%20in%20smaller%20packages>.
- Rao, B (2013) How Disruptive is Frugal? *Technology in Society*, Volume 35, Issue 1, p. 65-73.
- Von Janda, S., Kuester, S, Schuhmacher, M, Shainesh, G (2020) What frugal products are and why they matter: a cross-national multi-method study. *J. Clean. Prod.*, 246, p. 118977.