Return Migration to India: Decision-Making among Academic Engineers and Scientists

Meghna Sabharwal* and Roli Varma**

ABSTRACT

The decision-making process among migrants, whether to leave their country of birth for a foreign country or deciding to return to their native country is complex and laden with challenges. This article seeks to understand the decision-making process by which immigrant engineers and scientists select to return to India after study and work in the United States. It is based on in-depth interviews conducted with 54 returned engineers and scientists. Results indicate that the decision to return is anything but a linear process as highlighted in rational choice theory. Prospect and planned behaviour theories are better positioned to explain the decision-making process among returned migrant engineers and scientists.

INTRODUCTION

International migration from developing to developed countries is seen as a one-way move. However, there is increasing evidence of return migration from developed to developing countries, which makes international migration rather dynamic. Migration is a complex decision, however, the choice to return to one's country of origin can be even more daunting and complex (Şenyürekli and Menjívar, 2012). Most decision-making models for migrants focus on the decision to immigrate; there is, however, a gap in the research examining the decision-making process of reverse migration. Moreover, most research investigates the motives of return rather than the individual decision-making process, which can be conceptualized in three phases: pre-decision, the decision itself and post-decision. Typically, scholarly literature breaks down decision-making process into multiple steps, namely information gathering, assessing choices, the narrowing of alternatives, making a decision and evaluating the decision.

In this article, we examine one of the most important decisions taken by immigrants from developing countries; that is, to move back to their home country. We focus on return migration of engineers and scientists because they contribute enormously to the nation's prosperity, economic growth, industrial productivity, scientific discoveries, technological innovations, and overall knowledge of science and engineering (S&E) fields. We present decision-making among immigrant engineers and scientists to return to India permanently after study and work in the United States. We chose to focus on Indian returnees mainly because India has been the leading country of origin among immigrant engineers and scientists in the US In 2013, India accounted for 20 per cent of the foreign-born holding a science or an engineering degree and 14 per cent of those holding doctorates in the same fields in the US (National Science Board, 2016). The US, therefore, relies on these individuals for its S&E and human capital needs. In recent years, there has been a noticeable

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 * University of Texas, Dallas
** University of New Mexico, Albuquerque

trend of return to India among immigrant engineers and scientists holding doctorates (Finn, 2014). Yet, there is limited research on the return migration of Indian engineers and scientists working in the academic sector; existing studies have focused on the US industrial sector (Saxenian, 2005; Wadhwa and Salkever, 2012). Decision-making to return to India is likely to be different for engineers and scientists working in the industrial and academic sectors. It is, therefore, important to understand the decisions underlying return for this group of academics.

We assume that Indian immigrant engineers and scientists have an immigration history, and at various stages in their career decided whether to stay in the US or to return to India. They revise their decision based on information available to them on economic, social/cultural and political factors prevalent in both countries. The article is based on a qualitative empirical study conducted in 2013, which is elaborated in the methodology section. It situates the decision-making process among Indian returnees within the framework of normative and descriptive theories of decision-making, which are outlined in the next section.

DECISION-MAKING THEORIES

Decision theory is defined as "the study of principles and algorithms used for making decision. This is achieved by identifying values, uncertainties and other things that might influence the decision" (Ahmed and Omotunde, 2012, p. 51). There are various theories of decision-making presented in the literature. Most are classified into two types: normative and descriptive theories. Normative theories explain how decision should be made and descriptive theories explain how decisions are actually made (Oliveira, 2007). Rational decision-making theory is normative in nature indicating the various steps that an individual should take into consideration while making a decision. Prospect and planned behaviour theories are descriptive focusing on psychological factors in decision-making.

Rational Choice Theory

Rational choice theory's basic premise is that individuals act rationally while making a decision; when confronted with a dilemma, they rationally choose between a set of alternatives, within the opportunities offered or constraints imposed to them by the environment (Simon, 1979; Scott, 2000). Rooted in economics, rational decision-making theory assumes that people will weigh the costs and benefits of the expected outcomes of a decision, and have all the necessary information in order to make the final choice. Typically, rational choice involves the following steps: (i) identify the problem, that is, to know what the decision would achieve; (ii) generate alternatives, that is, come up with multiple alternatives by collecting necessary information and listing pros and cons of each alternative; (iii) select a solution, that is, rank the various alternatives and their consequences in importance to select the best one; (iv) implement the solution, that is, take the action to execute the decision; and (v) evaluate the decision taken, that is, determine if the action got the desired outcome. It is proposed that the option with the highest value is selected.

Critics, however, question the assumption that the decision process is sequential, in a sense that people will follow all the steps of the rational process; instead, they hold that human behaviour is much more complex. They argue that rational decision-making theory lacks the ability to provide a realistic basis for understanding human behaviour, and explain its inherent uncertainties or inconsistencies (Herrnstein, 1990). Furthermore, rational decision-making theory does not take into account any "unanticipated consequences", given that humans are considered to be able to accurately predict the outcomes of their decisions/choices (Muntanyola-Saura, 2014). Overall, the theory is often regarded as lacking the power to explain how individuals' behaviours and preferences are shaped (Dietrich and List, 2013).

Rational choice theory has been frequently used in migration studies (Haug, 2008). Migration or reverse migration is regarded as a rational decision that will bring the most benefit (maximize the expected utilities) to the individual. Tunali (2000) notes that individuals rationally decide to immigrate, by evaluating the costs and benefits and eventually choosing the option that is anticipated to bring most earnings. Similarly, Ryo (2013) explains that migrants are seen as rational actors, as their decision to immigrate is the result of a cost-benefit evaluation.

Prospect Theory

Prospect theory, developed by Kahneman and Tversky (1979), explains decision-making under risk. It explains individual decision-making as a function of weighing the gains and losses accruing from making a certain choice. It includes two phases to explain individuals' choices, the editing and the evaluation. In the editing phase, individuals simplify their choices by framing them as losses or gains based on their own preferences, biases, and expectations, and comparing them to a certain (neutral) reference point. They decide on the basis of four operations: coding (the weighing of gains and losses related to a certain choice in respect to a reference point), combination (consideration of all chances of achieving the most preferred outcome), segregation (distinguishing between the risky and non-risky elements of the decision outcomes), and cancellation (ignoring the common characteristics of the choices related with the gains or losses) (Edwards, 1996; McDermott, 2001). The evaluation phase refers to how risk-taking individuals are in terms of their decisions (value function); in other words, how risk-seeking one is depends on whether one considers the outcomes of his/her decision as a gain or a loss (Mercer, 2005).

Prospect theory is highly regarded in the study of human behaviour, resulting into a Nobel Prize in economics to Daniel Kahneman. Edwards (1996) notes that individuals undervalue outcomes that are less certain, as a loss, whereas they overestimate the more certain decision outcomes as sure gain. Thus, when there is a gain prospect, people tend to be risk-averse, whereas they become more risk seeking when faced with a loss prospect (McDermott, Fowler and Smirnov, 2008). In order to avoid the losses related with certain choices, individuals become more risk-taking. On the contrary, when a prospect is framed as a gain, individuals assume less risk as this choice/decision is closer to the identical outcome, as they envision it (Mercer, 2005). Recently, the prospect theory is applied in the study of immigration (Mathias, 2015).

Planned Behaviour Theory

Developed by Ajzen (1991), the theory of planned behaviour is one of the most popular psychological decision-making models, which provides a conceptual framework for understanding the relationship between attitudes and behaviours, and predicting behaviours and decisions. It postulates that the intention to perform a specific behaviour is dependent upon three sets of beliefs: behavioural, normative and control. The behavioural beliefs are related to positive or negative attitudes over the expected outcomes of the behaviour; the normative beliefs refer to the social expectations and subjective norms attached to the behaviour, and the degree that the social/external environment approves or disapproves of the specific behaviour; and last, the control beliefs, refer to the factors that facilitate or hinder performance of a behaviour, part of which is the perceived control over the behaviour and expected level of difficulty of performing the behaviour (Conner and Armitage, 1998; Ajzen, 2002). The attitudes toward the behaviour, subjective norms and perceived behavioural control, serve as antecedents of the behavioural intention, which eventually become the best predictor of the actual behaviour.

The theory explains that the perceived behavioural control becomes more salient as the individual's volitional control over the actual behaviour declines, whereas it becomes less critical when

there is a strong intention to perform the behaviour, which will very accurately predict the actual behaviour (Ajzen, 1991). The argument is that the higher the degree of perceived control over the behaviour, the greater is an individuals' intention and likelihood of performing the actual behaviour; in other words, the more control individuals believe they have over the behaviour, the higher is the possibility that they will succeed in performing it (Ajzen 2002; 2006). The theory of planned behaviour is useful in the study of return migration since human intentions and behaviours hold an important place in migration decision-making (van Dalen and Henkens, 2008).

METHODOLOGY: A QUALITATIVE APPROACH

This article is from a larger National Science Foundation funded study on the return migration of faculty in S&E from the United States to India. We selected the US as the choice of host country since it is the preferred destination for engineers and scientists coming from India to advance their education and work (Varma, 2006). We chose India because it has been the leading country of origin among immigrant engineers and scientists in the US (National Science Board, 2016). Yet, in recent years, the US has witnessed return migration of Indian engineers and scientists holding doctorates (Finn, 2014). We focused on the academic sector because scholarly as well as media attention on the return migration has been on the industrial sector.

In 2013, we conducted in-depth interviews, specifically on decision-making to return to India, with 54 subjects from 14 institutions of higher education that grant four-year bachelor, master and doctorate degrees in S&E. These institutions are located in seven Indian states, which gives a broad representation and geographic mix. The names of the institutions are not provided to comply with the Institutional Review Board's (IRB) requirements for anonymity of participants. All but three returnees received a PhD from a US institution in science or engineering with a minimum of five years' experience mostly in academia, before returning to India.

A semi-structured interview guide was used to conduct face-to-face interviews, which lasted anywhere from an hour to two hours. The interviews were recorded, transcribed and inserted in NVivo for analysis. Two independent coders coded the data. Frequency and percentages were calculated after responses were coded into categories to show the strength of each category. Since this is a qualitative study, a narrative approach was used to draw out complex motivations to return. Findings are presented with interview excerpts to show the complexity of categories. Of the 40 questions (excluding demographic questions) asked in the study, three questions specifically pertained to this article: (i) How did you decide to move back to India? (Explored when they started to think about returning to India, how long they took to arrive at that decision, and whether it was a difficult decision to make) (ii) What are major challenges you faced after returning to India? (iii) Have you regretted your decision to return to India?

At the time of the interview, a majority (93%) of the returnees were employed at public institutions, while the remaining worked at private institutions (7%). Close to half of the sample (44.4%) were under 40 years of age, while 28 per cent of the were in the age group 40-49, more than one-fifth (22%) belonged to age group ranging from 50 to 59 and a mere 5.5 per cent were 60 years and over. More than one-third of the returnees were full professors (39%), approximately one-fifth were associate professors (18%) and almost close to half were assistant professors (43%). Nearly 54 per cent of them were working in various engineering departments: aerospace, civil, computer, electrical, environmental or mechanical, while the remaining worked in biology, chemistry and physics departments. Almost all of them were married (95%) and more than two-thirds (68%) had children. While in the US, a large majority of the returnees were on temporary visa (82%) and the remaining had permanent residency/green card. On average, these returnees spent 9.5 years in the US before they decided to leave, and were in India for more than five years post return (average of 10.5 years). On average these returnees have spent close to 14 years in academia. The

overwhelming majority of them was male (78%) in the sample; this study, therefore, does not take gender into consideration.

It should be noted that it is difficult to know how representative the sample is of returnees. The United States Citizenship and Immigration Services (USCIS) only tracks individuals coming into the country and has no record of those who leave the US Additionally, the goal of qualitative studies (unlike quantitative) is to provide an understanding of the shared human experiences through in-depth study of a small number of participants (Polit and Beck, 2010; Creswell, 2012). We know that an increasing number of Indian engineers and scientists are moving back to India to work. However, we do not know why this is the case, which this qualitative study seeks to address. Nonetheless, a larger study needs to be undertaken to make generalization on how selection is made among engineers and scientists to return to India.

FINDINGS

Making a Decision to Move Back to India

Initially, most returnees (73%) considered themselves sojourners, that is, they decided to be in the US temporarily; they always intended to return to India after their period of study in the US was complete. Coming to the US was a stepping-stone in acquiring an education. Some returnees even stated that it was the general understanding among their peers that once their period of study was complete, they all would return to India to work, live, and be close to family. The reasoning behind this conviction appeared to be a mixture of familial responsibilities and a general attachment to their home country.

However, once in the US they changed their mind or questioned their initial decision. The reasoning for this varied greatly, but it tended to be dependent on having a job position lined up in the US and starting a family there. Many returnees established a career and family in the US. Some returnees actually expressed hesitancy in returning to India due to family and job stability in the US. Some returnees (27%) actually never intended to return to India. Instead, they wanted to explore options in the US or simply enjoy life there after settling down with a job and family. In fact, a handful of them thought it would be difficult for them to adjust in India and work there. Yet all of them returned to India.

Almost half of returnees (47%) discussed the availability of attractive jobs in India or a position they were offered that influenced their decision to return. Many actually waited to return until they had a job offer in India, which is often what made the move possible in the first place. Some felt the job market was better in India than in the US. Others said they preferred the job stability in India as opposed to in the US, wherein job security was only possible after receiving tenure (usually after six years in academia). A few returnees were dissatisfied with their current position in the US and opted to find better work in India. All in all, it seems the perception of available opportunities and job positions in India were extremely influential in persuading many to return. About one-third of returnees (29%) discussed how they enjoyed India socially more than the US. They remarked that they wanted their children to grow up with a strong sense of "Indian-ness." For some, family was an important factor that influenced their decision to return to India. Often, returnees stated that the realization that their parents were getting old and the feeling that they should be there for them influenced their return. Others simply stated that they wanted to return to be closer to family due to difficulty of travel for both parties and general issues with communication across such a vast distance. Finally, about one-fourth of returnees (24%) discussed immigration problems they faced in the US, and the easiest way to deal with them was to move back to India. Typically these problems centered on their spouses' visa status because of which they could not

work in the US. They found the visa processing as an annoyance. Below are some interview excerpts:

> "I definitely wanted to come back. I think almost all Indians who go [to the US] think that they want to come back at some point."

> "I had no plans for coming back. I was simply looking at where the good opportunities are for doing the kind of work that I do. At the moment, the job market was really bad in the US And things looked really bright [in India] so we decided to move."

> "India was growing, lots of investment in infrastructure, lots of investment in academic institutions . . . [This institute] was setting up a new school. They were looking for talent. Here was a chance for me to come and actually leave a footprint. Where do you get a chance like that?"

> "It started growing more and more forceful in my mind, after I had kids . . . I would see Indians who were settled in West Indies . . . these people for 10 generations had not seen India, yet somehow they would cling to some Indian-ness of theirs, where the Indians themselves would actually shun them . . . I did not want this for my kids."

> "Actually I did not want to return to India, to be honest. My dad actually fell sick. He is not well right now too. So I thought well I cannot ignore this anymore."

> "I think things changed a bit primarily because I was not getting the Green Card [permanent residency]."

> "My wife could not work. She was on a dependent visa, so she was not able to work in the US"

Once the thought of moving back to India re-entered their mind, most returnees (78%) decided rather quickly to implement that decision. However, they had to wait to be offered a suitable job in India. Even those with ailing parents waited until they received an offer from India. A few returnees were recruited by people in India, which accelerated the emigration process. It should be noted that most returnees appeared to find a job in India with relative ease, but a few remarked on the inability to find a position that completely suited them. Significantly, many returnees discussed their negligence in renewing their visa or applying for a permanent residency card when they were thinking of returning, marking a distinct moment wherein they decided to leave the US. Some returnees (22%) indicated that their decision to return to India was a gradual process. Few of these returnees had permanent residency in the US, so they were not in any rush to move to India. Below are some examples:

> "Basically we kind of made a spontaneous decision. So I got a 2-year leave of absence from [the US university], which is over now, I said no to that option."

> "When I visited [Indian institute], I was told about a job opening . . . And up until that point I had not thought of working in India. But than the more I thought about it, the more things seemed to make sense."

> "In a conference in Boston . . . . you have a panel of people who came from India to recruit . . . They let people know what it means to be in India, what are the funding resources . . . I think they get 400 to 500 applications across US . . . And then they handpick like 40 . . . All those selected can come back to India to take up positions . . . This is how I came."

A majority of returnees (67%) described their decision to return to India as not a difficult one. For them, returning to India after their time in the US seemed natural. Several factors

overshadowed any doubts they may have had, such as finding a satisfactory job in a prestigious institute, being united with family, living in an ideal location, having a better place to raise children, being able to engage in a personalized social life, and not having to deal with an immigration or visa system any more. While spouses and children may have made the decision to leave more difficult, some returnees described their spouses as being supportive of the move. Some spouses could not work in the US due to visa restrictions, thus felt the move as beneficial to them. These returnees moved while their children were still young so they could adjust to the transition without many difficulties. Some of the respondent indicated:

> *"It was very much heart driven, not brain driven. So, it was easy."*

> *"It was a very easy decision to take . . . I am actually building an institute. I am basically planning the future growth. I am projecting what the campus will look like, five or ten years down the road . . . The money is from the ministry and they are willing to take a chance on someone like me."*

> *"No, considering family that is already [in India] and immigration status [in US], it was not difficult at all."*

> *"I think that the decision factor was that I, in the US, in academia, will have to go through tough tenure process . . . In India, it is much easier."*

> *"It was not a problem to make that decision . . . My wife could not work. She was on a dependent visa, so she was not able to work in the US"*

> *"I felt that every time my mother needed to come or my in-laws needed to come the immigration situation was very complicated . . . They were not feeling very comfortable going and coming."*

The remaining returnees (33%) found the move to India somewhat difficult. There was general unease with the state of academia in India despite the fact they preferred their Indian academic posts over those they held while in the US. There was also a concern whether their family will be able to adjust to life in India. They discussed the stability of their professional life in the US. Some of them had tenured positions in the US, which are hard to come by. Others talked about possession of grants for research in the US, which are very competitive to get. A few faced difficulties due to stable family life in the US, which was disrupted with the move. For some, it centred on a child who had already settled into the US lifestyle. There was concern whether children would be able to adjust to life in India. A few returnees said that difficulty was due to their spouse's reluctance to move to India. Below are some interview excerpts:

> *"For me the complication was at a different level because my husband who was also a graduate from [American university] decided to stay back in the US So he now works in the Industry in US"*

> *"What was difficult for us was to find suitable positions in India. So that was the hard part."*

> *"I don't think it was an easy decision either. Because a bunch of my friends stayed back in the US and when I moved back I really didn't have any role model [in India] . . . And the Indian academic system was still unknown to me."*

Evaluating the Decision to Move Back to India

Although these returnees grew up in India, they were in touch with family members and friends via telephone and/or social media, and often made trips to India while studying and working in the

US, all but six described a variety of challenges which they experienced upon returning to India. These challenges were at professional, administrative, social/cultural, educational and gender levels.

As noted earlier, many returnees moved to India for better career prospects; however, most (53%) experienced varied constraints to conducting research and teaching. There was a general recognition that things move rather slowly in India, which is due in part to bureaucratic obstacles. One of the greatest challenges facing many of the returnees interviewed was the need to obtain administrative approval for research equipment. This approval process was seen as an unnecessary impediment to research. Once approved, it still takes a long time due to getting companies to ship materials on time or issues with customs if they are coming from other countries. So, they have to do a lot of advanced planning to begin any elaborate experiment. Several returnees stated that when they first started, their lab space was not established and they had to work hard to set it up. A few also felt challenged by the expectations of the institution to share lab spaces. Some returnees noted that research is not taken seriously in India, unlike in the US. They stated that India likes to do research, but does not fully understand how to create a positive research culture. Some returnees said that they face problems in building research collaborations. According to them, people in India like to collaborate but do not follow-up on collaborations. Building collaborations inside India has been a problem for female returnees due to their gender. Female returnees also discussed how they have to assert their abilities and get themselves recognized among colleagues. There are also challenges with students and their level of readiness for research. These challenges are highlighted below:

> *"Research-wise a lot of challenges. Research is constricted; there are so many constraints, lab space, equipment, and infrastructure wise."*

> *"In India, there is a lot of bureaucracy involved. For example, if I want to buy a piece of equipment, I have to go through a tendering process, which takes quite a bit of time, whereas in the US, for small things, I could just order it online and get reimbursed."*

> *"The professional help is not conscious of time … Even the lab technician, you expect some professionalism from him, you expect a certain set of skills and you expect that you will pass on your gift of message and he will take care of the details. That would not happen."*

> *"In America, science is honest. But in this country, everything is corrupt, including science."*

> *"As a woman, I have to work much harder to be recognized that I am part of the engineering community."*

> *"Collaborations wise, US has gotten a much more conducive environment and [in India] the collaboration is a little bit difficult, it takes a lot of time."*

> *"It is related to mindsets about women … People just did not collaborate with me … did not discuss science with me … I felt very isolated and alone … I dealt with it by finally establishing collaborations abroad. So I collaborate more with people abroad than I do with those in India."*

Over one-third of returnees (36%) faced a few challenges when they returned to India in terms of general living adjustments. Several basic things such as telephone connection and gas for cooking were not easily available to them. Electricity often fluctuates and power cuts are common in India. They felt that there is chaos in the Indian society. Pollution, noise and crowd were issues for many. Pollution became a health problem for some. A few returnees stated that their children could not adjust to the pollution in India so had to see a doctor. In terms of education for their children, they faced problem in finding a suitable school. They also felt that the school system in India is more intensive and competitive than in the US. Because a handful of returnees were not culturally

rooted in the area they relocated to, they also faced regional and language challenges. A couple of returnees felt that the people in India are extremely conservative. Female returnees noted they are treated differently and not allowed to do certain things due to their gender. It is a social challenge for them to make friends and establish connections especially since male and female colleagues do not socialize outside department. Below are some interview excerpts:

> *"Things take more time here. It took me three years to set up a lab, while it would have taken one year in the US Structures are not in place in India to make things happen quickly."*

> *"The first year was pretty tough and everything is so slow. Things that you take for granted in US were not [in India] . . . [In US], you make a telephone call and it is done . . . For everything [in India], you have to go through applications and then figuring out when the connections will come . . . it is unproductive time."*

> *"Well just the day to day life can be quite difficult . . . . power won't be there sometimes, water won't be there . . . or phone lines won't work."*

> *"The three Ps: population, pollution, politics."*

> *"Health was the biggest. We used to get sick every week, my wife, my kids, me. Almost every other week, the doctor was so fed up with us (figuratively speaking) because we just kept going back!"*

> *"I think the one thing that both of us faced was the schooling of the children. My oldest son was in the 5th grade when we returned. He had a hard time to adjust to Indian schooling which is quite different."*

> *"It is non-academic. After I joined here I wanted to live in the nearest town so I was looking for homes to rent and there were two owners who refused to rent out to me just because I was a single working woman."*

Yet, in response to the question whether they have regretted their decision to return to India, a large majority of returnees (63%) provided a negative response while a few (4%) believed it was too early to draw any conclusion. The reasons for their satisfaction in moving to India centred on: academic positions in well-known institutes/universities in India; making a difference for India or in the lives of some people with their work; living in Indian society close to family members; and dissatisfaction with work/life/immigration in the US, as noted earlier. Many returnees stated that they did face adjustment problems in the beginning, learning to cope in the Indian academic setting and fitting in with Indian society and culture. The length of residence in the US seems to be related to the adjustment issues of returnees. As soon as they were able to readjust, they endorsed their decision to return. Below are some interview excerpts:

> *"Never regretted. No, never regretted."*

> *"No, I do not regret – actually, to be honest may be first two years I did, when it was really was tough . . . I wish people had mentored me more and helped me more to make the transition easier, but in the end it worked out."*

> *"I feel fortunate, not just satisfied. I went to the best institution in the US and I am in the best one [in India]. Absolutely have never regretted my decision to return."*

> *"I have not regretted my decision to return . . . Now, I have everyone close to me, my parents, brother, sisters, aunts, uncles, their children."*

"When I was reading about the NSA (National Security Agency) and their reading all the emails, I was happy that I came back."

One-third of returnees (32%) stated that occasionally they would have mixed feelings about their decision to return to India. Only one returnee (1%) regretted his decision to return to India. Most of the returnees' mixed feelings centred on the lack of a productive environment for research and professional growth in India compared with what the US has to offer. Although excited to be a part of rebuilding S&E programmes and training the next generation of students, they also believed that Indian higher educational institutions lack good work ethics and basic professionalism. In contrast, the US higher educational institutions were seen as equipped with transparency and professional behaviour. According to the returnees, they had a richer and more diversified academic culture in the US than what they are exposed to in India. A few returnees stated that had they been in American universities, they would have received better guidance from their peers and that would have led to better career advancements. Some returnees complained about the general infrastructure in India (including roads, traffic conditions and pollution) which they took for granted in the US. A few simply missed the American lifestyle and varied cuisines. It is interesting to note that some of spouses who were so keen on returning to India for its social milieu had expressed regrets since they had more independence in the US than in India. A few returnees felt they had idealized Indian schools for their children, unrealistically. Example interview excerpts are highlighted below:

"I like to work here. But, from a scientific and intellectual point of view I find the American society is a very vibrant society. One can draw up a lot more ideas [in US] than [in India]. You only see the same faces and same talks over and over again [in India]."

"It has worked out for me. But, there is a lot of room for improvement. For example, there are lots of people and great demand for tools but we don't have enough."

"I am more or less happy. But, I am sure if I sat with some of my peers in the US who had that two or three year uninterrupted stint, they will be miles ahead of me in terms of research."

"I would say I am satisfied. But when I think about general ease of life, peace of mind, and infrastructure issues, then I think it might have been better if I had stayed [in the US]. But again there is always a choice and I made this choice."

DISCUSSION AND CONCLUSION

In the past decade, there have been several studies expanding on the decision-making process and motives to migrate; however, there have been very few that help explain reverse migration. This study used three key theories of decision-making (rational choice, prospect, and planned behaviour) to understand the decision-making process among engineers and scientists who decide to return to their country of origin. This articlepresented the decision-making process of engineers and scientists to move back to India after study and work in the US It analysed in-depth interviews with 54 returnees.

Overall, the findings of this study indicate that the decision to return to India after study and work in the United States is not a linear process. The complexities involved cannot be whittled down to costs and benefits. According to the rational choice theory, returnees make a decision (i.e. to return) after weighing all possible alternatives and choosing the one with the highest value. This study has shown that the returnees did not have all the necessary information to return, they did not carry out any analysis of their decision, and they did not consider competing alternatives. The

decision to return to India was complex and there were limits placed on them to make a completely rational choice. They did not seek to optimize benefits while minimizing costs; instead, they chose an acceptable option to return to India rather than the optimal one. Furthermore, they had limited knowledge about the outcomes of such a decision; they were neither certain nor able to predict accurately that returning to India would indeed be an optimal choice for them. Making such an important decision entailed a level of risk and uncertainty for the returnees, which the rational choice theory did not take into account. This does not mean that Indian engineers and scientists did not employ rationality in making the decision to return to India. The study shows that their decision was somewhat limited by the information they had about the return and resources available to them. This study, therefore, finds some support for Simon's (1979) theory of bounded rationality – people apply rationality to a set of options that have been restricted in the absence of full information.

The prospect theory is an alternative theory of how people make decision. It relies on probability to describe outcomes rather than assuming that people will always know all possible outcomes to select the optimal outcome. Prospect theory holds that people are afraid of losses more than they appreciate gains. As a result, they assess the probabilities of adverse outcomes more severely than their actual possible cost. This study has shown that the returnees assessed the labour market and career prospects in both countries, the US and India, to form reference points. This helped returnees to make a decision that led to what they perceived to be more gains/positive outcomes. Since Indian engineers and scientists positively framed the decision of returning as a "gain", they did not subsequently consider that decision as involving much risk. The prospect theory employs mathematical modelling in decision-making, which require a large data set to apply on migration decision-making (Mathias, 2015). The present study is qualitative, yet it shows that for Indian engineers and scientists, the decision to return was perceived as the least risky, given reference points.

Another alternative theory on decision making to the rational choice is planned behaviour theory. It explains how the expected outcome and evaluation of the risks and benefits of that outcome influence people's decision-making. This study has shown that returnees were motivated to return to India; at least the intention to return was stronger than to stay in the US. Further, their decision to return was not opposed by their peers, family members and friends. Since engineers and scientists have started to return to India, it has become an accepted behaviour. The study shows that the returnees believed they had self-control to make the decision to return. It was facilitated by a number of economic and social factors available to them in both countries, the US and India. De Jong's (2000) research on immigration decision-making in Thailand has shown that the expectations related to living in the destination country, such as living standards, social and family norms, and support networks, are critical determinants of migration decisions. By extending this argument to the study of return migration, decision-making can be regarded as a process where returnees weigh the expectations attached to their decision to stay, against those attached to returning to home countries (van Dalen, Groenewold and Schoorl, 2005). This study has shown that the returnees are positively disposed to returning to India due to better career prospects, familial bonds, emotional attachment to their home country, familiarity with the Indian life-style, as well as the fact that they have performed the same behaviour in the past (i.e. when deciding to move from India to the US). Given these characteristics, Indian engineers' and scientists' intention to return is attached to higher levels of perceived behavioural control, as this decision entails a great deal of self-efficacy and confidence. Several returnees also indicated that they had always intended to return, giving further credence to the theory of planned behaviour.

The afore-mentioned theories help to explain how return migration decisions are made, but do not describe the post-decision phase. Returnees pointed out several challenges they faced at both professional and social levels upon their return. Yet they had no regrets about moving back to India. The study shows the decision to return was attractive and beneficial for returnees and their

families. However, adjusting to the day-to-day realities and the Indian work environment made it challenging for them. It created what can be best described as a cognitive dissonance – a tendency for people to seek consistency among their views and behaviours (Festinger, 1957). If there is a contradiction between their views and behaviours, people tend to change their views to adapt to the behaviour. It is possible that returnees in this study defended their decision to return and eventually downgraded any difficulties they encountered to eliminate dissonance.

In summary, Indian academics face a combination of professional, economic, social and political factors in both countries that assisted them to make a decision to return to India. There are three different, yet overlapping, cultures or institutional contexts that impinge directly upon the perceived costs and benefits of returning to India. These are the academic culture, the bureaucratic culture, and the social culture. It is important to note that returnees do not have control over some of the factors that prompt their decision to return (e.g. visa issues in the US and or ageing parents in India), but these factors nevertheless shape their decision. Since economic opportunities remain prime for most returnees, government and institutions of higher education can provide attractive financial incentives to promote return. This will ease the burden of decision-making among potential returnees. Furthermore, if the US desires to retain the foreign talent, they can make the process of immigration to foreign-born engineers and scientists smooth. It is important to reform immigration to make it easier to sponsor family members to come stay in the US without having to apply for a visitor visa, which has limitations on the duration of stay.

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