THE IMPACT OF FRUGAL INNOVATION ON SOCIAL SUSTAINABILITY IN THE GULF STATES.

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Introduction

The research proposes to answer the primary research question, "what is the impact of frugal innovation on social sustainability in the Gulf States". Frugal innovation is a notion aimed to create solutions when there are resource constraints (Rao, 2013). The notion of frugal innovation is largely driven by low-cost competition, demand, and rising markets where organisations are developing solutions related to the scarcity of resources for low and middle-level income segments (Zeschky et al., 2011). Frugal innovation also aims to address issues in a number of sectors like healthcare, transportation, energy, water, and communication by involving the support and corporation of the private sector (Simula et al., 2015). Rao (2013) stated that some of the key characteristics of frugal innovation are in the form of low-cost, focus on local use, using local and discarded materials, and minimum use of resources. Frugality is also seen as an important characteristic of sustainable management that equates it to the idea of sustainability (Rodjou and Prabhu, 2014).

However, there are a lack of studies and findings on the relationship between frugal innovation and social sustainability in the Gulf States. Thus, the research work will focus on investigating whether frugal innovation advances sustainability along with exploring sustainable implications of frugal innovation from an empirical vantage point (Rodjou et al., 2012). In past research attempts, resource constraints are identified as a major issue for innovation and responses to such scarcities have been greatly conceptualized through the terms like bricolage and improvisation (Basu et al., 2013). However, the idea of frugal innovation derives opportunities from scarcity. Additionally, the idea of sustainable development is highly debatable with the essence of vagueness in its definition, the research will use the definition coined by the World Commission on Environment and Development that defined sustainability is a process of meeting the needs of the present generations without compromising the meets and needs of the future generations (WCED, 1987).

Research Aim

The research aims to ascertain the impact of frugal innovation on social sustainability in the Gulf States. For this purpose, few research questions have been formulated.

Research Questions

1. What is the impact of frugal innovation on social sustainability in the Gulf States?
2. How can frugal innovation be used to enhance the idea of social sustainability in the Gulf States?
3. What are the benefits and challenges of using frugal innovation on social sustainability in the Gulf States?

Significance of the Study

Frugal innovation has been receiving a great deal of attention from scholars, policymakers, and practitioners (Simula et al., 2015). Such innovations are assumed as key opportunities in dealing with the issues of sustainability in low-income countries (Rao, 2013). They address issues related to accessibility, availability, and affordability. Frugal innovation argues for promoting sustainability, but there are not many studies supporting this argument. Additionally, conducting research on Gulf States that are not low-income countries is of great significance considering the fact that, it contradicts the basic premise of frugal innovation aimed to address constraints related issues in countries lacking accessibility and affordability (Horn and Brem, 2013). One of the key issues related to sustainability is in the form of measuring the impact of sustainability. The research will address this issue by analysing the Sustainable Development Goals (SDGs) proposed by the United Nations by comparing frugal innovation against solutions that are used to enhance the idea of social sustainability (Brem and Ivens, 2013). For this purpose, the appropriateness of sustainability indicators will be analysed in regard to frugal innovation.

The significance of the study is also from the perspective of highlighting the relevance of frugal innovation to two of the most major global development opportunities trends in the form of the 3rd and 4th industrial revolution and global population dynamics attracting new research works on frugal innovation and development (Lundvall et al., 2011). The 3rd industrial revolution is the shift from mechanical to electronic technologies through the adoption of digital computer while the 4th industrial revolution Is related to creating a world where virtual and physical systems can co-exist through active cooperation in a flexible manner (Leliveld, 2017). This helps in absolute customization of products and services and the creation of new operating models. Additionally, there is another global trend that will lead to the developmental relevance of frugal innovation in the form of population dynamics (Nakata and Weidner, 2012). There are three sub-trends in the form of urbanization, population growth, and displacement because of natural calamities and turmoil (Rao, 2013). All these factors are crucial to frugal innovation and social sustainability, and the proposed research work will analyse them critically that adds to the significance of the study (Zeschky et al., 2011).

Literature Review

Introduction

The literature review demonstrates that the research question is anchored in contributing to the body of literature. It also demonstrates awareness of past research along with discussing the analytical summary of the current knowledge. The general theoretical framework is also discussed.

Literature Analysis

The interest of a number of developmental scholars for frugal innovation was influenced by the discourse that originated from the idea of Bottom of Pyramid (BOP) in innovation management in the early 2000s (Prahalad, 2011). The discourse suggested that business can create value by serving to BOP representing the micro consumers. This required products and services to be cheaper and affordable, with a better degree of functionality (Rifkin, 2011). The initial idea was based on "doing more with less" that has been further replaced by "doing better with less". However, this discourse attracted severe criticism. Bhaduri (2016), Dolan and Rajak (2016) and Meagher and Lindell (2013) questioned the assumption of destining products and services for low-income people would lead to solutions for developmental problems. Leliveld (2017) further added that informal economic spheres are often less studied but have the ability to offer more insights on factors determining the success or failure of frugal innovation. Nakata and Weidner (2012) further added that major challenge is in the form of offering sustainable innovations compatible with various circumstances related to middle- and lower-class income group. From the theoretical perspective, this could lead to a critical discussion on agency and competitive advantage to innovators in local communities as they have a high degree of tacit knowledge on local preferences and requirements (Zeschky et al., 2011).

From the technological perspective, the 3rd and 4th industrial revolution marked with the rise of disruptive technologies like digital computers, Internet of Things (IoT), Virtual Reality

(VR), Artificial Intelligence (AI), and robotics have been changing the way people are living and interacting with their environments (Chataway et al, 2014). However, technology diffusion and adoption are costly, and the speed of absorption is dependent on the ability of local firms. However, the rise of digital technologies like the internet, mobile phones, and analysis of data and information in developing countries has offered a fresh perspective on frugal innovation (Dolan, 2013). The number of internets and mobile users have increased dramatically all across the world, along with other digital technologies.

Such technological developments from a frugal innovation point of view are highly beneficial (Rao, 2013). A number of products and services can be made frugal by using technologies. For example, replacing a thermometer with a smartphone application helping in measuring the body temperature (Dolan, 2013). The fixed cost might be high, but marginal cost is manageable, leading to better returns making products and services more affordable. However, the World Bank (2016) has predicted that the effect of technologies on lower and middle-class income group has fewer digital dividends that are not spread equally. Considering the fact that majority of the frugal innovations are built upon digital technologies, there is a need for critical research on who receives the advantages of such innovations and what can be done with such benefits especially in regard to social sustainability (Hahn, 2012).

In regard to population dynamics revolving around the idea of urbanization, population growth, and displacement because of turmoil, it can be said that these dynamics are related to frugal innovation in many ways (Lundvall et al., 2011). The fact that there will be an increased interest in frugal products is justified because of the rising population (Prahalad, 2011).

With an expected growth in the world population and increase in the living standards of people, the BOP market is also expected to increase being constituted by the low and middle-income group (Radjou et al., 2012). People belonging to such income classes are also expected to show

a willingness to spend on quality products and services providing the fact that they are suitable and have high quality with a reasonable price (Nakata and Weidner, 2012).

Overall, it can be said that the changing innovation landscape is triggered by global diffusion of a number of digital technologies and there are increasing challenges related to population dynamics raising questions on implications of innovation and development trajectories along with finding an answer on the role of frugal innovation in the Gulf States. This can offer a new impetus to the existing body of knowledge.

Methodology

Introduction

The chapter presents an overview of the methodology by addressing key elements like the research philosophy, approach, data collection tools, time horizon, sampling, and validity and reliability in a critical manner.

Research Philosophy

Research philosophy illustrates the source of the development of knowledge. Positivism and interpretivism are two major research philosophies. The positivism philosophy supports the existing truths and realities without contradicting them (Booth, 2008). It is driven by factual knowledge where findings are observable and quantifiable. The role of the researcher is independent, and there is no provision for human interest (Babbie, 2010). On the contrary, the interpretivism philosophy is driven by the idea that realities are not fixed in nature and should be questioned as they are impacted and influenced by the changes in the views and perceptions of people (Creswell, 2007). It also integrates human interest in the studies and focuses on generating new realities through the social construction of shared meaning, ideas, and language. This philosophy uses interviews and observational studies as a mean to collect data along with paying equal attention to secondary data (Fetterman, 2010). Additionally, meanings emerge towards the end of the research process. The researcher believes that the use of the interpretivism philosophy would be ideal for ascertaining the impact of frugal innovation on social sustainability in the Gulf States. This can be done by formulating interview questions that would be helpful in gaining new insights on the research topic. It would also be helpful in generating new realities rather than accepting the old and known realities. The reason behind rejecting the positivism philosophy is driven by the idea that it limits the role of researchers along with offering lesser value to human interest. As the study focuses on human interests, the interpretivism philosophy is ideal (Patten, 2007).

Research Approach

Research approach illustrates how data can be collected, analysed, and interpreted. There are two major kinds of the research approach. The major feature of the inductive approach is generalization while deductive approach focuses on specific issues. The inductive approach is driven by the qualitative perspective, where the focus is more on observations and interpretations (Denzin and Lincoln, 2011). The deductive approach is driven by the quantitative analysis with a focus on testing hypotheses and interpreting quantifiable data. The researcher will be using the inductive approach where the qualitative analysis will be favoured using interviews to answer the research question (Babbie, 2010). The reason behind not preferring the deductive approach is based on the idea that the researcher wants to focus on the qualitative and theoretical aspect of frugal innovation and social sustainability rather than quantifiable findings. The views and opinions of the people matters and therefore, an inductive approach based on the qualitative analysis is preferred.

Data Collection Methods

The researcher will be using primary as well as secondary data for answering the proposed research question. Primary data will be collected through interviews on entrepreneurs focusing on frugal innovation in the Gulf States. They will be interviewed in terms of seeking their views and opinions on the impact of frugal innovation on social sustainability. The interviews will also be helpful in observing the views and opinions of the research participants. The use of surveys could have been a possibility but considering the fact that surveys do not lead to face-to-face interaction and fine observations. Therefore, interviews are considered. Even though interviews are time taking, they tend to be more expressive, illustrative, and extensive in nature. The researcher will also be using secondary data based on existing research works of Bhaduri (2016), Dolan and Rajak (2016) and Meagher and Lindell (2013), Prahalad (2011), Rifkin (2011), Dolan (2013), Rao (2013) and many more.

Time Horizon

In terms of the time horizon, both cross-sectional and longitudinal studies are termed as observational studies. For this purpose, information is recorded without manipulating the research environment (Leedy and Ormond, 2005). Cross-sectional studies focus on comparing different samples at one point of time and findings are drawn within that timeframe only. On the other hand, the longitudinal study is also driven by observations where several observations are conducted over a period of time that can last for years (Fink, 2005). The researcher will be using the longitudinal study as frequent and regular findings are required to analyse the impact of frugal innovation on social sustainability. The overall time period will be 2-3 years that will allow having multiple observations on the research issue.

Sampling

Snowball, convenience, and random sampling methods are some of the key sampling tools and techniques. The researcher will be using the snowball sampling method, where research participants are recruited among the acquaintance (Patten, 2007). It is a non-probability sampling method that is based on the referral system. A chain of people is formed having similar characteristics, and their views and opinions are recorded (Saldana, 2009). The researcher will be recruiting a few known frugal innovators who will later recruit a few more in order to achieve the sample size of 50. These people will be further interviewed to gain insight into the research issues for answering the research question. The reason behind not choosing the convenience and random sampling method is based on the idea that people having an understanding on frugal innovation and social sustainability are required as the research participants, and the stated sampling methods ignore identifying people with similar characteristics (Sanders, 2010). Therefore, in spite of the snowball sampling method being subjected to bias, the researcher will be using it as it has the ability to form a sample sharing similar ideas and beliefs.

Validity and Reliability

Validity is the extent to which research instruments measure the outcome of the research and reliability is the degree to which consistent results are formed (Babbie, 2010). In regard to validity, only authentic sources will be selected for the research work. The focus will be on recruiting valid research participants (Fetterman, 2010). Additionally, reliability will be maintained by triangulating data and information. The findings of the interviews will be triangulated with the findings of the literature review (Patten, 2007). This will help in adding a required degree of reliability to the research work.

Analysis

The researcher will be using the qualitative analysis for analysing the results of the interviews. Thematic analysis will be further performed using NVivo software that will lead to the generation of codes, themes, and nodes. All these themes, sub-themes, codes, and nodes will be analysed qualitatively that will help in answering the main research question (Fink, 2005). Additionally, the analysis will also be driven from the perspective of literature analysis that will be based on theoretical assessment and analysis. Overall, a qualitative approach embedded with theoretical analysis will be used in the proposed research work (Creswell, 2007).

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