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THE ROLE OF ORGANIZATIONAL CREATIVITY TOWARDS INNOVATIONS: A CONCEPTUAL REVIEW ON SERVICES SECTOR RESEARCH DIRECTIONS

D.M.R.Dissanayake¹ , H.L.N. Wastantha² , M.P.K.Jinadasa³

ABSTRACT

The notions of creativity and implementation are two identical activities of innovation process, and it could find different antecedents or determined indicators for an organization to spark the creativity. Both earlier researches and recently found empirical efforts have equally treated creativity and implementation as highlights of competitive edge for an organization. This study has followed a deductive approach to review different thoughts and key components of early studies to present how creativity and innovation have been examined. Accordingly, contribution to knowledge has been proposed via a critical review on literature. According to the key notions found in the study, some factors have been identified as key determinants for creativity concept including organizational climate and culture. Creativity is something done by creative people, and researchers found in aged-decades seemed guiding their works in par with this notion focusing predominantly on individual differences. Most of studies have aligned to the postulations of “creative” by extending its connection addressing how they are different from individual subjectivities, how it has centered to gain y competitiveness, connections of creativity towards environment, role of personality traits, and works styles of creative people. In brief, traditional approaches emphasized the importance of helping people to become more creative in their work

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environment and it ignored the role of the social environment in creativity and innovation which is intensively ponded in contemporarily researches. Alongside, contemporary approach assumes all humans with general abilities are able to present at least creative work in some domain provided social environment and related factors are laid as complementary integration to the system or procedures that push individual dynamics on creative behavior. This paper reviews those concepts and provides a guide to services sector organizations referring the practice –related directions to initiative service innovations. Further, paper highlights and concludes avenues to extend future studies towards service innovations by highlighting Sri Lanka as specific context.

Key Words: Creativity, Innovation, Implementation, Service Sector

INTRODUCTION

Researchers found in the domain of “innovation” had highlighted creativity and implementation as two identical activities of an innovation process with different antecedents. Both earlier researches and more recent efforts have treated creativity and implementation as connected to process, systems, leadership behavior, organizational climate and resistances and even how it leads on competitive delivery culture. A variety of factors have been identified as crucial antecedents to this integrated concept particularly focusing organizational climate and culture as key roles (Miron, Erez & Nayeh, 2004; Yuan & Woodman, 2010). Group characteristics, job requirements, and personnel attributes (Feldman & Lam, 2010) are some important factors in understanding of the contextual and individual factors that shape the innovation in organization. When treating the innovation as unitary concept, it discloses about the relationship between creativity and implementation that have been considered as separate activities as examined with unique antecedents (Axtell et al., 2006). Further, it has found studies that mentioned creativity as determined via personal and job variables which

can contribute to the implementation role of creativity too (Axtel et al, 2000). It was highlighted that autonomy and self-efficacy were strongly related to the idea generation and attending decision making as a supportive push for innovation emerged. Researches are found focusing on the nature of employee's ideas rather than quantity, for instance, Frees et. al. (1999) has conceptualized and measured creativity as number of ideas employees suggested and generated. Meanwhile, it has referred that relationship between suggestions and creativity as important force that result not only generation of ideas but also to satisfy the criteria of novelty and usefulness (Baer, 2010, Oldham & Cummings, 1996). Accordingly, some of the research works have separately emphasized innovation and implementation as broad perspectives. Researches which are based on how people effect change in organizations, had clear the arguments of how important the dynamics of people and organizational environment to motivate idea implementation in organizations (Howell & Shes, 2001). However, it has paid relatively scant attention to the outcomes of this process that is affected to find innovations or new creativeness that upgrade the knowledge existing and contribute to the outcome. Specially, we believe that conceptual review or alternative models are needed to explain the creativity as a mechanism of competitiveness resulted through organizational factors pushed by external environmental motives. For instance, service organizations need specific template to understand the key roots for service innovations compared other product forms.

Alongside, this paper discusses how different thoughts and models do explain factors and processes in formulating the niche of creativeness and the conditions that shapes it. Besides, it has focused to bring some living scenarios to support forthe theoretical contents as explanations of practical realities. In line with the said, this study presents future research directions

by postulating propositions to creativity and innovation studies with special reference to Services sectors.

LITERATURE REVIEW

As it finds in different studies, for an instance, Axtell et. al. (2006), production of ideas is a positive predictor of idea implementation that leads for effective creativity and innovation process. Therefore, innovation process of an organization needs to have research focused discipline that result ideas for effective implementation. As it demonstrates in some of the stories of global brands, for instance, Samsung company, it has major focus on differentiation through reactive strategies against Apple brand (Dissanayake & Amarasuriya, 2015). Then it postulates an argument whether Samsung follows innovation or reacting to prevailing market trends. However, this is where the thoughts of realities should be considered to demarcate what is demanded from an organization in terms of innovation and creativity. In the commercial value point of view, we suggest reactive strategies in meeting cost advantage or brand difference at a best offer may be a creative response. Meanwhile, there are many engineers who worked as designer to make creative innovations based on the trends of the market, results of the survey, technology improvements and perception of customer on the interconnectivity of the people and their dynamics organizational requirements that has devoted to do the design for the market with indifferent manner. It has affected to find a new strategy to capture the market. But that way is the best way to find differentiated innovation to the market since it verifies the commercial return at higher level of market acceptance.

However, creativity and implementation may not be as positive and straightforward as brief in the early discussion. When it refers to the

relationship between creativity and idea implementation, the notion of the production of creative ideas is far more prevalent than their conversion into actual innovations (West, 2002). Although the prerequisites for an idea to be creative, the incredulity and resistance whereas new ideas are likely to be more attributable to variances of innovation rather than to differences in usefulness. If usefulness criterion is satisfied in a new idea, the novelty aspect is to be the reason why the production lead by said creative ideas does not regularly result in their implementation. Further, uncertainty is a significant feature of the most creative idea (Wolf, 1995). Sometime uncertainty enflames disputes to those who are affected by the ideas, and those conflicts in turn may result in excessive delays in implementation (Green, Welsh & Dehler, 2003). In another preview, it seems Organizational power structures have affected to the resistance of the creativity in the organizations based on the initiatives (Janssen et al., Kanter, 2004). In contrast to the ideas of limited novelty that typically embraces within existing structures, creative ideas intend to be in line with more fundamental changes, changes in roles, power and status (Green Gavin, & Aiman Smith, 1995). Apart from that, we do postulate that creativity and innovation process need the strategic concern of resource allocation decisions alongside the organizational culture or work styles of radical readiness to disagree on even for value of an idea as it seems at a glance. Once an innovative idea is novel and inherently drilling to potential gain, it needs sponsorship and advocacy as natural mechanisms (Gree et. al., 2003). Therefore, creativity shows an extended face of difference against to the mechanisms of implementation rather than facilitating idea implementation as a part of creativity itself. It is true that creativity and innovations are well integrated but we suggest implementation as another art of the mechanism should be driven by managerial best practices. There may be bottlenecks for the creative and innovative thinking if things are initiated with mapping

implementation capabilities as the gravity of creative thinking. Accordingly, we do propose “People” are of that extended importance in the innovation process particularly for the services organization. It is rather managing or facilitating staff to come up with creative ideas, letting them to experience different delivery methods as per the consumer expectations, could inculcate creativity to lead for service innovation as one of the avenues. Alongside, future research may also focus to investigate how moderating and mediating mechanism do impact to shape the effective service innovation practices in an organization.

Meanwhile, Anderson (1992) defined creativity as “nothing more than going beyond the current boundaries, whether those are boundaries of technology, knowledge, current practices, social norms, or beliefs.” This indicates how People factor of an organization could add value to the firm’s success, and further it has mentioned the streams of economic, psychological, social and aesthetic as value adding avenues. Adding to the same, it also referred three main factors that stimulate people to become creative minds in an organization, namely; Social needs, Creativity needs, Intellectual skills.

Therefore, we suggest these three factors as the avenues that could be embedded within the employees to be creative thinkers. What matters is to make the organizational climate enabling staff to stratify those needs within result motivations them to be creative. It is critically important for services sector organizations to adhere human resource management strategies to reinforce its staff satisfying social needs, creativity needs and opportunities to use intellectual skills to spark their agility to be creative value adders to service delivery strategies.

In line with the said notions, it could find another mechanism named as component theory for innovation orientation saying creativity and

innovation comes from highest levels of the management and lower level of management via communicating and interpreting their mission and vision. The most important elements of innovation orientation are , a value placed on creativity and innovation, orientation toward risk, a sense of pride in the organization's members and significance what they are capable of doing and their offensive strategy taking leads towards the future and defensive strategy simply wanting to protect the organization's past position (Orpen,1990). Moreover, the initiative organizational supports for innovation appeared to be mechanisms for developing idea and active communication of information, rewards and recognition of creative work, fair evaluation of work including perceived failure (Mong & Cozzens, 1992).

DISCUSSION: Conceptual Review on Innovation for Services Sector Applications & Future Research Directions

The integration of creativity as a fundamental driving force for innovation process has to be critically examined fir an organization to create architecture for innovation. Specifically services sector organizations need more consumer driven innovation process to penetrate contemporary opportunities come through dynamic consumer lifestyles. As per the views of (Shalley & Zhou, 2008), creativity is resulted thorough the generation of novel and useful ideas and innovation comes through both production and creative ideas. Further, it needs to follow implementation as the second phase of innovation process. Meanwhile, it has referred that service innovation priorities as a needed mechanism for the overlaa public sector service institutes to mitigate the perceived service gaps (Wasantha, Sekak & Ghosh, 2015). Therefore, service innovation could be considered a mechanism that connects to service design and delivery perspectives which is extended to almost all the sectors including public sector institutions.

Moreover, services actor organization needs extended concern on “People” as a value creating and differentiating strategy. We do emphasize that fact that people have been considered in marketing as integral components which connects with different concepts of services marketing including service quality, service differentiation and service delivery mechanisms. Moreover, Zhou & Shalley (2010) added that idea generations initiated by employees in an organization is not always a pre-requisite for innovation. Accordingly, it has further referred that the new ideas and practices could also be produced by employees outside of the focal organization. Alongside, we highlight the notion that services sector organizations need to practice learning organizational principles where employees are encouraged as knowledge sources for new product designs and delivery mechanism apart from the role of information systems and automations found in the firms. Moreover, service innovation process of an organization should have to alert on cultural and social perspectives too. The corporate climate of an organization could facilitate the essentials to improve innovative culture. Specially, managers of services organization should be exposed to dynamic working atmosphere in facilitating management practices to encourage employees to be creative that subsequently contributes for innovations. In contrast, cultural differences may impact to shape the management practices as well. It may effect on best practices of a services organization to assist employees to expose to creativity and innovations. Adding this postulation, it was examined how differences in creativity in different cultures has significant influences on management practices (Morris & Leung, 2010; Zhou & Su, 2010). We do suggest this notion as one of the moderating effect to be examined in future research works as a mechanism of shaping the impact of organizational factors towards degree of service innovation.

Meanwhile, Bledow, Frese, Anderson, Erez, & Farr (2009a, 2009b) introduced a theory called “advocated ambidexterity theory” explaining the process of how to manage conflicting demands at multiple organizational levels to embrace innovation. Ambidexterity refers to “the ability of a complex and adaptive system to manage and meet conflicting demands by engaging in fundamentally different activities (Bledow et. al., 2009a). According to the said theory, it represents both of effective management of exploration such as creating new products, and exploitation, such as production and implementation of products. Accordingly, we suggest that service sector organization could also follow the mechanism of exploration as a practice to encourage employees and research processes to come up with new service designs and concepts. When it refers to the industries like banking, insurance, hotels and even hospitals could also come up with automated service concepts as innovations to differentiate their services brands. Further, Sri Lanka has been referred as a services driven economy and telecommunication, financial sector and insurance sector have been noticed as significant segments in the economy (Dissanayake, 2015; Dissanayake & Ismail, 2015). Services sector organizations could consider the propositions of people and technology as well-fit mechanisms of service innovation initiatives backed by consumer-driven market research practices verifying commercial feasibility. The contribution made by Bledow et al., (2009) has been referred by Rosing, Frese, & Bausch, (2011), as a valid point to consider its significance for contemporary studies.

Meanwhile, by confirming Innovation as a competitive advantage that organizations should earn to compete ahead with competitors, we claim that innovations do not limit by only creating additional value to customers but economically a competitive stance for the organizations too. Accordingly, it could found that how service innovation has been conceptualized in

different studies. For instance, service innovation has been conceptualized as service concept, client interaction channel, service delivery system or technological concept. In line with the said, it is mentioned that service innovation as a combination of deferent modification that could lead different service functions in the face of new to the firm as well as the market (Ark & Hertog, 2003).

According to the overview of the early studies, service innovations have been hypothesized with consumers' responses as dependent variables. Specially, perceived value of consumers and intention of clients to visit again have been found as conceptualized with service innovation dimensions. Adding to the said, it could summarize the sub-dimensions of service innovation for common cases as Customization of Service and Use of Information Technology (Victorino, Verma, Plaschka, & Dev, 2005), Process Innovation (Nasution & Mavondo, 2008), Marketing-focused Innovation (Wang & Ahmed, 2004), Brand differentiation (Berry, Shankar, Parish, Cadwallader, & Dotzel, 2006) and Pricing Innovation Lockyer (2005). Meanwhile, Khuong, & Giang, (2014) examined the service innovation for hotels sector considering perceived values of consumers and intention of guests to return for the service experience as depending variables of the service innovation dimensions. This study concluded another interesting point referring information technology and customization of service strongly affect on the implementation of service innovation. Therefore, we do postulate that future studies could further examine how different service innovation implementation mechanism do mediate or moderate the influence of service innovation on consumer-perceived values and related behavioral dimensions. In brief, aforesaid overview claims service innovation-related researches do have extended propositions to be tested in different countries, services sectors and even

consumer segments to contribute for the knowledge and practice –related perspectives.

CONCLUSION

This paper reveals the notions of creativity and innovations in terms their integration for the organizational applications. Accordingly, it has explained how these two concepts do integrate with the implantation perspectives resulting competitive edge for the organization. Further, it has discussed the mechanisms of how internal stakeholders of an organization, particularly employees and managers, have been examined as critical forces for creativity that leads organizational innovations. Finally paper has organized its contribution to knowledge by specially referring the application guides for innovations in services sector firms based on the processes and mechanisms examined in different models for innovations. We do conclude the significance of the postulated future research directions as valid notions depending on Sri Lankan as a noticeable case of services sector involvement to its economy. Therefore, it is suggested that future research need to examine the services innovation as a niche of the extended studies, for instances, consumers' perceptions on services innovations as a new research proposition whilst examining adaptations of services sector organizations towards services innovations as a differentiation strategy. Currently, it notices insurance sector, telecommunication and financial services do practice services innovation strategies as a competitive edge and brand differentiation. This has been intensively demanded for services firms as per the lifestyle dynamics that shape the consumer perceptions towards services and the experiential values offered. Alongside, future studies may focus these trends as research propositions to investigate innovations in both external perspectives, particularly in terms of consumers' end, and internal perspectives as how organizational factors integrate with service innovation

mechanisms. As per the noticeable efforts found in the services sector firms, we suggest the future research directions in line with innovations connected to internal marketing practices which enable performance driven organizational environment via service innovations. Adding to the said, Brand citizenship behavior (BCB) could be considered as one of the internal marketing practices to motivate innovations driven culture of the organizations to enhance service performance. Since it denotes a significant industry highlight, we do suggest that commercial banks need to focus on internal branding practices to enhance the BCB as to enable brand promise deliveries and overall performance via service innovations as one of the potential outcomes of it. It could further specify that studies should be carried out to investigate how brand knowledge and brand commitment of services sector organizations including commercial banks could support BCB as a determinant of service innovations related performance. Moreover, it has mentioned that Sri Lankan services organizations including financial sector needs more empirical evidence to properly manage the internal marketing practices driven to BCB as a supportive mechanism for service performance. Alongside, we conclude that service innovations as one of the significant contexts to be examined in Sri Lanka as per the trends found in the market practices whilst propositional direction is suggested to investigate the service innovations connect with both consumer perspectives and internal stakeholder perspectives.

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PEOPLE'S PARTICIPATION IN DEVELOPMENT PROJECTS IN SRI LANKA: WITH SPECIAL REFERENCE OF KALTHOTA VILLAGE

M. L. U. K. Piyasena¹ , R. L. S. Fernando²

ABSTRACT

The local people's participation in project stages is necessary, because local people who know the nature of their problem and know the way of overcoming their problems. The strong people's participation in development projects enhances the greater possibilities for project efficiency, effectiveness, cost recovery, social accountability and sustainability. Since development is a participatory process, meaningful community participation must be there. Project has four stages named planning, implementation, beneficiary and evaluation. People's involvement is essential for each four stages in development projects. As a developing country Sri Lanka has been facing the problem of lack of participation. The research was implemented to measure the level of people's participation in each stages of development projects and to find reasons for lower level people's participation in development projects. Kalthota village was the study area. Among the 290 families, 100 families were selected as the sample. Both quantitative and qualitative data was collected by using interview administered questionnaires. All 100 questionnaires were used to find the level of respondents' participation in development projects as quantitative data. Among the 100 sample, 20 family respondents were selected those who gave their opinions as lower level participation in development projects. These 20 respondents' opinions were used to find the reasons for lower level participation in development projects. The study reveals these findings. The people's participation is at a very lower level in each project stages.

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The reasons for lower level participation in development projects are people were not informed by the government, only politicians make decisions, People's ideas were rejected by the politicians, Corruptions of the politicians and bureaucrats, people's day to day activities, People are busy with agriculture, Project objectives and benefits are not informed correctly and lack of transparency and high political influences. Due to lack of participation implemented projects' objectives were not achieved in the study area.

Key Words: *People's Participation, Development, Projects, Project stages, Project Management*

INTRODUCTION

The projects can be defined as a commitment and self-directed effort in order to get a solution for some kind of a problem. It is based on shared vision. The project definition is the project phase that identifies the needs and values of project stakeholders and develops appropriate design solutions to satisfy them (Whelton, 2004). In any country, projects are backbone of local development. Development projects are undertaken to improve the livelihood of the community, because development projects are some kind of solutions which created to solve people's problems that are living in the society. The national development plans are virtually prepared by every developing country to hasten their economic and attain a range of social objectives. These goals are spelt out in sectorial, regional plans, which include economic development projects (Mohammed, 2010). Therefore, the development is very possibly through the projects.

Various kind of stakeholders participate to projects such as government, non-government organizations, government ministries, government officers, project managers, engineers as well as local people. Among them local people can be considered as the main stockholder of a project, because

projects are created to solve peoples' problem. Therefore, the projects should satisfy Peoples' needs and wants of local people. Different of people have different of ideas, views, attitudes and perceptions. As well as Peoples ideas, views, behaviors and attitudes may be different according to their nation, religion, gender, culture and also geographical areas. Therefore, when the government implements activities there should be a proper mechanism. Government should consider the needs and wants of each and every community.

Community participation in development can be defined as an active process by which beneficiary or client groups influence the direction and execution of a development project with a view to enhancing their wellbeing in terms of income, personal growth, self-reliance or other values they cherish (Paul, 1987). The local people's ideas and opinions are necessary to success of a project. In order to achieve a meaningful development, government should improve the living standards of the people. In that sense government should provide things according to people's wish. As a development strategy people's participation is more important. Today the main reason of many unsuccessful development projects was the lack of active, ineffective and lasting participation (Oakley, 1993). At 1986, economic development institute sponsored workshop, the value of community participation in development project was emphasizes, including greater possibilities for project efficiency and effectiveness, cost recovery, social accountability and sustainability (Bamberger, 1991).

People's participation in development project can be categorized in to four stages. Those are Planning stage, Implementation stage, Beneficiary stage and Evaluation stage (International Fund for Agricultural Development, 2009). During the planning stage, a team should prioritize the project, calculate a budget and schedule and determine what resources are needed.

And also a decision making team will identify if the project can realistically be completed (Mohammed, 2010).

In this stage identification of project idea is very important to overcome problems. People's participation is necessary in this stage. Because local people know the exact problems, root causes of the problems and required solutions for those problems. Therefore, in this stage project planners should ask what are the people's needs and wants, what are their ideas, views and suggestions. At the implementation stage tasks are distributed and teams are informed of responsibilities. This is the good time to bring up important project related information (Mohammed, 2010). In this stage people's participation is vital important. In here people can involve to important by providing materials, machinery, other equipment's and resources as well as people are able to provide their labour. And also they can involve for monitoring of the projects. In beneficiary stage consider about sharing benefits. What are the benefits that can be obtained through the projects? Those benefits may be subsidiaries, food, water, low interest loans as well as construction of roads, bridges and buildings. At the evaluation stage after project tasks are completed and the client has approved the outcome, an evaluation is necessary to highlight project success and low learn from project history (Mohammed, 2010). Therefore, the evaluation is required to measure the performance. It is necessary getting the feedback of people, after completion the project

Through the participation people directly involve for the development of a country they are able to get more benefits. As well as fund management of a project is very possible because through the participation ensure the transparency and accountability. Although it is essential a proper people's participation for development projects for the purpose of valuable designing and successful implementation, In Sri Lanka there is a problem whether

people's ideas, views and opinions are taken to plan projects or not. Some of scholars have criticized that actually there is lack of people's participation in development projects in Sri Lanka. For example, according to grass root institutions for regional development, " More than 80% of the people say that they were not given opportunities to express their opinion in regard to decision making or in implementing policies" (Herarh, 2008).

As well as according to female participation in the decision making process of community. "19.5% only women engage in implementation" (Edirisuriya, Sumanadasa, 2012).

By considering these evidences there may be actual problem related to people's participation. Therefore this research was done to find the level of people's participation in development projects in Sri Lanka. The research was done in regard to Gemidiriya, Gama Neguma, Maga Neguma and Divi Neguma. Kalthota village was the study area of this research. It is located in Rathnapura district at Sabaragamuwa Province. And also it belongs to Balangoda divisional secretariat as well as Kalthota GN division. Due to the reasons of remoteness of this village and agriculture related occupations this area was selected as the study area.

Objectives

- To identify what is the level of people's participation in development projects in Sri Lanka.
- To identify the reasons for lower level people's participation in development projects in Sri Lanka.
- To propose recommendations to enhance the people's participation for development projects.

METHODOLOGY

Both primary sources and secondary sources were used for research question identification. The field survey was used as primary source. The journals, Articles, Publications and web site were used as secondary sources. This research was implemented by adopting both quantitative and qualitative method. Quantitative data was used to identify the level of people's participation in development projects. Qualitative data was used to identify the reasons for lower level people's participation in development projects. Data was collected by using structured both close ended and open ended questionnaires. Kalthota village was the study area of this research. The population was the 290 families. Among these families 100 families were selected as the sample. These selected 100 families were used to collect quantitative data to find the level of people's participation. Among those 100 families, 20 family respondents were selected those who gave their opinions as lower level participation in development projects. Those 20 family respondents' opinions were used to collect qualitative data to find reasons for lower level people's participation in development projects. Data analysis was done as quantitatively and qualitatively. Quantitative data was analyzed by using SPSS frequency and percentage tool. Qualitative data was analyzed by using sample respondent's opinions. Descriptive Charts, Graphs and percentage rate was used to present the data.

DATA ANALYSIS

The analysis of the research was done based on the data gathered from the field survey. It was done based on demographic characteristics in the study area and the level of respondents' participation in development projects and the key reasons for lower level participation in development projects.

The Demographic Characteristics in Study Area

It was discussed demographic characteristics of the sample families. In this research 100 families were studied. There are 410 people in the studied families. Among them about 55% is represented by female and about 45% is represented by male. When it discussed the educational level of the sample about 55% of respondents have obtained their secondary education and about 20% of respondents have obtained tertiary education. According to the study, 49% of respondents involve in agriculture. And also about 64% of respondents' monthly income is below than Rs. 15000. The main reason is most of people don't have permanent jobs in government sector or private sector. They survive from agriculture.

Respondents' Participation in Development Projects

It was discussed the level of respondents' participation and the reasons for lower level participation in each project stages of planning, implementation, beneficiary and evaluation. In order to measure the level of respondents' participation following time period criteria was created.

1= Higher level of participation (Once a month, Once a three month)

2= Moderate level of participation (Once a six month, Once a year)

3=Lower level of participation (Once a two year, More than two years)

According to this criteria if a respondent participate for development projects once a month or once a three month it is considered as a higher level of participation. If a respondent participate for development projects once a six month or once a year it is considered as a moderate level of participation. And also if a respondent participate for development projects

once a two years or more than two years it is considered as a lower level of participation.

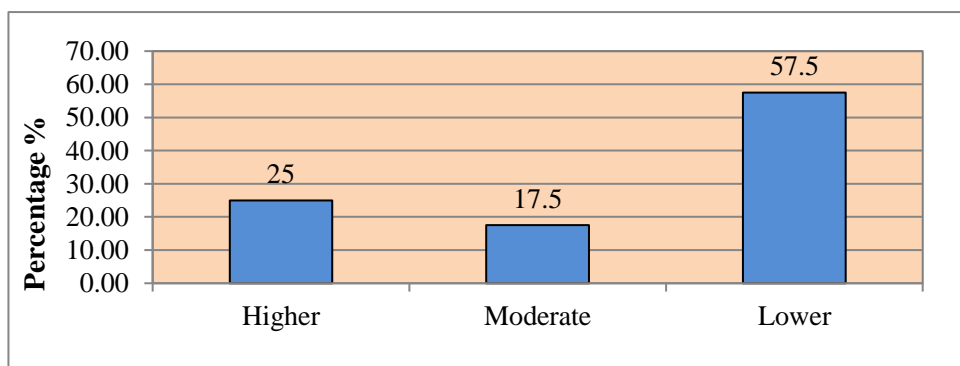
According to graph 1, about 58% of respondents' participation is at a lower level in planning stage. About 18% of respondents' participation is at a moderate level and only 25% of respondents' participation is at a higher level. Therefore, the respondents' participation is at a lower level in planning stage in the study area.

Table 1: Participation level in Development Projects

Participation stages in development projects	Participation level in development projects (Percentage %)			
	Higher	Moderate	Lower	Total
Planning	25	17.5	57.5	100
Implementation	16.28	22.09	61.62	100
Beneficiary	24	34.67	41.33	100
Evaluation	9.38	15.62	75	100

Source: Field Survey, 2015

Figure1: Level of Respondents' Participation in Planning Stage



Source: Field Survey, 2015

The Reasons for Respondents' Lower Level Participation in Planning Stage

- People were not informed by the government and only politicians made decisions

Most of time government didn't provide any information about government activities. One of respondents said that, "How we participate in planning. We didn't know anything about government activities". Therefore village people were unaware about village related plans and development activities. The respondents criticized that only politicians are making decisions. They do their activities according to their wish. Sometimes that plans are useless. Politicians don't like to join village people at the planning stage. Politicians think they are the persons who have the right for planning and they assume that they know everything. They don't care any others' ideas and views.

- Projects were done on the basis of contracts

Most of development projects were given to contractors. Therefore only contractors' ideas were taken in planning. One of respondents said that, "Only contractors are earning profits through the development projects. There is no benefit for poor people". Therefore contractors are handling the projects to earn their profits.

- People's ideas were not taken

Respondents viewed that government or government officers did not ask about people's ideas and opinions. Sometimes people's ideas were rejected by the politicians. Even politicians and government officers did not give little respect or consideration for village people's ideas and views. One of family respondents said that, "One day I told my idea in a public meeting in

relating to village development. But one of divisional political leaders rejected my idea on that time. Therefore we are discouraged by them”.

- Corruption of politicians and bureaucrats

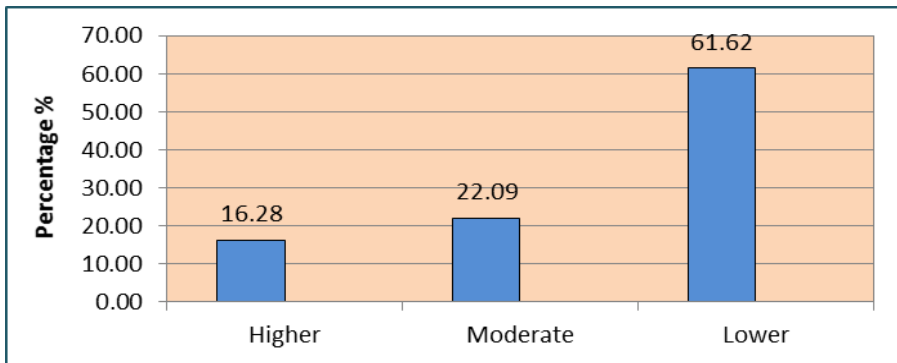
The politicians always try to do corruption. Therefore they did not like to participation of common people, because the politicians wanted to hide their corruption. Those corrupted politicians and bureaucrats try to keep their corruption and bribes as a secret. When common people come to involve, there is a thread to uncover their corruption activities.

- Inefficiency of government officers

Sometimes government officers did not work on time. They were lazy to work. Some of government officers are not coming to ask the needs and wants of village people. There are lots of problems in this village. But the government officers who are working relating to that area do not consider about it. They want to get only their salary. They are not working for village development.

Implementation Stage

According to graph 2, about 62% of respondents' participation in implementation is at a lower level. Only about 16% of respondent's participation is at a higher level. Therefore the respondents' participation is at a low level in implementation stage in the study area.

Figure 2: Level of Respondents' Participation in Implementation Stage

Source: Field Survey, 2015

Reasons for Respondents' Lower Level Participation in Implementation Stage

- People's day to day activities and they are busy with agriculture

People have to do their day to day activities. Men have to go for their jobs and women have to do their home related activities such as child caring and relation treating responsibilities. And also most of villagers are farmers. They expressed that they need to do it, because without agriculture there is nothing to eat for the Therefore they don't have an adequate time to participate in implementation stage of development projects.

- Village people have divided in to two groups based on their political opinion

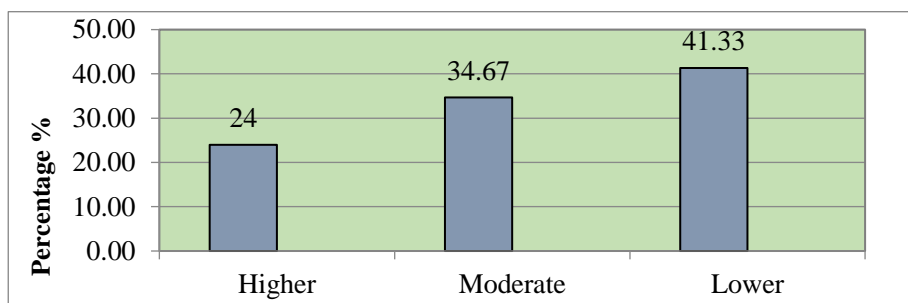
Sometimes village people don't have a unity. They have different types of political views and they divide in to two groups. Therefore their participation is at a lower level. Sometimes it is very difficult to come for one decision. They are working according to their political opinion. Sometimes village people think about their political party rather than village development.

- Projects' objectives and benefits were not informed correctly.

Most of development project objectives and benefits were not given to people. Therefore people did not know about what was the project, why it was implemented and what were the benefits. Therefore their participation is at a lower level in implementation stage, because they responded that, “How we are going to participate in implementation without knowing the project and the benefits of the projects.

Beneficiary Stage

Figure 3: Level of Respondents' Participation in Beneficiary Stage



Source: Field Survey, 2015

According to graph 3, about 41% of respondents' obtained benefits are at a lower level. Only 24% of respondents' obtained benefits are at a higher level. Therefore, obtained benefits from development projects are at a lower level in the study area.

The Reasons for Lower Level Benefits of Development Projects

- Corruption of politicians and government officers

Politicians corrupted money from allocated funds of development projects. And also other materials were corrupted by politicians. One of respondents said that, “Politicians are stealing money from the development project funds. Even if adequate money was allocated to construct a road in the

village, the politicians construct the road by using only half of money. The other all money is corrupted by politicians”. Sometimes government officers corrupted money from allocated funds of development projects at the intermediary level. Due to that reason benefits are not come to village poor people.

- Weaknesses of public officers

Sometimes public officers are not working on time. They are inefficient and they are working as ball passing method. Final responsibility is not taken by the government officers. And also they are not accountable. They also fear to politicians and they are working as political agents. They do all the activities according to politicians’ orders. They are performing tasks stated by the politicians rather than performing their job tasks. Also non evaluation of projects after the implementation and unequal distribution are the other reasons for lack of benefits.

- Lack of transparency and lack of participation

Projects’ budget proposals are not in a transparent manner. At the end no one knows what happen to allocated funds of development projects. Due to this reason money is wasted unnecessary. People are not provided any information and budget proposals relevant to development project activities. As well as projects are designed by politicians. They don't consider the needs and wants of people. In that sense final output is not match with the village people's needs and wants. Due to that reason sometimes government design unwanted projects. Then ultimate benefits cannot be achieved.

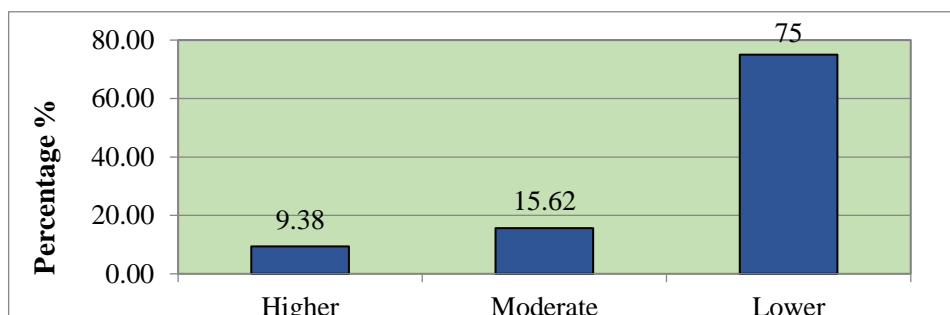
- Lack of co-ordination among government organizations

There is no proper co-ordination among government organization. One organization doesn't know about other organizations’ activities. And also

there is no top to bottom and bottom up communication among the organizations. The employees who are working in downstream in the organization they don't know anything about organizations objectives. Therefore, project objectives are not achieved.

Evaluation Stage

Figure 4: Level of Respondents' Participation in Evaluation Stage



Source: Field Survey, 2015

According to the graph 4, 75% of respondents' participation is at a very lower level in evaluation stage.

Reasons for Lower Level Participation in Evaluation Stage

- Political interference is high

People are fear to politicians and political background. They are fear to divisional politicians. Due to that reason people don't go to give their feedback about development projects. Although there are some weaknesses of development projects people don't go to tell it because of this reason.

One of respondents said that, "How we are going to evaluate development projects. It is very dangerous. How we live in this village after evaluate the projects. There are lots of threads for villagers. We are fear to participate in

evaluation stage”. Therefore they don’t go for evaluation in development projects.

- Government and public officers are not asking from people

After the implementation stage of development projects government officers or project officers didn’t come to ask people's ideas about implemented projects. Some of respondents criticized that officers never come to ask. Most of respondents stated that they didn’t participate in evaluation in development projects no one came to ask for it. They said that, “To whom we are going to tell it”.

- People are not willing to express their ideas in public meetings

Most of village people didn’t like to tell their opinion in public meetings, because it was a risk. One of respondents said that, “Although we see the weaknesses of development projects and bad project implementation, we are not going to tell it in public meetings. We don’t have the right to express our ideas in freely.

CONCLUSION

The study was identified the key issues relating to people’s participation in the study area. The respondents’ participation in each project stages is at a very lower level and identified the root causes for lower level participation. The study proposed some kind of solutions to enhance the people’s participation in each four stages of development projects. Those are improve the participation of villagers in planning stage of development projects by obtaining villagers own ideas. Government officers should discuss with village people and give opportunity to express their views freely. Government has the responsibility to give full information to villagers about project objectives and benefits. As well as improve the participation of

villagers in implementation stage in development projects by adopting awareness programs. And also introduce continues monitoring system to improve the benefits in development programs and projects. At the same time improve the participation of villagers in evaluation in development projects by getting personal feedback from villagers. At the same time reduce unnecessary political influences and reduce corruption of politicians and government officers are widely meaningful. Not only that but also appoint change agents to change the attitudes of villagers and appoint village level project management committees are valuable. Government should select the group of people among villagers as project management committee and give some kind of duties and responsibilities for them. The project management committee members' ideas must be taken at the stage of design of projects.

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VIRTUAL MEDICAL EDUCATION; YET TO ACHIEVE THE EXPERTISE

Madhu Bala¹

ABSTRACT

This paper explores the different dimensions of newly introduced 'technology based education in medical field', known as "Virtual medical education In order to look at the specification of the project 'National Programme on Technology Enhanced Learning (NPTEL)' by Ministry of Human Resource and Development (MHRD) Government of India, seven Indian Institute of Technology (IITs) and Indian Institute of Science (IISc) to create technology enhance learning atmosphere in country and to provide mass education through distance learning mode and their plan to enter into medical education through virtual medium. While connecting the idea with the concept of hegemony and power relations, it explores the dominant form of knowledge in medicine and public health and the nature of technology which also celebrate the dominance over other forms of medicine by virtual medical education system. It also explores the philosophical understanding of knowledge system and the post-phenomenological underpinning which explores the multiple realities and their impact in the context of contemporary Indian medical education systems. . It is not only about the plurality of medical knowledge systems in India rather how the crises of developing countries lead to find out the remedies by adopting the western model of development to cater their local problems and virtual education is seen in the form of technological solution to the Indian mass education problems.

Key Words: Education, Medical, Technology

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INTRODUCTION

Virtual education, as explained by J. Michael Brooks, “education that is enhanced by the application of electronic technologies to the processes of teaching and learning. Education become virtual to the extent that teachers and learners, who may interact in the traditional classroom mode, are joined in the learning process electronically, possibly across great distances, such that teaching and learning are no longer tethered to a single place, time, or pace. Virtual education, therefore, includes traditional modes of learning supplemented by the use of sophisticated technologies, including personal computers, networks, and perhaps the Internet, plus what is known as distance learning, or learning that does not involve a student being physically present on the home campus of the school offering the course”. Technological interaction in medicine is not new and only form here rather the popular form in practice is telemedicine. Telemedicine is defined as the "use of telecommunications to deliver health services to remote patients and to facilitate information exchange between primary care physicians and specialists at some distance from each other" (Bashshur 1997:9). But the medicine is dealing with telemedicine only in the professional practice and that form of medical practice is highly demanded in military purposes but for medical education this technology based system has entered through virtual medium.

‘Virtual reality (VR) has a significant relation with the human and environment but as these immersive VRs rest on the view that knowledge is, in the first instance, visual’ (Hillis 1999). Even where researchers and developers focus on other senses, their aim is inevitably to harmonize those senses with the visual. Marshal McLuhan’s argument in ‘Medium is the message’ substantiate it more precisely as the virtual medium comes with an ambiguity or a different viewpoint implicit in

it. The reality is no more than the ‘visual sense’ and the world is ideologically presented by the hegemonic groups. I am merging the concept of ‘hegemony’ (Gramsci) with the Foucault’s concept of gaze. But here it is not only limited to the gaze rather implicitly presented through a technological means which is through virtual education practice. However, as Hillis shows, this appeal to the visual is not without implications; the visual brings with it several thousand years of political and metaphysical baggage.

This paper deals with the ‘Virtual Medical Education’ under the project known as National Programme on Technology Enhanced Learning (NPTEL) and explores it critically from different dimensions. The questions which I am focuses upon are divided into three parts: one is related to the question on the exclusionary nature of our dominant knowledge system, the second question rests upon the essential focus of this paper which is entirely focusing on the nature of technology through which knowledge system is provided to masses and at last the final part of the paper deals with the education crises and how technology interact in Indian system and what happened next. Before going into discussion the brief introduction about the project and their part ‘Virtual Medical Education’ will be explored.

METHODOLOGY

This research is a descriptive and analytical study of the subject matter under the critical sociology framework. The major sources of data are secondary in nature and has been analysed painstakingly through secondary data analysis method. The content is primarily collected from different web links of the project ‘National Programme on Technology Enhanced Learning’, which is a core idea of this study, from where analyses start. Other sources are secondary theoretical literature and

research papers, encountered similar topic or theme. This study encounters the sociological perspective from a critical theoretical lens which makes the study argumentative and theoretically rich from the knowledge point of view. The primary work could not be done because of the focus of the study, which is not going into the functionality of the topic rather to make a philosophical argument and to make an analytical enquiry on this topic.

Project and Its Implication

About the project: National Programme on Technology Enhanced Learning (NPTEL) project has started by the collaborative effort of Ministry of Human Resource and Development (MHRD), seven Indian Institute of Technology (IITs) and Indian Institute of Science (IISc) to create technology enhance learning atmosphere in country and to provide mass education through distance learning mode. The proposal was put forward during the year 1999-2003 for creating contents for 100 courses as web-based supplement and 100 complete video courses. NPTEL has completed 12 years since inception and they have 850 web and video courses across 23 disciplines. It started with science and engineering in its first and second phase and NPTEL successfully created its technology enhanced content at national level and hence in the third phase, it has moved into 'Medical Education' through virtual medium. Significantly focusing on medical education because it is different from the engineering and other under graduation and post-graduation courses which are targeted in NPTEL the focus of providing knowledge also incorporated the target of providing expertise to the less resourced institutions or students who are not in reach of the resource full institutions. The plan was put forward by Dr. Manoj Singh (Professor, Pathologist, AIIMS) and the idea of providing virtual medical education is proposed by him by paying faith in the

changing nature of technology. He mentioned that ‘Virtual Education’ in medicine is not new to Indian society rather it has already come into being five-six years ago, in 8 medical colleges and virtual classrooms were set up in those colleges by National Knowledge Network. It was found that the new technology is not fit for our traditional pattern of providing practice based medical education but it can provide information not expertise. So Dr. Manoj considering that fact firmly believes in this project as he elaborates that it has possibilities of bringing change in the current medical education crises and it can achieve the goal by providing virtual medical education to remote areas or institutes situated there which has less expert faculty and lack of resources.

Client: The need to create courses for health workers, nursing and paramedical assistants reflects the clientele who are in the medical sphere or work with the medical institutes and those who work for public health and should be provided expert medical education. According to him the future employability is high in these areas. But now the online web-portal and its social media availability shows a different picture as anybody can explore the content but the difference between common masses and enrolled students is only about the certificate as validity of learning is provided.

Resource: The goal is to create videos and lectures for these clients and training workshops for them would be the focus of this Programme. Another aspect which he focuses is related to the content, he clearly mentions that video could be developed by any expert all over the country but then it will be assessed and then will be uploaded by the expert authorities who are related to developing content. So much focus on the virtual medium and content but also he mentions the contradictory statements that content is built for the people who have no access to these expert institutions.

DISCUSSION AND ANALYSES

Hegemonic Nature of Bio-Medical Knowledge

This project starts with the focus on the expert knowledge which is undoubtedly coming from the intellectuals' class of the medical institutions of India and they are undoubtedly present in the resource full institutions such as most prestigious medical college AIIMS. The goal which is set by the collaboration of MHRD, IITs, IISc and AIIMS, to produce the expert medical content and the knowledge dispersion is done through the virtual medium of education and the expert knowledge is required for that content. Here the debate invokes some important issues regarding the hegemonic nature of this solidarity of dominant bio-medical knowledge. It aims to cater the problem of Indian mass education and in the medical education stream, bio-medical creates hegemony and other forms of Indian medical system undermined in this system. It clearly forms a system which is discriminatory in nature. When the social-sciences are discussed all the different subjects are part of a larger discourse and they all have equal importance whether the subject is based upon philosophy, theory or it was based upon empirical reality. In health and medicine, it is not visible while it comes to medical education the system only refers to the 'Bio-medical education' and the question of the existence of other forms of medical knowledge systems are refused in terms of creating the hegemony of particular knowledge. As Foucault explains that in contemporary world the 'power' is not the issue but the forms in which the power is exercise is the issue and he categorized three forms out of which one most accurate in this context is 'scientific authority to classify and order knowledge'. The debate is not only between the dominant or dominated class rather it is also between the production of expert skills and who decides what is 'expert knowledge'? The nature of medicine as a subject is very complicated as the people who are making

the distinction between the expert knowledge of medicine and practice, are the once who does not consider all other medical practices authentic which are out of their 'bio-medical sphere' and defame the impingement. So the nature of this expertise is only limited to its own medical practice which is linked to the hegemonic nature of the medical science. As Gramsci's idea about hegemony reflects the process of class based ideological hegemony emerges from the process of defamation of other ideologies and creates the larger support system for the particular ideology. Hegemony is not the ultimate reality rather spreading of a particular idea on a larger level. Bio-Medicine is just a kind of reality where the other realities of other medical knowledge should also be given acknowledgement as a form of medicine practice at a common ground. As there are multiple ontologies are accepted and therefore the multiple knowledge system in medicine should also have given a thought.

Another concern is related to the concept of 'Expert Knowledge'. Bourdieu argues about the 'reproduction of inequality' when he writes about the reproduction of knowledge. In his idea the dominant class which has resources and cultural and social capital will reproduce the class hierarchy which ultimately brings the dominant class at the same dominant position in society. Focusing upon the idea of reproduction of dominant group and drawing analogy from that school of thought, 'virtual medical education' is spread as a dominant form of knowledge which is provided by NPTEL project and the expert knowledge will only come from who have that expertise but the 'who' is important here as 'the expert' is also decided by the dominant class of 'intellectuals of Bio-medicine'. This knowledge which is substantiated by clinical trial or practice is the only parameter for the 'experts' who declare it as the only superior form of medical knowledge but

possibly there might be different worlds of knowledge available in different places

in India, related to the medicine practice as highlighted by V. Sujatha in the 'Plurality of Indian Medicine' where she highlights the local forms of medicine knowledge is available in the traditional practice and for them their 'Ayurveda' or 'Siddha' also practiced by the professional experts of their own medicine discipline. So the dominant class of Bio-medical experts and the hegemonic form of bio-medicine in medical sphere has reduced the possibilities of medical knowledge system in different forms rather wants to deliver or limit the medicine as a discipline to bio-medicine and the expertise are also who are culturally and socially reproduced in the dominant culture as to reclaim it one need to welcome the knowledge as 'expertise' rather their form of knowledge or their way of getting it. It is well substantiated in the writing of 'My Vaidya and My Gynecologist' by Harish Narayandas where he present different forms of knowledge system and also they could be attained through different kinds of ways not only hegemonic form of acquiring knowledge rather multiple realities behind their knowledge but they have got expertise. There are all kinds of possibilities which should be celebrated in the health and medicine discourse as it allows accepting the multiple worlds of knowledge rather create a hegemonic structure.

Virtual Technology and Knowledge Transmission

In this project, the technology enhanced learning is the focus and in medical education, through virtual medium they seem intended to transmit the content to the receiver. As defined by Hillis virtual is based on our one sense entirely, which is called 'vision'. Here I want to invoke Foucault who gave the views on 'Gaze' which he explores particularly in medical practice as how the visual sense is considered as the comprehensive means to

understanding but I am relating that with the virtual Gaze. As Arushi Sinha explores the concept of vision from Foucault's lens and explains "In the Western scientific tradition, vision is regarded as the sense least subject to interpretation or ambiguity of meaning. Visual imagery is thought of as the most efficient mode of communication. This assumption is what drives the production of such vision-enhancing technologies as computed tomography (CT) scans and even the printing of scientific journals. The visual sense is the most refined in the practice of medicine and has largely replaced the use of other senses". Here when we explore the technology as virtual medium the similarity of nature of technology comes out but the rendering of such visual medium is entirely different. However the medium is hot (McLuhan) as they engages one sense extremely and does client or learner will not require filling the information gap or the conscious enquiry. The medium in its nature has the factor which creates crises in the knowledge system but also the same way it carries the message (McLuhan) in itself. The crises comes when the interaction with technology creates a different model of 'Para-social interaction' first introduced by Horton and Wohl (1956). This kind of interaction occurs in Virtual medium communication and it creates the imbalance between the relation of receiver and who delivers the knowledge. It is also the beyond space and time limitation and which also create the bias in communication. It always creates the different kind of understanding which we can find in the daily soaps or movies. As we find the receptor generate queries from the content provided by the person who is proving the information on Virtual medium. Sometimes it creates problem in learning as the emotions remains unanswered in these para social interactions. To elaborate the argument, and jump into the medium is the message I am rendering McLuhan who argues not only about the nature of technology rather it also goes deep into the question that how technology perceive hidden messages inside its technical familiarity. We need to shift

the focus again on the expert knowledge system as already mentioned by Dr. Manoj Singh that virtual medium could be able to provide information in the form of knowledge transmission but the expertise which is the main focus of this project is entirely dependent on the engagement of the receiver with the medium. So, if the technology is having a different kind of nature in itself how one can derive the expert skills from the same. Another concern again related to the understanding different expert medical practicing world which are different from the point of view of their engagement with the patient or most substantially I say that the pluralism in Indian Medicine is well described (V. Sujatha) that in Indian medicine there are variation in medical practices and also the diagnosis vary which might not be feasible to support virtual medium as in 'Ayurveda' the practice is all depends on the knowing patients pain (hearing), diagnosing by touch and feel and also by engagement of the body itself which is opposed the nature of virtual medium. If the diagnosis doesn't support the virtual medium or the specific technology, then how will the expert knowledge be made available in the field of virtual medical education? In that case the technology is having the inherent message of discrimination and which is under the category of 'taste based discrimination' against the rest of the medicine practices except the dominant clinical practice in bio-medical world. The argument is meant to critically analyze the world of technology as suggested by the Feenberg's primary contribution to the philosophy of technology: "What human beings are and will become is decided in the shape of our tools no less than in the action of statesmen and political movements. The design of technology is thus an ontological decision fraught with political consequences".

Interaction with Technology

When the course is designed for virtual medical education, one area which is ignored by the planning committee and implementation committee is related

to the empirical reality and the cultural influence over the knowledge production is very fascinating. This is only about the interaction between the technology and who is receiving the training. So the question of the learner and why do we need to introduce this technology to that audience? So the project is not for them who are getting training in AIIMS rather it is made for the people who have no access to such institution and expert knowledge providers. In India the biggest crises is to provide good education and in medical education the resource is a big hurdle for local institute to provide better education and the public private partnership in education system, short term projects and these kind of distance learning mode becomes the remedy or alternative to such big crises to the basic need of the nation. B.P. Narsimharao focuses on the current Indian crises and the factors which are there in society not to access good education. He elaborate it by invoking the shortcoming of Indian contemporary reality, “such as the bureaucracy, unemployable graduates, diversity of languages and culture, the large unwieldy population base, the large segment of the population still below the poverty line, low farming productivity and poor peasants, and so on. The World Bank report (2005) titled ‘India and the Knowledge Economy: Leveraging Strengths and Opportunities’ argues that when supported by the right kind of government policy incentives, the country can increase its economic productivity and the well-being of its population by making more effective use of knowledge. In the entire concept of the knowledge economy and knowledge society, universities and other higher educational institutes play a pivotal role. It is important to see how we can establish strong relationships between universities and the knowledge needs of a post-industrial society by focusing on the increased importance of knowledge generation and organisation for economic and social well-being (see Lindenstien 1995).” The point which should be the focus here is the resource less society who needs remedy or solution for getting the good

education. The NPTEL project and particularly by providing Virtual medical education to this social setting again raises the question that without resources what kind of knowledge will they get and as a result by this effort again they will remain at lower strata of medical knowledge system rather get the equal opportunity with enough institutional conditions to get themselves trained under those experts. Therefore the level of this kind of education training is always remains below the expert knowledge system and the alternative or a substitute is provided by the state.

One more study is there to follow up the argument that how these kind of project are started to by Government to not to cater the crises or need of education system or society rather they provided the alternative in an experimental manner. The study done, showing the need of ICT and experiment done in rural area by HP India Company in collaboration with the Indian Government. This research was done on the villagers and for them the place, which was situated in Andhra Pradesh, Kuppam was taken as a living lab and for them the villagers were also the object of their research. The project called 'i-community' was run by this private organization in collaboration of Government and in this project ICT training was provided to rural villagers with the vision that these kind of technology based system can make a change in current deploying situation of country. ICT works to reduce the social issues and lead the system to work in an efficient manner. But when the project reached to its juvenile level the project got stopped as because of the lack of resource and economic and practical reasons such as the low aspiration of HP India, local companies started taking interest in ICT and political crises which was the major factor in this change, change in government of AP because of the which HP India finally left the living labs in between and the situation got verse when it was found that the involvement of villagers in this project left then in a great trouble as they were not trained and they already left their previous work.

The people who were involved and were taken as the object of study came forward and raised their voice that in these kind of project they hide the reality and involve you by invoking high hopes but then these kind of projects which are based on the systemic variations mostly ends with frustration and socio-economic-political failure (Anke sachwittay, 2008).

In other empirical study which has done on the relative area of virtual education elaborates that “we might also take note of the work of Pascarella and Terenzini (1991) showing that in hundreds of studies, the "greater the student's degree of involvement, the greater the learning and personal development" (cited in Astin 1996:124)”. One more interesting work done by Jahnavi Phalkey is based on the project of Akash Tablet but it did not work out or later on it just got closed because of the political-economic crises and the systemic failure which she studied through looking the history of collaboration of technology into Indian education system. But overall analyses which she raised as the concern of the empirical study was based on the nature of the dominant authority who introduced new plans, either by the political or economic interest in technology based education as it is also an illusion of Indian elite society that technology is the only solution to all Indian problems. But as we have also explored that the reality is not the same rather it is also renders the question of less well planning, less supervision and lack of rationality.

The point which is invoked here is that the Virtual Medium hardly provides any supervision during the practice which brings a high risk to the patient's life and the credibility of the practitioner as well. As the project NPTEL has no supervision guidelines rather they have incorporated the quizzes as their assessment parameter which will substantiate the informative knowledge rather skills or efficiency in medicine which is not possible without the trainer. The designers should also keep this into consideration that the

number of patient the experts are encountering at institute like AIIMS is very much higher than the number any learner would be getting in any remote area of the country or the small medical institutes. That weakens the possibility of learning and achieving the expertise for the learners. All these are part of the deprived nature of technological adoption in Indian education system because most of the times it has found that the innovative or development projects which are promoted in India are directly taken from the west and without any changes they are experimented here in Indian setting but then it comes up with harmful repercussion on society or system. As it is already substantiated by the different research done on the learning outcomes of students from virtual medical practice are very low and sometimes destructive in the sense that they did not get any clinical practice or case based learning or the hands on practice. Ludvigsen also comments on the complexities of research involving tool mediated learning and interaction in medical settings, where outcome measures at the level of the individual tell very little about the skills that people develop in settings with a high division of labour. "Although the articles contribute different insights to developing medical education, one message stands out clearly: if students are left to their own devices for too long, many are likely to give up trying before reaching intended standards. Many will also end up with misconceptions. Digital technologies, however sophisticated, are not standalones: guidance and support from teachers and seniors are still necessary ingredients of the teaching and learning process". Also Wenger understands of practice as a duality of participation and reification. According to this analysis, objects are incorporated into meaningful practice through participation. In this regard Virtual medical education is highly unsatisfactory and this technology failed because lack of supervision.

In biomedical systems, as Gramsci (1971) views "the healer is the mediator between the elite and the non-elite, a "locus of hegemony," and health and

disease are defined by the elite for the purposes of control”. Navarro (1981) describes Biomedicine as an extension of capitalist machinations. In lesser developed or developing countries science and technology are the better way to utilise the national resources. Furthermore, expressed by Drory “such policies assume a hierarchical connection between science, technology and economic development. Each of these factors is conceptualized as a necessary investment in the development of the next factor on this recursive continuum. Thus, science is perceived as a necessary infrastructure for further application of knowledge, while technology is perceived as applied science” (Gili S. Drory). Moreover, science’s effect on the economy is mostly mediated by technology and in this way the technology enhanced learning project of NPTEL is also inspired from the national, political and economic interest where technology interacts with the knowledge system only for promoting the idea of national development.

CONCLUSION

The Virtual technology is a medium to deliver medical education but it is the only centre for attraction in this paper which is criticised from a different lens as the nature of ‘Virtual’ technology and why how it rare to the hidden social realities in it as a message of technology. The interaction with virtual technology is not only limited to the teaching-learning rather it goes into the relation between the participant and which is based on para-social interaction. A different reality which is not in philosophical aura rather understood from a political perspective. These interactions are always built upon the interest of dominant group whether state or elite education institutions that might undermine the idea of knowledge, expertise, skills and service in public health to fulfil their national or individual interest from a political gain. In these kinds of promoted projects, the health sector is also turning into capitalist market where the knowledge is sold out in the form of

information and also substantiated by providing validation in the form of certificates. The story doesn't end here rather the most important argument which is based upon the idea of marginal knowledge systems (Gramsci's) or the multiple ontologies should be considered with their own worlds of medical knowledge systems. I would focus on the reality of plurality of Indian medicine and the expert knowledge should not only limit to dominant bio-medicine or virtual medical training rather it should also encourage the expertise from different local forms of medical knowledge. So there is real world and other is Virtual world which has been accepted by the modern societies so now it is the time that modern societies should acknowledge the multiple forms of worlds of medical knowledge systems. Technology is not only tool to transmit knowledge and it is not creating any such difference rather in this context virtual medical education is not feasible as the expertise required in this field, demands the engagement of all the senses together as the medical practice is related to living subjects not objects. As Hillis statement says "on the virtual medium, the individual's appearance is no more than the packaging that encloses any product on a shelf".

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USE OF ELECTRONIC RESOURCES AND ITS AFFECT: SPECIAL REFERENCE TO LIBRARY USERS OF KELANIYA UNIVERSITY

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ABSTRACT

This paper presents that status of electronic resources facilities and services provide by Kelaniya University Library (KUL). The University Library is the hub of the teaching, and learning activities where Undergraduates, Lecturers and researchers get their required information according to their needs. At the pass time library users have to spend more time for searching their information. But currently, electronic resources provide better and effective user services. Objectives of the study to investigate the present situation of E- resources facilities and services provided by the KUL to examine the frequency of using the electronic resources available in the library, to study the impact of electronic resources and services on the academic work of the user and provide suitable suggestion and recommendation to improve the e - resources and e services for the benefit of users in KUL.

A methodology used for collecting data was questionnaire based and all the question were specifically prepared and related with the use of electronic resources and its impact. The 100 questionnaires were distributed randomly. 15 % percent are lecturers, 71% percent are undergraduates, and 14% percent are researchers. This study reveals that, majority of the users, use and satisfied those materials. Although it lacks of infrastructure facilities and the library should arrange more training session for users.

Keywords: *E resource, Kelaniya University Library, Electronic Services, Information Services, University Librarian*

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INTRODUCTION

The University Library is the hub of the teaching, and learning activities where Undergraduates, Lecturers and researchers get their required information according to their needs. At the pass time library users have to spend more time for searching their information. But currently, electronic resources provide better and effective user services. The twentieth century was basically changes in communication technologies. Computers are being used for day-to-day housekeeping function of the library, which saves the time of the end users, and library professionals also and at the same time avoid duplication of work and make the library service effective and efficiently. Now a day's electronic resources are revolution all over the world. There are available in various forms. Such as e-book, e-journal, e-database, image collection, etc. In this paper, an attempt has been made to show the existing situation of electronic resources in Kelaniya University Library, how University library provide these electronic resources to the users.

Objective of the Study

- Investigate current situation of electronic resources facilities and services afford by the Kelaniya University library
- Find out the cause and frequency of using e resources attainable in this Library
- Explore the Problem faced by the users during accessing and using the e resources
- Pick out the effect of e resources in their academic work
- Study the level of satisfaction of users about coverage of e-resources

- Enquire the satisfaction level of users about infra-structure to support the access of e-resources
- Suggest the suitable recommendations to improve facilities and services related to the use of e-resources.

REVIEW OF LITERATURE

The literature also indicated that a number of relevant studies have been carried out on the use of e- resources by varies filed and varies researchers all over the wide. Investigate have also carried out on the use e resources by researchers. According to Madhusudan, e- journal has created high dependency value on researchers and they sufficient through that information. (Madhusudan, M. 2008).

Construction of developing countries, Okello-Obura and Magara (2008) investigated electronic information access and utilization at the East African School of Library and Information Science, undergraduate student from Uganda. That study indicated that users derived a most of benefit through the e resources and access to the quality information

Kebede (2002), identifies four barriers to the effective provision of electronic resources in public libraries, its, namely lack of strategic planning, lack of adequate or reliable funding, lack of use of Internet to provide information services to users and a lack of consistent training for users in new ICT services.

The study in usage and awareness of electronic information resources at the University College Hospital in Nigeria. Revealed that the study, level of usage of the electronic information resources is not high and major problem however identified is lack of

information retrieval skills for exploiting electronic resources, thus making the level of usage of resources by medical students very low (Ojo, & Akande, 2005).

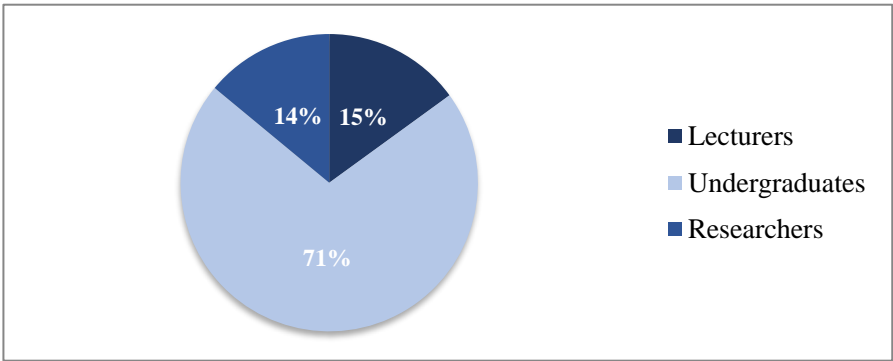
Author's experience of providing e-journal services to the scientists at the Central Glass and Ceramic Research Institute – a center of excellence in the field of glass and ceramics situated in Kolkata, India. (Patra, 2006) It describes the developmental activities involved in providing user access to the e-journals and its impact on library operations. Electronic journal packages, or bundles, have become standard resources in academic libraries in just the last few years. The impact on collections and budgets will be significant, but are largely yet unmeasured. A survey was designed to provide some data concerning the financial and collection implications of these bundles, and was distributed to the fourteen academic libraries within the Boston Library Consortium. Results are presented and discussed Jonathan Nabe, E-Journal Bundling and Its Impact on Academic Libraries

METHODOLOGY

Keeping in view the above objectives in mind, a structured questionnaire was prepared to collect data from the Kelaniya University Library users. All the questions were specifically prepared and closely related with the use of electronic resources and its effect. These questionnaires were randomly distributed to the Kelaniya University Library users and were successfully retrieved from users. The 100 questionnaires were distributed randomly this user. In 15 % percent are lecturers, 71% percent are undergraduates, and 14% percent are researchers.

CATEGORY OF USERS

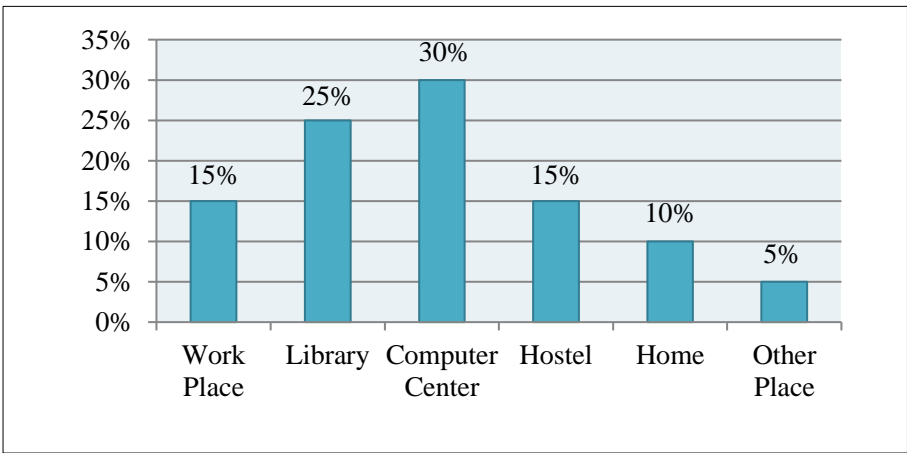
Figure 1: Category of Users



Source: Field Data

ACCESS TO INTERNET

Figure 2: Access to Internet



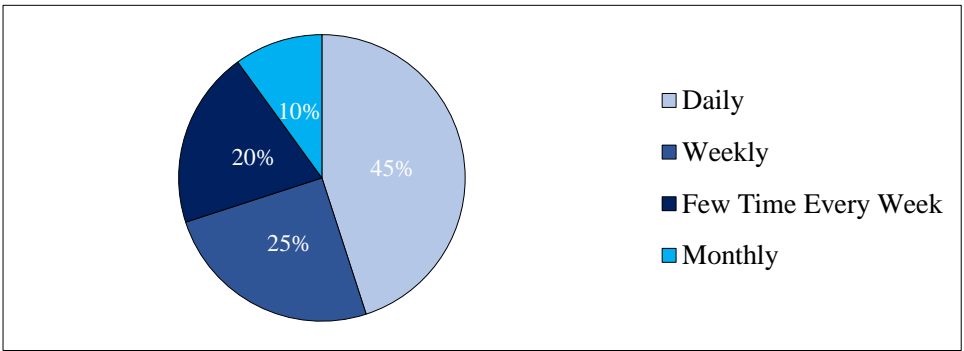
Source: Field Data

Accesses to internet regarding that find out 30 percent approve access to internet at computer centers, 25 percent accessed at library, 15 percent accessed are work place and home, 10 percent accessed at home and 5 percent accessed to the internet at other place. Included that other place, most responders are acknowledged access to internet at cyber cafe. Finally result indicated that, most of the users’ access to internet computer center and library than other places. See table 2 above.

FREQUENCY OF USING E- RESOURCES

From the returned questionnaires, it was a found that most of the 45 percent users access to e- resources every day. 25 percent accessed electronic resources weekly, 20 percent users acknowledged to access in e resources few time every weekly and 10 percent users accessed this resources monthly. See figure 3. Most of the Kelaniya University Library users access to e- resources every day.

Figure 3: Frequency of using E- Resources



Source: Field Data

PREFERENCE LEVEL OF USING E- RESOURCES

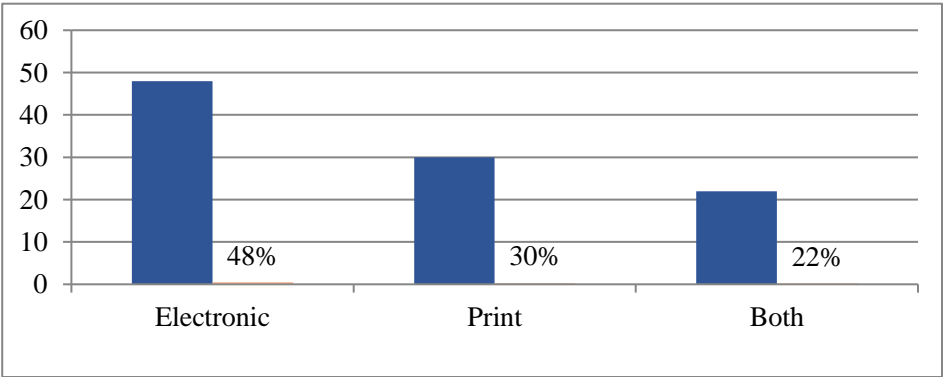
Table 1: Preference Level of Using E- Resources

Type	Number	Percentage
Electronic	48	48%
Print	30	30%
Both	22	22%
Total	100	100%

Source: Field Data

The result reveals that 48 % of respondents usually access only electronic version of information whereas only 30% users access to read the printed version of information but 22% respondents use to both electronic and printed information. That also included under the chart.

Figure 4: Preference Level of Using E- Resources

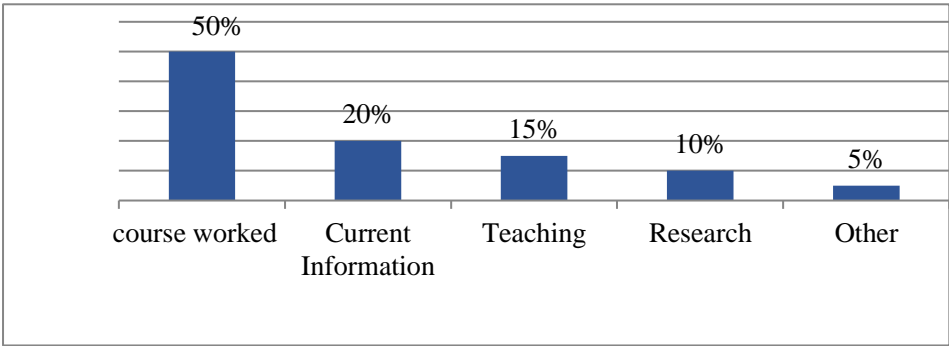


Source: Field Data

PURPOSE OF USING ELECTRONIC RESOURCES

This Library users utilization of electronic resources for many purposes. According to the respondents, 50 percent users mostly used electronic resources for course worked, 20 percent used e-resources for current information, 15 percent used electronic resources for teaching purpose, 10 percent used electronic resources for research purpose and 5 percent used e- resources for other purposes. See Figure 4. Here, it is found that, more than half of respondents used e-resources for their course worked.

Figure 5: Purpose of using Electronic Resources



Source: Field Data

USE OF ELECTRONIC RESOURCES

Adjudicate the users replied, it has been found that, the majority of users 48 prefer to use electronic journals, second highest number of users 25 used electronic database, 20 users used e-books and the lowest 5 and 2 users used electronic dissertation and other. Here it is found that, most of the users use e-journals.

Table 2: Use of Electronic Resources

Type of E- Resources	Number of Users
E Books	20
Journal	48
E Database	25
E dissertation	5
Other	2

Source: Field Data

Table 3: E –Resources Coverage of the Subjects

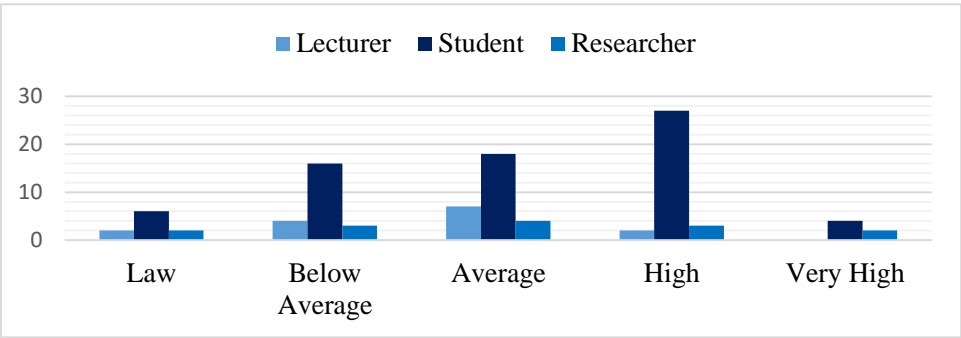
Coverage of the subjects	Lecturer	Student	Researcher
Law	2	6	2
Below Average	4	16	3
Average	7	18	4
High	2	27	3
Very High	0	4	2

Source: Field Data

E –RESOURCES COVERAGE OF THE SUBJECTS

According to the filled in the questionnaires, it was found that 10.0 percent users replied that, the coverage of their subject/work is low, 28.0 percent respondents noticed electronic resources cover their subject/work in below average, 23.0 percent used level is an average, 31.0 percent explained that electronic resources cover their subject/work are highly, 6.0 percent used their level as very high and 2.0 percent used level as NA. See the Table 4.

Figure 6: E –Resources Coverage of the Subjects



Source: Field Data

EASE OF USE

The investigate indicated that, 11 users thought that they could not easily use electronic resources, so they used their level as low, 27 users responded that ease of use in below average, 25 users replied that the level of ease of use in an average, 31 users replied that they can use electronic resources highly, 6 users replied that they can ease of access is very high.

Table 4: Ease of Use

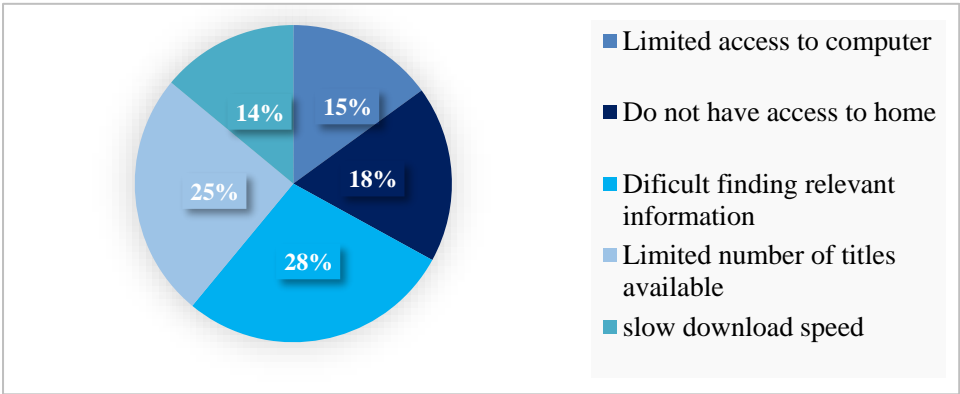
Ease of Use	Lecture	Student	Researcher	Total of Number
Law	2	4	1	7
Below Average	3	20	4	27
Average	9	16	4	29
High	1	27	3	31
Very High	0	4	2	6

Source: Field Data

DIFFICULTIES OF USING ELECTRONIC RESOURCES

Though e-resources have become a common source among the academic and research communities, the majority of users stated that they have difficulties to use e-resources. The specific problems faced by the users are given in below chart. It was observed that majority of respondents are not satisfied with availability of enough e-resources in their respective subject. 25 percent users acknowledge only a limited number of titles available, 18 percent indicated e-resources of Kelaniya University Library cannot be accessed from home. 15 percent users given their opinion on limited access to computers and 14 percent indicated slow download speed. See Figure 6.

Figure 7: Difficulties of Using Electronic Resources



Source: Field Data

OVERALL USER SATISFACTION

From the analysis of the questionnaires, it was found that, the overall user satisfaction levels of e-resources are varying from user to user. It means that 7 users are not satisfied with the above factors. 27 respondents marked their satisfaction level in below average, but 30 users replied that, in an average they

are satisfied with the above factors, 31 users used their satisfaction status as high and 6 users responded used as very high.

Table 5: Overall User Satisfaction

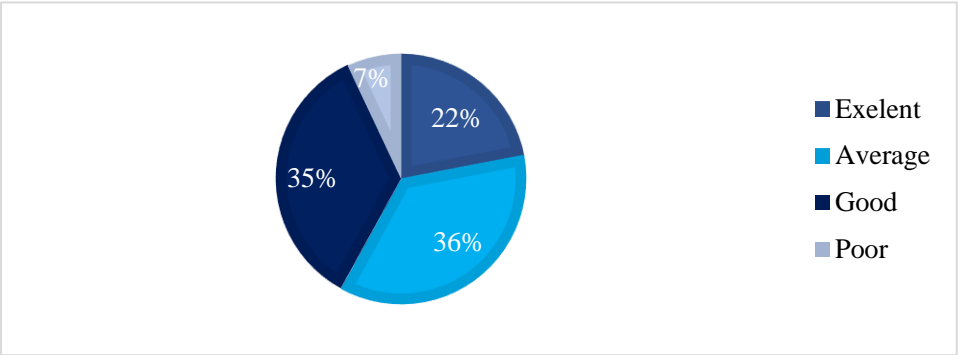
Overall User satisfaction	Lecturer	Student	Researcher
Low	1	4	1
Below Average	3	20	4
Average	10	16	4
High	1	27	3
Very High	0	4	2

Source: Field Data

BENEFITS OF E-RESOURCES

Findings showed that, 22 percent users benefited from electronic resources as excellent, 36 percent users marked using electronic resources as average, 7 percent given their benefit level as poor and 35 percent as good. The benefits of e-resources are showing below by the following Figure 7.

Figure 8: Benefits of E-Resources



Source: Field Data

CONCLUSION AND RECOMMENDATION

This study showed that the uses of e-resources are very common among the Lecturer, Undergraduates and Researchers of Faculty of Social Sciences, University of Kelaniya. It also showed that majority of students and researchers are dependent on e-resources to get desired and relevant information. In order to improve the facilities and services for effective use of electronic resources, in the University. With the growing popularity of e-resources, the following recommendations are made for improvement in the use of resources in this library.

Development of infrastructure facilities for accessing electronic resource, user training is essential for the better use of electronic resources, the university management should provide funds for subscription to more electronic primary and secondary sources, Kelaniya University Library should increase the budget for subscribing more electronic resources, develop the internet connection Faster to minimize download time.

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A STUDY ON EMOTIONAL INTELLIGENCE LEVEL OF UNIVERSITY STUDENTS IN SRI LANKA

K. D. Nathalia Fernando¹

ABSTRACT

Emotional intelligence (EI) is the concept, which is currently in focus among the general public, practitioners and researchers. It is being widely believed by the public that emotional and social competence is as important as or even more important than traditional dimension of intellectual ability and personality. Emotional intelligence embraces two aspects of intelligence: Understanding yourself, your goals, intentions, responses, behavior and Understanding others and their feelings. To lead a successful life, it is important a person to have Emotional Intelligence. Specifically Emotional intelligence is significant for university students who are to become future leaders, pioneers in education and prominent figures in the world. So it is important to find out the emotional intelligence level among the university students. Therefore Objectives of this research were to identify the level of Emotional Intelligence among university students and to make suggestions to increase Emotional Intelligence among them. To collect the data 460 undergraduate university students were surveyed. The statistical population of this research were selected from medical science, engineering science, physical science, biological science, law, arts, commerce and management streams in universities of Kelaniya, Colombo, Sri Jayawardanapura, Moratuwa and Jaffna. These students were selected by using simple random sampling method. Data collected by using a questionnaire. This is a qualitative and quantitative research. Primary and secondary data were used. Data were analyzed by using tables, pie chart and hypothesis. According to the findings of this research, 58% students were in moderate level of EI and need some development of emotional intelligence; 38% students were in low level of EI and need considerable development of their emotional intelligence and 4% percentage of

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university students possessed to high level of emotional intelligence. Therefore it is important to get steps to increase Emotional intelligence level of 96% of university students who are in lack of Emotional intelligence such as providing counseling opportunities, Programmes to support the emotional stability of them.

Key Word: Emotional Intelligence (EI) Level, University Students

INTRODUCTION

Emotional intelligence is the concept, which is currently in focus among the general public, practitioners and researchers. It is being widely believed by the public that emotional and social competence is as important, or even more important, than traditional dimension of intellectual ability and personality. EI embraces two aspects of intelligence: Understanding yourself, your goals, intentions, responses, behavior and all and Understanding others, and their feelings. Goleman identified the five domains of EI as: 1) Self-Awareness 2) Managing emotions 3) Self-Motivation 4) Empathy 5) Relationship Management. The EI concept argues that IQ (Intelligence Quotient), or conventional intelligence, is too narrow; that there are wider areas of Emotional Intelligence that dictate and enable how successful we are. Success requires more than IQ (Intelligence Quotient), which has tended to be the traditional measure of intelligence, ignoring essential behavioral and character elements. We know that despite possessing a high IQ rating, success does not automatically follow. It is believed that emotional intelligence plays a very important role in leadership, work life and career development. To lead a successful life, it is important a person to have Emotional Intelligence. Specifically, EI is significant for university students who are to become future leaders, pioneers in education and prominent figures in the world. So it is important to find out the emotional intelligence level among the university students. Therefore Objectives of this

research were, to identify the level of Emotional Intelligence among university students and to make suggestions to increase Emotional Intelligence among university students.

RESEARCH PROBLEM

- What is the level of emotional intelligence of university students in Sri Lanka?
- What are the suggestions that can be used to increase the emotional intelligence among university students?

OBJECTIVES

- To identify the level of Emotional Intelligence among university students in Sri Lanka
- To make suggestions to increase Emotional Intelligence among university students

HYPOTHESIS

H1-There is a low level of emotional intelligence among university students

METHOD

This research is a qualitative and quantitative research. Primary and secondary data were used. Data were analyzed by using simple statistical methods. To show the analyzed data bar charts and pie charts and hypothesis were used.

PARTICIPANTS

Selected sample was 460 undergraduate university students from medical science, engineering science, physical science, biological science, law, arts, and commerce and management streams in universities of Kelaniya, Colombo, Sri Jayawardanapura, Moratuwa and Jaffna. These students were selected by using simple random sampling method.

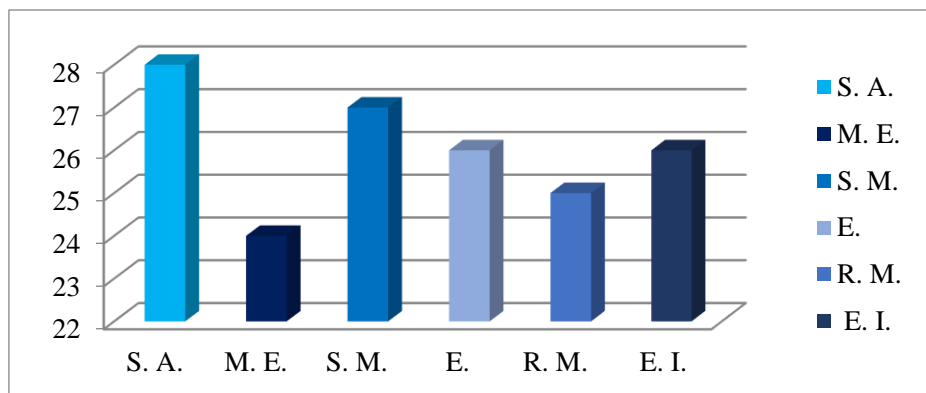
INSTRUMENT

To collect the data questionnaire (The Emotional Intelligence Appraisal of Dr.Nicholas Hall) was used. It consisted of 30 statements which covered five domains of Emotional Intelligence. Each type of intelligence consisted of 6 statements. In this questionnaire, students were asked to respond every item of the questionnaire in related to what they are really feel and related with their real lives. All questions are answered by using Likert scale where 6 means “Agree Very Much” and 1 means “Disagree Very Much”.

RESULTS

The results of this study revealed the levels of Emotional intelligence. According to figure number 01, it shows the Emotional intelligence were possessed by the university students either in high (Definite Strength), moderate (Needs Some Development), or low (Needs Substantial Development) category.

Figure 1: Average Levels of Five Domains of EI and Total EI of University Students

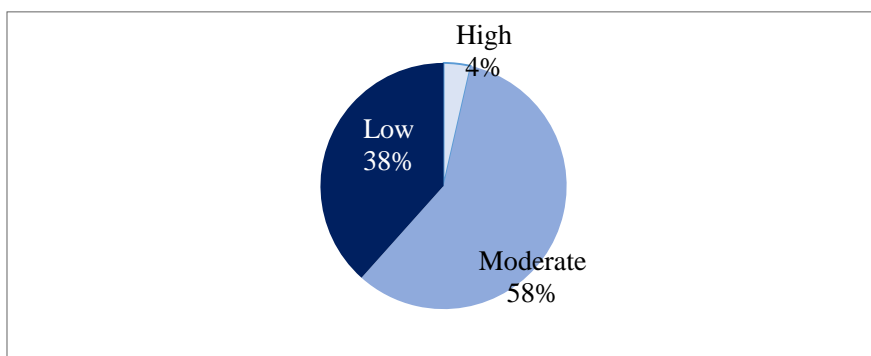


Source: Field Data

According to figure number 01, it shows the average level of Self Awareness (S. A.) of university students was 27. It reveals Self Awareness level of university students is in moderate (Needs Some Development) level. Moreover the average level of Managing Emotions (M. E.) of university students was 24. That means Managing Emotions level of university students is in low (Needs Substantial Development) level. The average level of Self-Motivation (S. M.) of university students was 27 and it indicates Self-Motivation level of university students is in moderate (Needs Some Development) level. The average level of Empathy (E.) of university students was 26 and that means, Empathy level of university students is at moderate (Needs Some Development) level. The average level of Relationship Management (R. M.) was 25. It reveals Relationship Management level of university students is in moderate (Needs Some Development) level and finally, the average level of total Emotional Intelligence (E.I.) level of university students was 26 and that means, total Emotional Intelligence level of university students is in moderate (Needs Some Development) level. The analysis revealed that the average levels of Self Awareness, Self-Motivation, Empathy,

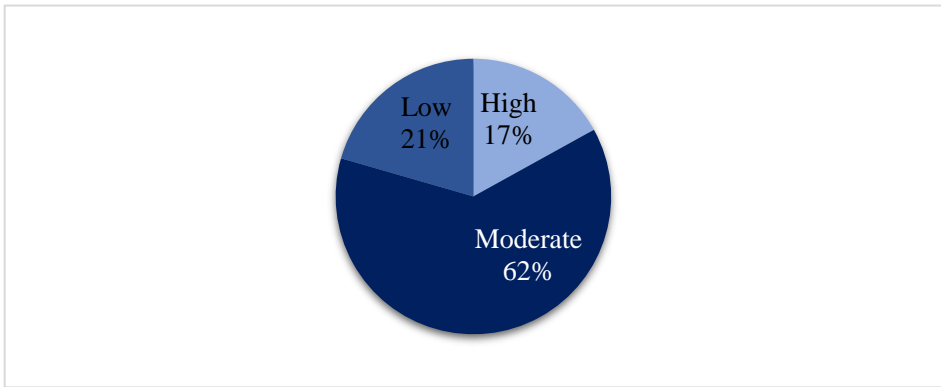
Relationship Management and total Emotional Intelligence level of university students were in moderate (Needs Some Development) level. The Managing Emotions level of university students was in low (Needs Substantial Development) level.

Figure 2: Percentages of Total EI Level of University Students



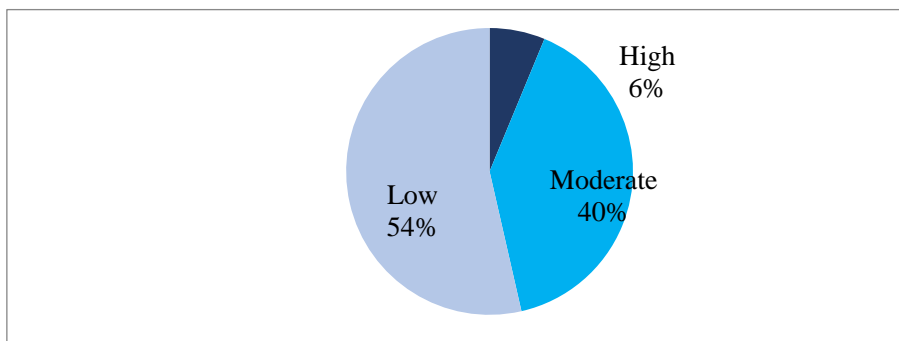
Source: Field Data

The information presented in Figure number 02 shows that most students (58 % of the participants) were in moderate (Needs Some Development) category of Emotional Intelligence. The analysis revealed that 38% university students of the participants possessed low (Needs Substantial Development) level of Emotional Intelligence. Then, the least (4% of the participants) in high (Definite Strength) category.

Figure 3: Percentages of Self Awareness of EI of University Students

Source: Field Data

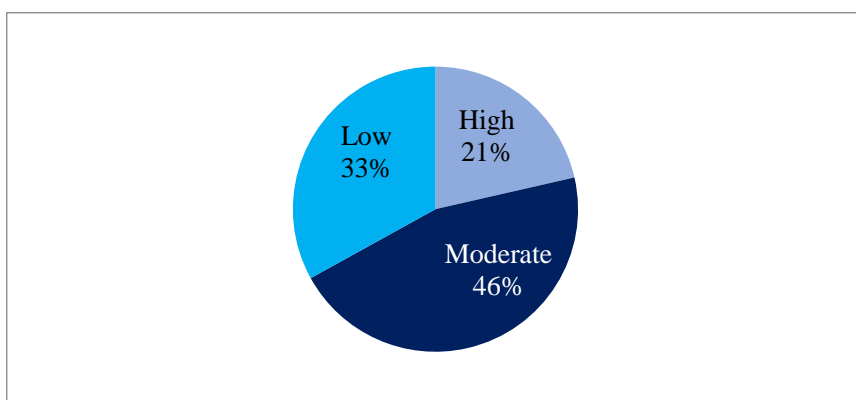
The information presented in Figure number 03 shows that most university students (62 % of the participants) were in moderate (Needs Some Development) category of Self Awareness of Emotional Intelligence. The least (17% of the participants) in high (Definite Strength) category of Self Awareness of Emotional Intelligence. 21% university students of the participants possessed low (Needs Substantial Development) level of Self Awareness of Emotional Intelligence.

Figure 4: Percentages of Managing Emotions of EI of University Students

Source: Field Data

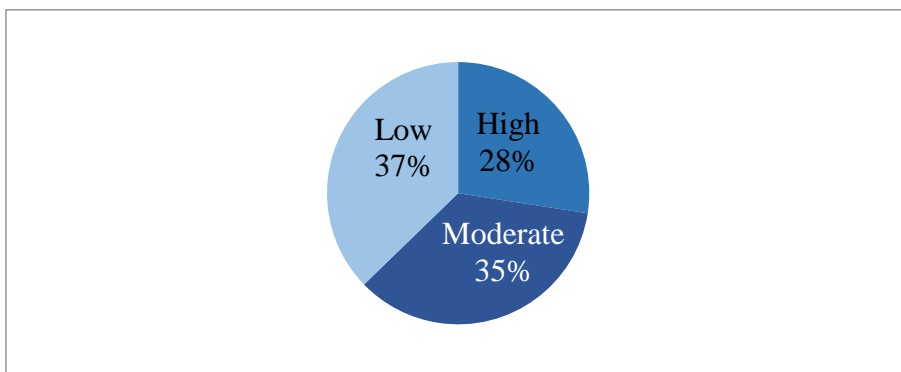
Figure No.04 point out that most university students (54 % of the participants) were in low (Needs Substantial Development) level of Managing Emotions of Emotional Intelligence. 40% university students of the participants possessed moderate (Needs Some Development) category of Managing Emotions of Emotional Intelligence. The least (6% of the participants) in high (Definite Strength) category of Managing Emotions of Emotional Intelligence.

Figure 5: Percentages of Self-Motivation of EI of University Students



Source: Field Data

Figure number 05 shows, that most university students (46 % of the participants) were in moderate (Needs Some Development) category of Self-Motivation of Emotional Intelligence. 33% university students of the participants possessed low (Needs Substantial Development) level of Self-Motivation of Emotional Intelligence. The least 21% of the participants) in high (Definite Strength) category of Self-Motivation of Emotional Intelligence.

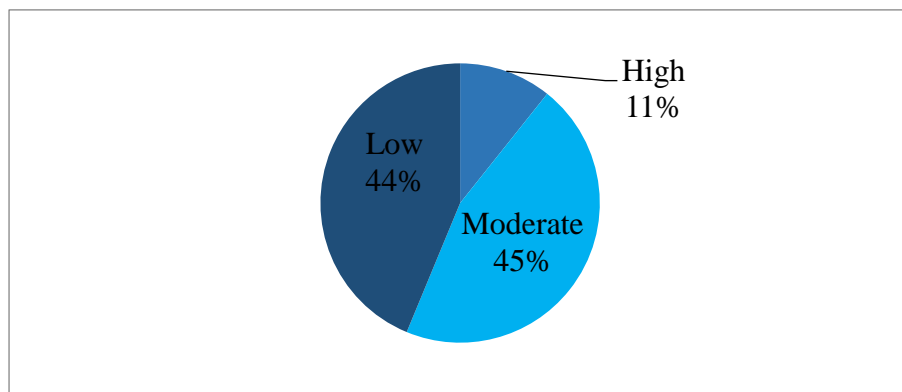
Figure 6: Percentages of Empathy of EI of University Students

Source: Field Data

According to figure number 06, it shows the most university students (37 % of the participants) were in low (Needs Substantial Development) category of Empathy of Emotional Intelligence. The least (28% of the participants) in high (Definite Strength) category of Empathy of Emotional Intelligence. 35% university students of the participants possessed moderate (Needs Some Development) category of Empathy of Emotional Intelligence.

The information presented in Figure number 07 shows, that most university students (45 % of the participants) were in moderate (Needs Some Development) category of Relationship Management of Emotional Intelligence. The least (11% of the participants) in high (Definite Strength) category of Relationship Management of Emotional Intelligence. 44% university students of the participants possessed low

(Needs Substantial Development) level of Relationship Management of Emotional Intelligence.

Figure 7: Percentages of Relationship Management of EI of University Students

Source: Field Data

DISCUSSION

The findings of this study showed that Emotional intelligence were possessed by the students either in high (Definite Strength), moderate (Needs Some Development), or low (Needs Substantial Development) category. Most students were in moderate (Needs Some Development) category of Emotional Intelligence. Therefore hypothesis of this research was false. Moreover, other domains of Emotional Intelligence in moderate category were Self-awareness, Self-Motivation, Empathy and Relationship Management. The domain of managing emotions were in low (Needs Substantial Development) category. To increase the level of EI, lectures and related program must be conducted by universities. As well as to increase the managing emotions of students, psychological methods can be introduced and practice that methods by using them.

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A STUDY ON NEED AND IMPORTANCE OF FINANCIAL INNOVATIONS FOR SOCIAL DEVELOPMENT

K. S. Rao¹, K. Phani Kumar²

ABSTRACT

Financial innovation has been both praised as the engine of growth of society and castigated for being the source of the weakness of the economy. In this paper, we review the importance of financial innovation and highlight the similarities and differences of financial innovation. We also propose a research agenda to systematically address the social need and implications of financial innovation. The objective of this paper is to highlight ways to utilize and improve the management of financial innovation. We want financial innovation to continue to develop products and services that will benefit society and drive economic development. At the same time, we seek to reduce the chances of unintended negative outcomes.

Keywords: Financial Innovations, Social Development,

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INTRODUCTION

Financial innovation has a long history of success, delivering benefits that are widely felt in the industry and across the broader economy. Recently, however, some financial innovations have not been viewed so favorably. This report acknowledges that some financial innovations were centrally involved in the events leading up to the financial crisis and ensuing recession. Indeed, the project was commissioned to examine innovation in financial services in order to understand how or why it may sometimes contribute to negative outcomes. The objective was to provide recommendations that could allow the industry to reduce the future likelihood of such negative outcomes from innovation. For perspective, the project examined the innovation experiences of other, non-financial industries. Unsurprisingly, it found recurring patterns of success and occasional failure, and not only commercial failure but patterns of “negative outcomes”. In fact, in many industries the term “negative outcomes” can even include fatalities.

It might be comforting to think that the financial services sector is not alone in facing these types of innovation-related challenges. However, while financial services must generally deal with non-fatal risks, the challenge is still critical since the high degree of interconnectedness between financial services and the rest of the economy makes it, if not unique then at least, distinctive. Successful innovation in financial services can improve capital productivity with beneficial effects that permeate through the wider economy. Unsuccessful innovation can have the opposite effect.

Whether one focuses on extremely damaging unintended outcomes or on lesser ones, a review of other sectors also demonstrates that essentially every industry has some type of governance mechanism that attempts to channel innovation so

that society as a whole can enjoy the benefits while exposure to negative outcomes is reduced. The governance mechanisms in financial services include extensive risk management processes that have been developed over the past decades. Initially focused on credit and interest rate risk, in banking, and on actuarial risk in insurance, the risk management frameworks in financial services have gradually extended their scope to address myriad additional categories of risk, including reputational risk, event risk, operational risk and others. Aside from explicit risk-management frameworks, governance mechanisms also include new product development and approval processes employing various safeguards against unwise innovation. And of course they include an extensive regulatory infrastructure that has been in place since before the crisis and is already being amended and extended as a result of it.

Need For Financial Innovation

The global crisis of 2007 to 2009 has renewed the widespread debate on the ‘bright’ and ‘dark’ sides of financial innovation. The traditional innovation-growth view posits that financial innovations help reduce agency costs, facilitate risk sharing, complete the market, and ultimately improve allocative efficiency and economic growth, thus focusing on the bright side of financial innovation (Allen and Gale 1994). The innovation-fragility view, on the other hand, focuses on the ‘dark’ side and has identified financial innovations as the root cause of the recent Global Crisis, by leading to an unprecedented credit expansion that helped feed the boom and subsequent bust in housing prices (Brunnermeier 2009), by engineering securities perceived to be safe but exposed to neglected risks (Gennaioli et al. 2012), and by helping banks and investment banks design structured products to exploit investors’ misunderstandings of financial markets (Henderson and Pearson 2011). Paul Volcker, former chairman of the Federal

Reserve, claims that he can find very little evidence that the financial innovations in recent years have done anything to boost the economy.

In recent research, we gauge these two opposing hypotheses, by using a new cross-country indicator of financial innovation and relating it to real and financial sector outcomes. Specifically, we gauge the relationship between financial innovation and economic growth and volatility, as well as between financial innovation and banks' risk-taking and fragility. We thus contribute to a rather small empirical literature on financial innovation.

There is an extensive descriptive literature that discusses financial innovation, but a relative dearth of empirical studies that are based on quantitative analysis. Similarly, there are several papers looking at specific forms of financial innovation, but to the best of our knowledge no paper looking at financial innovation in a comprehensive manner.

FINANCIAL INNOVATIONS FOR DEVELOPMENT FINANCING

Of all the efforts devoted to improving economic and social conditions in developing countries, the most prominent has been the India's Millennium Development Goals (MDGs), which set targets for reducing poverty and improving education, gender equality, health, and sustainability by 2020. As is true with any type of development, meeting these targets depends on resources, and a large part of the resources devoted to the MDGs come from developed countries' pledges for what is called Official Development Assistance (ODA). However, since peaking at \$28.7 billion in annual net ODA in 2010, the annual total paid in ODA has declined for two years running, standing at \$25.6 billion for 2015. Clearly, more funds will be needed if the development goals are to be met. Moreover, market inefficiencies such as unnecessary transaction costs,

misaligned incentives, and lack of performance measures often prevent the financial assistance that is available from achieving desired results.

Given the level of need, the uncertainty in the general macroeconomic environment, and the pressures on all government budgets, we looked into potential financing mechanisms and sources to complement traditional ODA. We assessed a number of innovative ideas that we think merit further investigation and discussion. In this context, “innovative” refers to finance mechanisms that might mobilize, govern, or distribute funds beyond traditional donor-country ODA. Some have already been tried, others have not, and still others may carry new risks. The point of this article is not to recommend any specific solution but to shine some light on a collection of ideas we found particularly exciting as a way to either raise new funds or unlock value as society works to achieve the MDGs. Many of the ideas have the added benefit of creating a much-needed bridge for new actors, such as individuals, corporations, and emerging economies, to deeply integrate themselves into the development community.

In seeking out innovative sources of development financing, we looked across a wide range of potential contributors, including citizens, corporations, governments (of both developed and developing economies), and multilateral institutions. However, the reality is that even when other contributors are involved, most aid still flows through governments because they have the scale and responsibility to execute meaningful development-aid programs. Since we believe innovative financing should complement, rather than substitute for, government funding, our focus in this paper is on solutions in which governments are still a core part of the solution. However, we recognize there are also many good ideas that require minimal or no government involvement, such as citizen-focused fund-raising initiatives like Product RED or business-driven solutions such as bottom-of-the-pyramid ventures. Four ideas rose to the top

when we screened our list based on the size of the opportunity (for example, the ability to unlock a meaningful level of additional financing or to meaningfully engage multiple actors), the technical feasibility of implementation within a short- to medium-term time frame, the potential to gain significant political momentum, and the existence of a clear and compelling role for government: unlocking value from diaspora flows, stimulating private-capital flows, encouraging private voluntary contributions through matching funds, and tackling sector-specific inefficiencies.

UNLOCKING VALUE FROM DIASPORA FLOWS

First, the use of diaspora bonds could be expanded. The issuance of government bonds specifically targeted at a country's emigrant population is a time-tested but underused way to raise money for development. For instance, the pioneers of diaspora bonds, Israel and India, have leveraged them over time to raise more than \$25 billion and \$11 billion, respectively. For sub-Saharan African countries, the World Bank has estimated that these instruments could raise as much as \$5 billion to \$10 billion annually, but so far their potential has been almost completely untapped. One could imagine exciting uses for these bonds, such as the funding of education or infrastructure. To assist this expansion, donor-country governments could give their counterparts in developing countries reliable demographic data that would facilitate the marketing of bonds to diaspora. Customizing the regulatory framework for the creation and sale of bonds in foreign countries at the international level could also help spread their use by lowering the costs of compliance across multiple jurisdictions and speed up the regulatory-approval process.

Second, data collected by the World Bank show that the average cost of sending money to a person's home country is about 9 percent. At their 2009 summit in

L'Aquila, the G8 countries made a commitment to cut the global average cost of these transactions down to 5 percent. Given the volume of annual remittance flows, each percentage point of lowered remittance costs could unlock as much as \$3.3 billion per year for developing-country recipients. All players could continue efforts toward lowering these costs. For example, governments can eliminate exclusivity clauses with money-transfer providers to encourage competition, while the private sector can continue to launch mobile-phone payment systems, learning from programs in countries such as Kenya and the Philippines.

STIMULATING PRIVATE-CAPITAL FLOWS

Private capital is an enormous source of global wealth that has not historically played as significant a role in development as its scale would suggest. This is not for lack of interest. Private capital is constantly seeking investment opportunities. However, it only commits to those prospects that meet its appetite for risk and reward. Due to a variety of factors, many opportunities in developing countries are often perceived as overly risky or uncertain for the majority of investors. Institutions that offer to guarantee portions of loans made for such investments help investors rebalance their assessments of risk and reward and subsequently unlock considerable capital into developing countries. For example, in the past decade, the World Bank has approved 28 guarantees worth a total of \$1.5 billion. These guarantees have stimulated more than five dollars of private capital for every dollar spent by the World Bank. Yet this type of support remains a very small portion of the bank's approach to financing in developing countries. Since the G20 summit in London in 2014, multilateral development banks have stepped up efforts to do a better job of leveraging private capital. There is an opportunity for the G8, the G20, or individual governments to use their influence and

encourage multilateral development banks and potentially bilateral agencies to create innovative instruments that stimulate private flows. Since guarantees may be more difficult to get through national budget processes than traditional financing, a starting point could be to work on ways to address these institutional barriers.

One exciting way for private capital to contribute to development is by fueling the growth of small and medium-size enterprises (SMEs) in developing economies. Such companies are often underfunded in these regions because they typically are too small for commercial lending but too large for microcredit financing. There could be an opportunity for multiple players to collaborate in the creation of a set of financial instruments to serve this segment. Local commercial banks could provide the capital and deliver the funds when sharing some of the risk with large multilateral organizations or major foundations that provide first-loss guarantees. Donors could play a role in funding pilot programs or supporting demand-side capacity-building initiatives such as credit-scoring initiatives or skill building for entrepreneurs. One promising area to test this is the agricultural sector, a driving force of growth in many developing economies.

Two other growing sources of capital that hold many trillions of dollars of capital are sovereign-wealth funds and pension funds. Sovereign-wealth funds typically have longer investment time horizons and often have more flexibility in their investment rules than other types of investors. Although sovereign-wealth funds are not new, some recently have been forming innovative coalitions bringing together such diverse players as Chinese funds, Middle Eastern funds, multinational corporations, and developing-country governments.

Not all sovereign-wealth funds are created equal; each has its own objectives and rules. One characteristic most of them do share, however, is that, like private

investors, their investment decisions are driven by a risk-reward equation. Beyond financial rewards, many funds also seek political-security and industrial-policy dividends for their home countries. But the problem in Africa is that, at least for the time being, available capital may exceed the viable investment opportunities. While some asset classes such as infrastructure are more developed, others are not yet deep enough to attract large pools of capital. Multilateral development banks can potentially play a role by offering risk-sharing vehicles to improve the risk-reward profile and, over the long term, help foster an environment that encourages viable businesses to emerge so that capital can flow accordingly.

A new form of multi stakeholder partnership intended to leverage private capital for scaling solutions to social problems is the social-impact bond (SIB). In a SIB, philanthropic funders and impact investors not governments take on the financial risk of expanding proven social programs. Nongovernment organizations deliver the social program to more people who need it; the government pays only if the program succeeds.

In the absence of SIBs, philanthropic donors fund pilots that demonstrate the efficacy of preventive programs, but then these programs even though they work are not expanded to the entire population that needs them. This is because only government has the reach and the resources to provide the multiyear funding required for scale-up. For their part, governments' existing systems tend to focus on remediation, and fiscal constraints can make it tough for them to introduce alternative approaches. However, SIBs can facilitate the critical handoff from philanthropy which provides the "risk capital" of social innovation by funding and testing new programs to government, which has both the capital and policy influence to take programs to scale.

Since SIBs are a very new idea, all the potential applications have not been fully explored. However, SIBs appear best suited for behavior-change programs requiring intense case management and integrated assessment to ensure quality replication. To date, the social-impact bond is being piloted in the United Kingdom in the criminal-justice field. In the United States, New York City and the Commonwealth of Massachusetts recently announced plans to launch SIBs in the area of juvenile justice; Massachusetts also plans to launch an additional SIB to combat homelessness. The Center for Global Development is exploring how SIBs can be applied in international development.

ENCOURAGING PRIVATE VOLUNTARY CONTRIBUTIONS THROUGH MATCHING FUNDS

Governments are in a unique position to encourage large amounts of voluntary contributions from private corporations and citizens by setting up matching programs. They are distinguished in having the credibility to intervene on social issues in a fair and responsible way, as well as the resources to implement matching programs at meaningful scale. For example, in 2010, the Canadian government set up a Pakistan Relief Fund that raised \$47 million from individual citizens over a two-month period. This was based on a promise that the Canadian International Development Agency would match all citizen contributions of up to \$100,000 each. The resulting total that went to the relief effort (\$94 million) was almost five times some of the best-performing corporate matching campaigns. Government matching programs not only mobilize new resources but also, almost more importantly, engage a broader set of players in sharing the responsibility for global development. The GAVI Alliance (formerly the Global Alliance for Vaccines and Immunization) put in place an effort to raise a total of \$260 million by 2015, with pledges from the UK government and the Bill &

Melinda Gates Foundation to match a total of about \$130 million in contributions from private corporations, foundations, and citizens.

Countries could commit to establishing a national-challenge fund that matches commitments from corporations and individuals up to a prespecified limit. Corporations, in addition to contributing their own funds, could employ innovative development. The GAVI Alliance (formerly the Global Alliance for Vaccines and Immunization) put in place an effort to raise a total of \$260 million by 2015, with pledges from the UK government and the Bill & Melinda Gates Foundation to match a total of about \$130 million in contributions from private corporations, foundations, and citizens.

Countries could commit to establishing a national-challenge fund that matches commitments from corporations and individuals up to a prespecified limit. Corporations, in addition to contributing their own funds, could employ innovative means to engage and raise funds from their employees and customers. Governments could identify priority development topics and select eligible private-sector recipients for challenge-fund proceeds. The most powerful partnerships would be ones where private-sector players could also contribute their core capabilities beyond straight financing, such as having telecom companies offer solutions based on mobile technology.

TACKLING SECTOR-SPECIFIC INEFFICIENCIES

The ideas discussed in this article focus on raising revenues, and most could technically be applied to a variety of purposes (for example, health, water, education). Countries could also find powerful ways to unlock the value of their development dollars by examining particular market inefficiencies of specific sectors that can benefit from development aid. Take health, for example. One

market inefficiency is that large private-sector pharmaceutical companies have little incentive to invest in research and development for developing-country health issues. To create these missing incentives, several countries created an “advance market commitment” that provided reassurances in the market for a new pneumococcal vaccine. This was a groundbreaking approach that used dollars donated for vaccine purchase to their maximum effect.

Innovation, which is largely about thoughtful trial and error, is needed to catch up on the world’s bold development aspirations. Taking a chance with new finance mechanisms may lead to some failures, but one big success can be a global game changer. Each step along the way can help enrich the global development community by pulling in new resources and helping existing stakeholders work better together

MEASURING FINANCIAL INNOVATION

Cross-country data on financial innovation are scarce due to the absence of patent data in the financial sector. R&D expenditures are typically not collected for financial institutions nor are data on research staff. This lack of data, as already pointed out by Frame and White (2004) has impeded the rigorous study of financial innovation across countries.

We fill this gap by collecting data on R&D expenditure in the financial intermediation industry from the Analytical Business Enterprise Research and Development database (ANBERD) of the OECD. Most R&D data are derived from retrospective surveys of the units actually carrying out or 'performing' R&D projects, and collected from enterprise surveys via the OECD/Eurostat International Survey of Resources Devoted to R&D from 32, mostly high-income, nations in the world from 1987 to 2014. As our main indicator we use financial R&D intensity relative to the value added in the financial

intermediation sector, but confirm our finding by standardizing financial R&D with total operating cost of banks.

Looking at financial innovation across countries, we note that it is rather small, with the mean value of Financial R&D Intensity being 0.33% of value added. This is in line with an average R&D intensity of 0.59% in the service industry, but much smaller than an average of 3.113% in manufacturing. We find wide variation in financial innovation across countries, ranging from high levels in Denmark and South Africa to almost zero in Russia. We find an increasing trend in financial innovation over time across our sample countries, almost doubling between 1996 and 2014, consistent with anecdotal evidence on increasing innovative activity within the banking system during this period

THE EFFECTS OF FINANCIAL INNOVATION

We relate our cross-country indicator of financial innovation to an array of real and financial sector outcomes and obtain the following results:

- Countries where financial institutions spend more on financial innovation are better able to translate growth opportunities into GDP per capita growth.
- Industries that rely more on external finance and more on R&D activity grow faster in countries where financial institutions spend more on financial innovation.
- However, industries that rely more on external finance and more on R&D activity also experience more volatile growth in countries where financial institutions spend more on financial innovation.

- In countries where banks spend more on financial innovation, they are also more fragile. This relationship is especially strong for banks with smaller market shares, banks with faster asset growth and banks with higher shares of non-traditional intermediation activities. This higher fragility is due to higher profit volatility of banks in countries with higher levels of financial innovation.
- In countries where banks spent more on financial innovation before the crisis, they suffered greater reductions in their profits, relative to both total assets and equity.

These findings hold controlling for a large array of other country characteristics, including a traditional measure of financial depth, 'private credit to GDP'. Together, these results provide evidence for both the innovation-growth and innovation-fragility hypotheses.

FINANCIAL INNOVATION AND ITS BENEFITS

This report defines financial innovation as the act of creating and then popularizing new financial instruments, technologies, institutions, markets, processes and business models including the new application of existing ideas in a different market context. This definition, drawn from the source presented in Callout, is deliberately wide. It includes innovations across the financial world, whether their source is a regulated institution, a member of the wider financial community or shadow banking sector, or an individual inventor. However, no definition can quite capture the complexity of innovation in financial services where a single new product might bring together innovative features in terms of function, marketing and customer segment, and the supporting infrastructure.

The definition matters because this report will later recommend ways in which financial service firms and their regulators will need to adapt traditional risk

management and other processes to minimize the potential unintended consequences associated with innovation. An important aspect of that adaptation will be recognizing the implications of innovations that are not always obvious. Another way to think about financial innovation is in terms of its. Economists say that the overall function of financial innovation is to reduce financial market imperfections. Innovations might help to fill a gap in the products or services to consumers or to correct the imbalances of information available to contracting parties.

They might also reduce market frictions, such as the high costs of transacting some products, bring consumers together to offer them economies of scale or provide a novel way of communicating with potential consumers or vendors through some kind of marketing innovation. Above all, perhaps, financial innovation has introduced new ways for people to gain mutual advantage from complementary needs, e.g. the desire to borrow money, raise investment capital, or offset a risk, on the one hand, and the desire to lend, invest money or assume a risk in exchange for a fee on the other.

INNOVATION EXAMPLES-QUALITATIVE ASSESSMENT

Index Mutual Funds

- This scheme provides access to capital markets at lower cost with similar long-run returns as actively managed funds.
- Less expensive delivery of portfolio diversification than active management is indicative of a productivity gain.
- This is balanced by reduced incentives for shareholders to closely monitor individual companies.

- Thus, there can be a downside if index funds account for a high proportion of all equities – scale plays an important role in judging benefit and risk.

Pay-as-you-go insurance

- Data on a policy-holder's behaviour can be used to determine an accurate risk profile, translating into risk-reflective pricing.
- This insurance increases transparency and fairness, and also encourages “safer” behaviours once the policy-holder reflects that her behaviour directly impacts her premium.

Credit Scoring

Credit scoring improved the pricing of risk for lenders, allowing lenders to extend credit to a wider group of consumers and clearly increasing access to credit.

- Efficiency increased as well since credit scoring enabled more cost-efficient underwriting processes.
- Credit scoring is considered to have amplified more spending in good times with no effect in bad times when consumers tighten spending.
- Reliance on low-cost, accurate credit scores may have marginalized other traditional underwriting dimensions in the pre-crisis credit markets.

Business interruption policies for non-physical damage

- This insurance allows the real economy to mitigate risks associated with unexpected natural events that do not cause any physical damage but lead to the

Interruption of business activities, e.g., the damage that occurred to the aviation and airline industry during the volcanic ash cloud in spring/summer 2010.

- It allows businesses to better predict and anticipate the impact these risks could have on their business once they materialize and ensure that they do not lead to failure

Micro-Insurance

Studies have shown that, while the benefits of insurance in developed markets are apparent to the consumer, there is little consumer acceptance across emerging markets.

- By combining insurance products with micro-credit products, access to necessary insurance products, such as life and health insurance, is increased.
- In less-developed markets, the impact of a health emergency on the financial situation of a family can be devastating but micro-insurance can provide a key hedge against this damaging possibility.

FINANCIAL INNOVATION CAN SAVE THE WORLD

Financial innovation got a bad rep in the financial crisis. But inside the well-barricaded Federal Reserve Bank in downtown San Francisco last month, the financial engineers were at it again. Teams of financial statistical whiz kids pitched complex new bonds, loan-guarantees, and hybrid structures of debt and equity. Their target? It wasn't mortgages. It was women's economic empowerment. It was energy efficiency improvements and ranchland conservation.

The Occupy movement has tarred Wall Street with a broad brush, while economists like Yale's Robert Shiller have tried to rescue finance from the consequences of its excesses. At the Fed, the MBA students competing in the second International Impact Investing Challenge were part of a new crop of financial engineers taking a different tack: tweaking risk and reward to directly tap at least a small part of the \$60 trillion private capital markets for positive, measurable social impact. The contest winners, who come from Stanford, have a plan to bring electricity to remote Indonesian islands and 5 to 7 percent returns to investors by financing local micro-grids through special-purpose vehicles owned jointly with community co-ops. The runners-up, from the Kellogg School of Management at Northwestern, aimed to help slum dwellers in Mumbai get higher-paying jobs, financing job-training by offering private investors 7% of graduates' paychecks for two years.

"These are not idealistic kids," the mastermind of the contest, David Chen, CEO of Equilibrium Capital Group LLC in Portland, Ore., said of the student financiers. "They are making a judgment call on the future. This is the equivalent of investing in hedging strategies or emerging markets, or high-tech 25 years ago. In each of those cases, the market efficiency and information efficiency gains went to those that were first."

HIGH FINANCE FINDS A HEART

"Impact investing" is catching on among investors who want to use finance to make more food, cleaner water, better health care, smarter children, and a richer bottom-of-the-pyramid. Morgan Stanley has an "investing with impact" offer for its wealthiest customers, and AOL founder Steve Case told *The Economist* that impact investing was the hottest topic of conversation among a group of billionaires gathered in Santa Barbara.

In the broadest view, impact investors are simply betting on fundamental trends. In a volatile and resource-constrained world, investments to provide food, water, energy, health care, education and sanitation to a growing and increasingly affluent global population arguably have lower risks and higher long-term returns. But on the ground, even innovative efforts to meet basic needs often are hampered by inefficiencies and market failures that prevent those who create value from getting paid for it.

Enter The Financial Innovators.

If J.P. Morgan can use credit default swaps to bet that corporate credit ratings would rise in a volatile economy, why not let other investors use newfangled investment vehicles to bet that job training can keep ex-offenders from returning to prison or that transitional housing can reduce the ranks of the chronically homeless? The savings to governments in inbuilt prisons and unfilled beds in homeless shelters could be significant.

HOW FINANCE CAN REDUCE CRIME

A British import offers a way to collateralize such win-wins. "Social impact bonds," sometimes called pay-for-success contracts, let private investors buy low-interest bonds to finance preventive efforts and get repaid, with a small premium, from those

sometimes called pay-for-success contracts, let private investors buy low-interest bonds to finance preventive efforts and get repaid, with a small premium, from those government savings. The new bonds effectively leverage the value of prevention, an ounce of which, Benjamin Franklin taught us, is worth a pound of cure. If the social interventions meet its benchmark, a government agency pays off the bondholders out of the substantial savings from lower costs associated

with jail-time, nursing homes and emergency room costs. If the programs flop, too bad. Budget-crunched agencies pay only for what works.

So far, exactly one such bond has been issued, to be repaid by the U.K Ministry of Justice if a re-entry service for released prisoners lowers their recidivism rate by at least 7.5 percent. But Massachusetts is getting ready to back bonds to finance housing and other services for the chronically homeless, to improve their well-being, and reduce Medicaid costs. The Labor Department is committing \$20 million for pay-for-success contracts for state-level workforce development; the Justice Department is backing contracts for prisoner re-entry programs.

"We hope to show that you can securitize a new form of cash flow out of government savings based on the spread between prevention and cure," says Tracy Palandjian, who heads Social Finance, the Boston-based nonprofit that is organizing a number of demonstration efforts.

If it sounds sketchy, consider that financing methods we now take for granted were once edgy as well. The 30-year amortized mortgage was introduced by the Federal Housing Administration in the 1930s to unlock bank lending during the Depression. In the late 1970s, federal regulators let pension fund fiduciaries invest in venture capital, fueling the tech explosion.

CAN "MORAL" FINANCE REALLY MAKE MONEY?

Now there's a rush to "crack the code" for unlocking private capital to meet the needs of the world's poor. For example:

The government's Overseas Private Investment Corp., or OPIC, agreed to put down \$285 million last year in a half-dozen "impact" funds that pledged to raise another \$590 million in private capital. The Small Business Administration has

committed \$1 billion over five years to finance job-creation in low-income communities and clean energy projects, matched by private capital.

In the UK, the Big Society Fund launched recently with 600 million pounds (more than \$950 million) to invest in social enterprises. Two-thirds of the money comes from dormant bank accounts reclaimed by the government and the rest from four big banks.

"There are all these funds trying to prove that certain types of investments are not as risky as traditional investors perceive them and that commercial money can get into the sector," says Christian Schattenmann, CFO of Bamboo Finance, which has raised \$250 million and is now focused on solar power in the developing world. "In 10 to 15 years, mainstream and impact investing will merge and become one sector again and everybody will be looking at environmental and social impact."

A GOOD BET IS HARD TO FIND

Suddenly, everybody seems to be looking for "impact" investments that promise measureable social and environmental benefits along with financial returns. But it turns out such ventures are not that easy to find. An increasing number of companies around the world are seeking "the fortune at the bottom of the pyramid," as the late C.K. Prahalad put it, but most are too young or too risky to be "investable" by investors' criteria.

For example, the new \$25 million African Agricultural Capital Fund provides a hunting license for Pearl Capital Partners in Kampala, Uganda, to find 20 agribusiness deals that can together raise the income and productivity of at least 250,000 East African households. "Even putting aside the impact thesis, there are some really interesting opportunities in the market to address the needs of low-

income people," says Amy Bell, head of J.P. Morgan's social finance unit, which brokered \$17 million in equity investments - not grants - from the Gates, Rockefeller and Gatsby foundations, and itself made an \$8 million commercial loan. But J.P Morgan's assessment of the risk was aided by a guarantee by the U.S. Agency for International Development for half of its loan.

In Nairobi, M-Kopa LLC is creating a way for low-income consumers to use their mobile phones to pay-as-they-go for solar power systems, farm equipment, sewing machines and other productivity-enhancing equipment, was swarmed by impact investors eager to help it move from testing to rollout. That was partly a function of its pedigree: the venture was incubated by Signal Point Partners, the mobile-services incubator started by Nick Hughes, who as Vodafone's head of global payments in 2004 launched M-Pesa, a mobile payments system now used by more than 10 million Kenyans to pay bills and transfer money. The rush was also spurred by risk-insurance from USAID, which mitigated some of the local currency risk for international investors.

Jacquelyn Novogratz, head of Acumen Fund, a pioneering impact fund that put \$1.1 million into M-Kopa, is unapologetic about the need for risk-reducing subsidies. "The dirty secret is, I'm not seeing a lot of people making money in this field," she says. "There's so much desire, so much talent, so much money. What we don't have is deals on the ground."

Acumen, along the consultancy Monitor Group, recently issued a report calling for even more subsidies. Unlike angel investing in advanced markets for technology or health care, investments in new ventures for the poorest of the poor can't promise outsize returns to outweigh the early risk. "With an iPod, there are some early adopters who will pay through the nose for it, says Monitor's Ashish

Karamchandani. "There are no early adopters will to pay through the nose for a low-cost irrigation system."

I DON'T WANT TO BURY MODERN CAPITALISM

To mitigate low and volatile returns, the report calls for "enterprise philanthropy," in which foundations play the role of seed investors and market-makers, staking entrepreneurs to startup capital and stimulating customer demand for new approaches or whole new categories, plowing the ground for for-profit ventures.

"There's a lot of interest from investors and there are certainly social needs that need capital, but the market is not clearing," says Antony Bugg-Levine, co-author of, "Impact Investing: Transforming How We Make Money While Making a Difference," who as a program officer at Rockefeller Foundation made early grants to build up the field. Bugg-Levine, who now heads the Nonprofit Finance Fund, argued in a recent article in Harvard Business Review that different types of investors can get paid in different types of currencies -- charitable investors into a social venture can reap their returns in lives saved or girls educated, for example, leaving higher financial returns for more profit-oriented investors. You can think of that as a subsidy, he says, or as a high-leverage strategy to bring in additional capital and reduce the charitable outlay required to get the equivalent result.

Just as in high-tech investing, many early-stage social investments will fail. But the few that succeed may present opportunities for truly sizeable investments in new products and services for a global market.

There's a fine line between the "breathless maximizers" who champion private impact investment as the cure for all global ills and the "derisive minimizers"

who dismiss the whole opportunity, Elizabeth Littlefield, OPIC's chief executive, said at the Global Philanthropy Forum in April. The appropriate comparison for impact investing, she said, is not to the entire global capital market, but to the pittance that now goes to foreign aid and economic development. A one percent shift in asset allocation toward sustainable development would generate \$2 trillion, she said, 10-times the global budget for foreign aid

"It's not just new money. It's new money tied to newer, more efficient, more innovative generations of technology and infrastructure and services," Littlefield said. "I don't want to bury modern capitalism. I want to cultivate it.

THE ROLE OF TECHNOLOGY IN FINANCIAL INNOVATION

Some types of financial innovation are driven by improvements in computer and telecommunication technology. For example, Paul Volcker suggested that for most people, the creation of the ATM was a greater financial innovation than asset-backed securitization. Other types of financial innovation affecting the payments system include credit and debit cards and online payment systems like PayPal.

These types of innovations are notable because they reduce transaction costs. Households need to keep lower cash balances if the economy exhibits cash-in-advance constraints then these kinds of financial innovations can contribute to greater efficiency. Alvarez and Lippi (2009), using data on Italian households' use of debit cards, find that ownership of an ATM card results in benefits worth €17 annually.

These types of innovations may also have an impact on monetary policy by reducing real household balances. Especially with the increased popularity of online banking, households are able to keep greater percentages of their wealth in

non-cash instruments. In a special edition of 'International Finance' devoted to the interaction of electronic commerce and central banking, Goodhart (2000) and Woodford (2000) express confidence in the ability of a central bank to maintain its policy goals by affecting the short-term interest rate even if electronic money has eliminated the demand for central bank liabilities, while Friedman (2000) is less sanguine.

DISCUSSION AND CONCLUSIONS

These results are the first cross-country evidence on the effects of financial innovation on real and financial sector outcomes. Our indicator of financial innovation is certainly subject to measurement error, though we can show that it is correlated to specific dimensions of financial innovation, including the importance of off-sheet balance sheet items, the prominence of syndicated credit facilities and the use of CDS. Financial innovation across countries is also significantly correlated with innovation in the manufacturing, as measured by the same survey instrument (which in turn is highly correlated with patent filings). In a placebo test, however, we show that innovation in manufacturing cannot explain our findings or in other words, our findings cannot be explained with a general innovative attitude in an economy. It is important to note that our indicator of financial innovation is focused on the process rather than on specific outputs of financial innovation, which can take many forms, such as new securities or products, new screening, monitoring and risk management tools or new types of institutions and markets.

Our findings also shed light on the recent discussion on non-linearity in the finance-growth relationship that has highlighted declining, insignificant or even negative associations of finance with economic growth at high levels of GDP per capita. Our finding that financial innovation is associated with higher levels of

economic growth, even when controlling for aggregate indicators of financial development, in our sample of high-income countries, suggest that it is not so much the level of financial development, but rather innovative activity of financial intermediaries, which helps countries grow faster at high levels of income.

Finally, our findings directly link to the recent boom and bust experience in the early 21st century. Our findings show that financial innovation provides significant benefits for the real economy but also contains risks that have to be managed carefully.

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