Profiling Existing Research on Social Innovation in the Public Sector

Nripendra P Rana*
n.p.rana@swansea.ac.uk

Vishanth Weerakkody
Vishanth.weerakkody@brunel.ac.uk

Yogesh K Dwivedi*
y.k.dwivedi@swansea.ac.uk

Niall C. Piercy*
n.c.piercy@swansea.ac.uk

* School of Management, Swansea University, UK
Business School, Brunel University, UK

ABSTRACT

This study explores the progress of social innovation research in a public sector context by systematically analysing its existing body of knowledge to identify areas of societal impact and reveal areas of limitations and potential further research. The findings revealed that most of the studies on social innovation in the public sector are conceptual in nature. The paper presents propositions based on the diagnosed limitations of research in the area.

Keywords: Social innovation, innovation, literature review, public sector, profiling

1 INTRODUCTION

The phrase 'social innovation' emerged primarily from the Francophone intellectual community in both Europe and Quebec from the 1970s onwards (Chambon et al., 1982). It is used to refer to academic and other scholarly activity that engages actively with contemporary social problems to accomplish socially beneficial outcomes (Scott-Cato and Hillier, 2010). The concept of 'social innovation' has, by now become a commonly – but not consistently – used term in the literature on innovation (Moulaert et al., 2005). In the conventional social science literature of the 1990s, the notion of 'social innovation' was almost entirely restricted to management science and business administration as a dimension of innovative 'business strategy' (Moulaert et al., 2005). Mulgan (2007) argued that even though the literature on business innovations is extensive, the systematic analysis of social innovations and associated benefits and contexts is in its infancy. The author further revealed that there has been a growing field of research on public sector innovations building on some pioneering work in the 1960s and 1970s. Our research on the studies of social innovations in the public sector indicates that there has not been any effort made till date toward the comprehensive review of such literature. Realising a huge gap in this area of research, the current publication will systematically analyse the available literature on social innovation in a public sector context. By doing so, we provide a useful source of information to the readers who wish to learn more about the different aspects of the published research on social innovations in a public sector context. Moreover, by undertaking the systematic analysis of literature we also provide compiled information on the key areas addressed in prior research of social innovations including how social innovation research tends to be carried out and what areas have been emphasised usually and/or neglected. Such studies on social innovations in the public sector will allow researchers to identify the research gaps in the existing body of knowledge and would suggest further lines of enquiry in this area.

The rest of the paper is structured as follows: In the next section we describe the research methodology used. This will be followed by the findings section where we present the demographics of analysed publications in different sub-sections including the most productive authors, university affiliation according to country, contributing universities/institutions, publications according to year, research areas, publication outlets for social innovation research, and sources of social innovation research by country. The further sub-section provides keyword analysis, analysis of theories, models and frameworks used, and a brief summary of research methodology used across the available literature on social innovation. The paper then provides a brief discussion on all the available literature on social innovations in the public sector. The subsequent section then accumulates the limitations of the available research and formulates five propositions for future research to follow-up. The paper concludes by outlining the theoretical contributions, limitations, and scope of future work in this area.

2 RESEARCH METHOD

This study used a comprehensive search process to collect and analyse relevant articles on social innovation. The search was performed in December 2013. The researchers used a combination of keywords such as 'Social Innovation' and 'Social Innovations' using logical operator OR in the ISI Web of Knowledge database. The initial search found a total of 210 articles. Further, a manual screening was performed to ensure that the searched keywords appear at least once in the abstract. The manual search of the individual articles indicated that 25 of them were such where these keywords were not used. Therefore, these 25 articles were discarded, which left 185 usable articles for further review. These 185 articles were then searched for their full access through Google Scholar. Out of a total of 185 articles, full access of 92 articles was obtained whereas 75 articles were not accessible. Another 13 articles were either partially accessible or only their abstracts were in English and the main contents were found to be in Spanish, French or German language. In addition, five articles were found which were published over three decades ago, from the 1970s or 80s and hence were discarded as their findings did not add value to the current perspective on social innovation. This led the total number of usable articles for further review to be 105. However, all 185 articles were used for analysing the demographic characteristics of social innovation research.

The 185 articles were scanned for demographic characteristics including prolific authors, contributing universities/institutions, most productive research areas, university affiliation according to country, frequency of publication, publication outlets, and categories of research articles. Moreover, this study also provides the details of articles analysed in terms of evaluating theories and models used, methods employed, an overall account of keyword and topic analysis as a part of its findings. This study also provides an accumulative account of limitations encountered by existing research on social innovation and propositions for their guiding future research.

3 FINDINGS

3.1 Demographics of analysed publications

3.1.1 Most Productive Authors

Our analysis of the most productive authors revealed that 341 authors contributed to the 185 articles on social innovation. Table 1 demonstrates 3 authors who have published three or more papers and 18 authors who have published two articles each. However, not shown in the Table, the largest number, 320 authors, contributed to one article each. This clearly indicates that studies on social innovations are not yet dominated by any highly productive individuals or their groups. This is also evident from the publications currently being scattered across a large number of authors either contributing fewer articles or only one article each.

Table 1: Most Productive Authors

Author	# of Articles	Author	# of Articles

Mumford MD	4	Klein JL	2
Moulaert F	3	Le Ber MI	2
Westley F	3	Linton JD	2
Bestujevlada IV	2	Manzini E	2
Blakely C	2	Mccarthy M	2
Bosch G	2	Moore ML	2
Branzei O	2	Novy A	2
Emshoff J	2	Swyngedouw E	2
Gonzalez S	2	Tremblay DG	2
Gray DO	2	Wagner A	2
Henderson H	2		

3.1.2 University Affiliation According to Country

Table 2 presents 21 countries whose universities/institutions contributed the most on social innovation related research publications. Of a total of 206 occurrences from 39 distinct countries and 211 universities, the highest proportion of work was produced from universities in the USA (#38, 21%), followed some way behind by England (#28), Canada (#22), Germany (#14), Italy (#11), and Spain (#11). Moreover, universities from Japan, Sweden, and Russia contributed with four publications each whereas Lithuania and China contributed with three publications each. The relatively low ranking of USA-based universities in Table 3 and their top-ranking in Table 2 is explained by the diffusion of social innovation based research across a large number of institutions in the USA, each producing a comparatively low number of publications. Similarly, the relatively low ranking of Canada as an originating country for social innovation research in Table 2 and its top ranking in the list of universities contributing the most number of publications can be explained by the concentration of social innovations based research in some leading universities of that country (e.g. University of Quebec and University of Waterloo).

Table 2: University Affiliation According to Country

Researchers' Originating Country	#	% of 185	Researchers' Originating Country	#	% of 185
USA	38	20.54	Japan	4	2.16
England	28	15.14	Sweden	4	2.16
Canada	22	11.89	Russia	4	2.16
Germany	14	7.57	Lithuania	3	1.62
Italy	11	5.95	China	3	1.62
Spain	11	5.95	Scotland	3	1.62
Netherlands	10	5.41	Belgium	2	1.08
France	9	4.87	Denmark	2	1.08

Australia	7	3.78	Estonia	2	1.08
Austria	5	2.70	Slovakia	2	1.08
Finland	4	2.16			

3.1.3 Contributing Universities/Institutions

Table 3 illustrates 13 universities associated with the highest combination of the number of papers published. University of Quebec in Canada with eight publications is on the top of this list. University of Oxford in the UK, University of Waterloo in Canada, and University of California in the USA appear jointly as the second largest contributors in the list of universities with six published outputs each. Moreover, three universities contributed to five papers each, two universities with four papers each, and four universities with three papers each. Not shown in the table, 28 other universities/institutions published two papers each, and 168 universities/institutions published one paper each. The findings indicate that majority of leading universities publishing research on social innovation largely belong to the US, the UK, and Canada.

Table 3: Publications by University/Institution

University	Articles (#)
University of Quebec	8
University of Oxford	6
University of Waterloo	6
University of California	6
CNRS	5
Newcastle University	5
North Carolina State University	5
University of London	4
University of Oklahoma	4
Eindhoven University of Technology	3
Michigan State University	3
University of Basque Country	3
University of Western Ontario	3

3.1.4 Publications according to Year

Analysis of the number of research publications (see Table 4) indicates that 2012 was the most productive year for social innovation based research where the highest number (#33) of papers was published. This is followed by the year 2011 with the second largest number (#27) of papers. Both years 2007 and 2010 published 17 papers each. The fourth largest number (#11) of publications appeared in the year 2003. Year 2008 with nine papers and years 2004 and 2006 with six papers each were the subsequent productive years for this research. Four articles were published in the year 1999 whereas years 1991, 1996, and 2002 published only three articles each. At the time of undertaking this research, only three articles could be accessed for the year 2013. Not listed in table 4, two articles each were published in eight different years and one article each was published for the same number of years. These results demonstrate that although there is much emphasis on social innovation research in recent years, there is no determined trend in publications of this research through its evolution in the early 1970s to present day.

Table 4: Publications according to Year

Year	#	Year	#
2012	33	2004	6
2011	27	2006	6
2007	17	1999	4
2010	17	1991	3
2003	11	1994	3
2008	9	1996	3
2005	8	2002	3
2009	8	2013	3

3.1.5 Research Areas

Table 5 presents the major thematic areas of social innovation research. The analysis indicates that social innovation research is largely explored (51 times) in the Business and Economics discipline. This is followed by some other disciplines including Environmental Sciences and Ecology (25 times), Psychology, Public Administration, and Sociology (21 times each), Engineering (16 times), Urban Studies (13 times), and Public Environmental, Occupational Health and Social Sciences (12 times each) to name a few. The other research areas presented in the table and a number of others that could not be demonstrated indicate that this research has appeared in a diversified number of disciplines from Art, Science, Engineering, Social Sciences, Chemistry, Geography, Agriculture, Architecture, to Medical and Health Sciences.

Table 5: Research Areas for Social Science Research

Research Areas	**Freq**
Business Economics	51
Environmental Sciences Ecology	25
Psychology	21
Public Administration	21
Sociology	21
Engineering	16
Urban Studies	13
Public Environmental Occupational Health	12
Social Sciences Other Topics	12
Operations Research Management Science	11
Education Educational Research	10
Social Work	10
Arts Humanities Other Topics	9
Government Law	8
Geography	6
Science Technology Other Topics	6
Art	5
Social Issues	5

3.1.6 Publication Outlets for Social Innovations Researchers

Table 6 illustrates 19 outlets that have each published two or more social innovation based research. International Journal of Technology Management (#8) is the leading journal that has published 8 articles. This is followed by American Journal of Community Psychology (#7), Arbor Ciencia Pensamiento Y Cultura (#6), Urban Studies (#6), European Urban and Regional Studies, Futures, and Sotsiologicheskie Issledovaniya (with five articles each) which were some

of the leading outlets for social innovation research. Similarly, some high-ranking internationally recognised journals including Technovation (#3), Harvard Business Review (#2), and Lecture Notes in Computer Science (#2) also appear in Table 6. In addition to the publication outlets presented in Table 6, there are further 112 outlets presenting one article each, which have not been shown in the table. As such, our analysis indicates that articles on social innovation have not appeared only in specific publication outlets, but rather, it is scattered across a range of different journals concerning different disciplines.

Table 6: Journals Publishing Social Innovation Research

Journal Name	**Freq**
International Journal of Technology Management	8
American Journal of Community Psychology	7
Arbor Ciencia Pensamiento Y Cultura	6
Urban Studies	6
European Urban and Regional Studies	5
Futures	5
Sotsiologicheskie Issledovaniya	5
Codesign International Journal of Cocreation in Design and the Arts	4
Creativity Research Journal	4
Ecology and Society	3
Technology Analysis Strategic Management	3
Technovation	3
Applied Geography	2
Harvard Business Review	2
Journal of Business Ethics	2
Lecture Notes in Computer Science	2
Science	2
Society Natural Resources	2
Sociologia	2

3.1.7 Sources of Social Innovations Research by Country/Continent

Table 7 presents a list of countries/continent where social innovations related research has been undertaken. By far the most popular source of such research is the USA (#14), followed some way behind by the UK (#13), Canada (#9), Europe (#7), and Italy (#5), four instances each of Germany and Netherlands, three instances each of Australia, Austria, China, Japan, Norway, Spain, and Sweden, and two instances each of Norway, Spain, Sweden, and South Africa. Countries (not included in the Table) such as Belgium, Brazil, Denmark, East Africa, Finland,

France, Ghana, Hungary, Portugal, Slovakia, Taiwan, Tanzania, and Zimbabwe are each used only once as far as social innovation research in the public sector is concerned.

Table 7: Most Used Countries by Venue for Social Innovations Research

Country/Continent	Freq	Country/Continent	Freq
USA	14	Austria	3
UK	13	China	3
Canada	9	Japan	3
Europe	7	Norway	2
Italy	5	Spain	2
Germany	4	Sweden	2
Netherlands	4	South Africa	2
Australia	3		

3.2 Keyword Analysis

Table 8 lists the 28 most frequently used keywords (each occurring two or more times across 105 studies) in social innovation research. These keywords account for 97 of the overall total of 349 keywords occurrences of 279 unique keywords identified. As expected “Social Innovation” (#26) appeared most often followed by “Innovation” (#11), “Climate Change” (#5), and “Social Network” (#4). Also, keywords such as “Environment”, “Participatory Research”, and “Social Entrepreneurship” appeared three times each, whereas other keywords including “Adaptation”, “Behaviour”, “Civil Society”, “Community”, “Complex Systems”, “Complexity”, “Discourse”, “Dissemination”, “Governance”, “Learning”, “Limits”, “Management”, “Power”, “Self-Management”, “Social Change”, “Social Economy”, “Sustainability”, “Sustainable Innovation”, “Carbon Dioxide”, “Corporate Social Responsibility”, and “Information Technology” appeared two times each.

However, a number of keywords (#251) have appeared only once but hold significant meaning and so needs further exploration in the context of social innovation research. For example, there are 18 unique keywords (not mentioned in Table 8) such as “social capital”, “Social Enterprise”, “Social Entrepreneur”, “Social Innovation Park”, “Socially Innovative Services”, “Social Learning”, “Social Media”, “Social Network Approach”, “Social Organisation”, “Social Organizing”, “Social Pedagogy”, “Social Policy”, “Social Problems”, “Social Techno Sciences”, “Social Value Creation”, “Socio-Technical Change”, “Socio-Technical Regime”, and “Socio-Technical Systems” starting with the words “social”/”socio” with only one occurrence each. These terminologies hold special meaning which are directly associated to the research of social innovation. Moreover, other keywords with only one occurrence are under-represented and hence are worthy of further exploration.

Table 8: Keyword Analysis

Keyword	Freq	%	Keyword	Freq	%
Social Innovation	26	7.4	Dissemination	2	0.6
Innovation	11	3.2	Governance	2	0.6
Climate Change	5	1.4	Learning	2	0.6
Social Networks	4	1.1	Limits	2	0.6
Environment	3	0.9	Management	2	0.6
Participatory Research	3	0.9	Power	2	0.6
Social Entrepreneurship	3	0.9	Self-Management	2	0.6
Adaptation	2	0.6	Social Change	2	0.6
Behaviour	2	0.6	Social Economy	2	0.6
Civil Society	2	0.6	Sustainability	2	0.6
Community	2	0.6	Sustainable Innovation	2	0.6
Complex Systems	2	0.6	Carbon Dioxide	2	0.6
Complexity	2	0.6	Corporate Social Responsibility	2	0.6
Discourse	2	0.6	Information Technology	2	0.6

3.3 Theories, Models, and Frameworks Used in Social Innovations Research

The findings on the theories, models and frameworks used in social innovation research indicated that only a handful of studies have used theoretical models or frameworks. Table 9 lists a total of 30 theories/models/frameworks that were used in social innovation research across 27 different studies. The analysis indicated that only two theories/models, namely, Experimental Social Innovation and Dissemination (ESID) model and Actor Network Theory have been used in more than one study. For example, Using Actor Network Theory, Maruyama et al. (2007) analysed the socio-economic dynamics that are brought about by renewable energy technologies in light of the interests of the various actors involved in community wind power projects in Japan. Moreover, a number of theories, models, and frameworks (#27) have been used and discussed only once across 21 studies and their relevance and usability in this area of research have not been completely established.

The analysis has also revealed that there have not been any theories or models which in its entirety been applied to conceptualise or explain any social innovation initiatives from an empirical context. For example, Jensen (2013) stated that he attempted to solve the methodological problem associated with social innovation in residential homes using three theoretical perspectives including implementation and network theory, system theory, and theories on culture from a communication perspective. However, the study has never given any details of how these theories have been used to solve the given problem. The review of all 27 studies using different theories, models, and/or frameworks also revealed that none of them have been used to understand the concepts of social innovations empirically.

Table 9: Models/Theories/Frameworks used in social innovation literature

Model/Theory/Framework	Source
Experimental Social Innovation and Dissemination (ESID) Model	Emshoff et al. (2003), Fernandez et al. (2003), Gray et al. (2003), Sullivan (2003)
Actor Network Theory	Bisset and Potvin (2007), Maruyama et al. (2007)
Cluster Theory	Adams and Hess (2010)
Four-Stage Grounded Model	Ber and Branzei (2010)
Social Innovation Framework	Biggs et al. (2010)
Genre Theory	Cavalli (2007)
City Development Life Cycle (CDLC) Model	Chen and Karwan (2008)
Partnership Model	Craig and Pepler (2007)
Institutional Theory	Dacin et al. (2011)
Organization and Management Theory	Dacin et al. (2011)
Rehn-Meidner Model	Erixon (2011)
Static Market-Equilibrium Theory of Structural Change	Erixon (2011)
Institutionalist Approach	Gonzalez and Healey (2005)
Three-Level Analytical Model	Gonzalez and Healey (2005)
Sociological Theory	Grossmass (2006)
Three-Sectoral Model	Hanke and Stark (2009)
Implementation and Network Theory	Jensen (2013)
System Theory	Jensen (2013)
Theories on Culture	Jensen (2013)
Hierarchy Theory	Jones (2011)
General Business Innovation Theory	Lettice and Parekh (2010)
Resilience Theory	Moore and Westley (2011)
Network Theory	Moore and Westley (2011)
Territorial Innovation Model	Moulaert and Nussbaumer (2005)
Alternative model of local innovation	Moulaert et al. (2005)
Complex Network Electronic Knowledge Translation Research model (CoNEKTR)	Norman et al. (2010)
Strategic Niche Management Theory	Seyfang and Haxeltine (2012)
Living Systems Theory	Simms (2006)
Evolutionary Game Theory	Young (2011)

3.4 Research Methodologies Used

Table 10 lists research methodologies used in social innovation research. Our analysis indicates that a large proportion of social innovation related research is conceptual (#54, 45.8%) in nature. Some other more frequently used research methodologies in social innovation include case study (#23, 19.5%), interview (#12, 10.2%), survey (#10, 8.5%), and secondary data analysis (#9, 7.6%). Moreover, experimental design and literature review were used twice and methodologies

including action research, content analysis, field research, focus group, observations, and SusHouse methodology were relatively under-represented and used only one time across the research of social innovation. The findings also indicate that some studies used more than one methodology. For example, exploring social innovation through disruptive technologies in rural communities in Austria, Fink et al. (2013) used various research methodologies such as case study, field research, and narrative interviews to support insights that support entrepreneurs and policy makers in designing strategies and policies in those areas.

Table 10: Research Methodologies used in Social Innovation studies

Method	Freq	%
Conceptual	54	45.8
Case Study	23	19.5
Interviews	12	10.2
Survey	10	8.5
Secondary Data Analysis	9	7.6
Experimental Design	2	1.7
Literature Review	2	1.7
Action Research	1	0.8
Content Analysis	1	0.8
Field Research	1	0.8
Focus Group	1	0.8
Observations	1	0.8
SusHouse Methodology	1	0.8
Total	118	100

4 DISCUSSION

4.1 Social Innovations in Public Sector

There are many lenses (e.g. individuals, movements, organisations) through which social innovations can be understood (Mulgan, 2007). A number of diverse fields are becoming involved in social innovations in the public sector. These broadly include social entrepreneurship, design, technology, public policy, cities and urban development, rural development, social movements, and community development (Mulgan, 2007) to name a few. It can be pioneered by a wide range of actors including non-governmental organisations, community groups, charities, governments, business academics, philanthropists, or combination of these groups (Biggs et al., 2010; McKeown, 2008). This research tries to explore the literature of social innovations through the specific lens of public sector organisations. International experience is focusing on the specific attention of the role of public sector both as innovator as well as facilitator of social innovations in general (Adams and Hess, 2010; Harris and Albury, 2009; Mulgan, 2007). Arguably, international organisations are among the important social innovations of the twentieth century. They have managed to become worldwide conglomerates

by establishing a stake in every facet of human life (Tesfagabir, 2011). Adams and Hess (2010) identified some components of social innovation practice and indicated that how these might be theorised into applicable models. The authors provided a commentary relevant to social innovations introduced in the form of economic innovation, social capital, community strengthening, and regional development, which are very much international in focus. The authors also presented their views on the role of social innovation in public policy and management focusing on the Australian public sector. Voss et al., (2009) also proposed a view on policy design of transition management as a contested process of social innovation in the Netherlands. Agnandji et al. (2012) aimed to describe the patterns of clinical research activities at a Sub-Saharan biomedical research centre. Biasiotti and Nannucci (2004) explored the application of information and communication technologies (ICTs) in terms of electronic democracy (e-Democracy) and considered it as a strong vehicle for social innovations and progress in the hands of governments in the European region in general and Italy in particular. They argue that citizens must learn how to become electronic citizens to maximise the benefits provided by governments to the overall society in general and individual citizens in particular.

Biggs et al., (2010) explored the analysis of transformative change in ecosystem management as a process of a social innovation framework. Based on the case studies of Sweden, South Africa, and the USA, the authors suggested that initiatives that foster environmental awareness and attachment to local ecosystems developed capacity for social entrepreneurship in the environmental arena. Similarly, Ugo (2008) discussed the relationship between ICT and environmental issues. The author discussed the possibility of how ICT could contribute to the solution of environmental problems specifically to the prevention of global warming. Zulaica (2011) analysed the environment and its management represented in terms of social innovations, i.e. through the restrictions that the environment and care of the planet implied, the actions that have been adopted, and the ways in which different organisations have reacted. Lundstrom and Zhou (2011) explored the distinctive characteristics of social innovation parks and explained how social academic entrepreneurship is fostered by them through strategy and policy-making at local, national, and global levels. Falk and Ryan (2007) focused on the powerful potential role of ICT in facilitating technological and social innovation towards sustainability through eco-innovation in Australia and discussed key strategic principles in the context of the potential of technologies already under development. Moore and Tjornbo (2012) revealed that many socio-ecological systems across the globe are currently being governed unsustainably. As a result, social innovation is required to transform current governance regimes and introduce new more flexible arrangements.

Dacin et al., (2011) examined the promise of social entrepreneurship as a domain of enquiry and suggested a number of research areas and research questions for future study. Witkamp et al., (2011) examined if and how strategic niche management (SNM) – a social entrepreneurship tool to understand and manage radical socio-technical innovations – can be implemented into a social innovation. The authors concluded that SNM can be used to analyse radical social innovation.

Menzel et al. (2007) explained how to make engineers active in the field of intrapreneurship within large organisations where they often are employed in research and development. The authors also argued that innovations of today often asked not only for technical knowledge but also social knowledge to make these innovations meaningful. Bisset and Potvin (2007) presented a theoretical framework for expanding the conceptualisation of health promotion and health education program implementation in a school-based nutrition program. Realising the constraints of current health care and public health system, Norman et al., (2010) adapted the elements of Complex Network Electronic Knowledge Translation Research (CoNEKTR) model that brings together complexity science, design thinking, social learning theories, systems thinking and eHealth technologies together to support a sustained engagement strategy for social innovation support and enhancing knowledge integration. Bouchard (2012) discussed the concept of social innovation and explained the way it can be used as an analytical framework for understanding the social economy using a case of housing sector of Quebec in Canada. Koopmans and Vliegenthart (2011) proposed a theoretical framework for studying media attention, which draws on theoretical concepts and research findings from the sociological literature on the diffusion of innovations. Following Roger's suggestion to visualise news as a specific type of social innovation, the authors found that elements such as event characteristics, homophily between source and adopter, network links between source and adopter, the power and status of the source, and selective exposure to the events from the same source influenced news diffusion from the source location of an even to an adopting medium. The authors validated this theoretical framework by analysing the coverage of more than 1,300 earthquakes during 1990-2005 in the US, the UK, and Dutch newspapers and found a strong and consistent support for the theoretical expectations.

Calvert (2012) discussed the concept of synthetic biology considering both its technical objectives and social innovations. The author has emphasised on the concept of open innovation in this context that gives rise to social goals. However, social innovation was no more the central and direct discussion agenda of this research. Similarly, Carnera (2012) problematised how biopolitical issues enter modern labour, how in particular this will effect questions of competence, self-management, and social innovation. Similar to the prior study, this field of research does not revolve around the central concept of social innovations as such. De Muro et al., (2007) presented a case study of social innovation to counter deprivation and social exclusion in Naples, Italy.

Chen and Karwan (2008) stated that although the pace of development of Chinese cities over the past decade has been exceptional, the future economic development of the country is increasingly forced by limitations in social structure that serve to attract skilled labor. The authors presented a model of economic development to explain the case of Shanghai. They argued that the role of multinational enterprises in recognising and supporting social innovations is likely to be essential for the future success of Shanghai. Craig and Pepler (2007) raised the issue of bullying as one of the important social problems among Canadian students. Their

research described the development of a new network called promoting relationships and eliminating violence (PREVNet) to address bullying in Canada. Moore and Westley (2011) explored the critical question of whether networks facilitate innovations to bridge the apparently intractable chasms of complex problems. Edwards-Schachter et al., (2012) discussed about how people's quality of life can be fostered through the impact of social innovation. The authors emphasised the significance of participative processes and citizen's empowerment being considered as crucial aspects of social innovation. The results of the study suggested that Living Labs are a useful instrument to detect community needs and improve local development and support and integrate social innovations in policies and local governance processes. Liedtke et al.. (2012) summarised and discussed the results from the Living Lab design study which is a combined lab/household system aiming at the development of integrated technical and social innovations and simultaneously promoting conditions of sustainable development. As this research presented the design study no actual finding could be presented here, but the focus was on presenting the research approach. Eizaguirre et al., (2012) revisited the role of citizenship challenges, participatory governance and social innovation in fostering democracy. There are many new challenges for urban studies including new geographies of citizenship in which city could play a significant role, a growing interest in citizen participation, confrontations around the diverse conceptions of citizenships, the role of civil society initiatives in the fight against social exclusion, and the development of citizenship rights to name a few.

Emshoff et al., (2003) argued that the process of replicating successful social innovations is a prerequisite for dissemination and an obvious outcome of a successful dissemination effort. Gray et al., (2003) attempted to examine the level to which community psychology has adopted and implemented ESID's dissemination focus in its training and publications. Fernandez et al., (2003) illustrated how ESID principles were used to develop, test, and disseminate an innovative social model and discussed the challenges of implementing ESID methodology in the midst of a public health emergency. In other words, this research showed how ESID principles were successfully implemented to address the pressing social issues presented by the HIV epidemic (Fernandez et al., 2003). This study was designed to provide empirical data related to the implementation of complex social programs with fidelity, the degree of appropriate or desired fidelity, the various organisational dynamics of adoption with fidelity. Hazel and Onaga (2003) described the ESID model and its contribution to and intersection with community psychology. It also discussed the challenges presented to ESID by community psychology's growing importance on cultural diversity and participatory approaches to research and intervention. Sullivan (2003) discussed how the ESID model was successfully used to reduce intimate male violence against women. The author also discussed the relevance of the ESID model in addressing the male violence as well as other significant social problems in the society. The study by Eriksen and Selboe (2012) aimed to understand how local adaptation is socially organised. By focusing on social innovations in the organisation of the local adaptive strategies, the research hoped to contribute to understanding of how adaptation takes place or might be limited in developed country context. This research examined the social organisation of

managing climate variability through a study of mountain farming community in Norway. Scott-Cato and Hillier (2010) explored the question whether climate change can be viewed through the prism of theories of social innovation. The authors used a case of Transition Towns – a community movement in response to climate change – as a testing ground for theories about social innovations and its subsequent motivations to respond to the threat of climate change. Ezponda and Malillos (2011) analysed some of the first conceptual frameworks of social innovations and discuss the progress of new paradigm in the European Union. Seyfang and Haxeltine (2012) presented a new empirical research from a study of UK's 'Transition Towns' movement (a 'grassroots innovation') and explored its attempts to grow and influence wider societal socio-technical systems. Furthermore, the research pointed out the areas where theory can be refined to better explain the development and wider influence of grassroots innovations. The authors concluded that social innovations emerged in the first instance of civil society but can also be generated or implemented by the public sector and the private sector. Gerometta et al., (2005) sought to explore the role of civil society in new urban governance arrangements that would expectantly contribute to counter the trends toward social exclusion. In other words, their research seeks to contribute to a conceptualisation of 'social innovation' in urban development which specifically focuses on the processes aimed at countering social exclusion. Likewise, Novy and Leubolt (2005) focused on the identification and role of social innovation in urban development. The aim of this research was to promote the understanding of the conflicting relationship between state and civil society in the most southern state of Brazil. Klein et al., (2010) analysed the role of social economy-based local actors in developing social innovation in Montreal. On the basis of a case study in the clothing industry, their paper analyses the role played by community economic development corporations in the economic and urban reconversion in the city. Moulaert et al., (2005) introduced a special topic on social innovation in the governance of urban communities. It also sought to widen the debate on the meaning of social innovation both in social science theory and as a tool for empirical research on socioeconomic development and governance at the local level. By exploring two socially innovative programmes in the education sector that were underway in Oporto city-region in Portugal, Oliveira and Breda-Vazquez (2012) examined the viewpoints for disseminating social innovation consideration through urban policy.

Fink et al., (2013) examined the local economic restructuring in rural areas that are influenced by disruptive technologies. Drawing on an institutionalist framework, the authors applied systematic theory-informed case study analysis of two rural communities in Austria and identified practices that were crucial for the sustainable development of local communities and found that disruptive technologies have to be accompanied by social innovations in the affected communities. Neumeier (2012) discussed social innovation from a rural development perspective. The authors addressed the major questions of what the social innovations are and why are they important for rural development? This research addressed open research questions and explained why an actor-oriented network approach appeared to be a promising potential methodological way to approach social innovations in rural development research. Similarly, drawing on the institutionalist

approaches as developed in the fields of policy analysis and planning, Gonzalez and Healey (2005) developed a methodological approach for examining how the governance capacity for socially innovative actions might emerge. Gabriela (2012) dealt with the subject of social innovations and their application in social practice. The author attempted to conceptualise social innovations within theories on the modernisation of society. Swyngedouw (2005) focused on the fifth dimension of social innovation also known as political governance. International organisations such as EU and the World Bank as well as leading grassroots movements have participated in more participatory governance arrangements like this. The research concluded by suggesting that socially innovative arrangements of governance-beyond-the-state are fundamentally Janus-faced (Swyngedouw, 2005).

Green and Vergragt (2001) discussed the conclusions of the SusHouse (Strategies towards the Sustainable Household) project that has been exploring possible socially and technologically innovative strategies for sustainable households in the five European countries (i.e. Germany, Hungary, Italy, Netherlands, and UK). The project covered three household functions namely Clothing Care, Shelter, and Food. The authors suggested that SusHouse methodology would be especially useful to those progressive organisations or agencies that are looking for new ideas that can be implemented in certain economies. Simms (2006) also supported the technical and social innovations as the basic determinants of the recent human behaviours. Kinder (2010) presented a case study of West Lothian smart housing in Scotland from the viewpoint of social innovation. The research argued that social innovation in local services is non-linear and open in character and successful where psychic distance between service providers and users is low. Hanke and Stark (2009) developed a conceptual framework on corporate social responsibility (CSR). For organisations, CSR raises the question of what may be the "good reason(s)" for acting responsible towards its members, customers, and society by large. This conceptual framework serves as a first effort to set up patterns of organisational behavior in CSR strategising. Jing and Gong (2012) attempted to build an analytical framework to understand managed social innovation in China by focusing on two potentially conflicting policy goals and the government's strategic choice to balance them. The authors examined a hybrid form of social innovation by combining government engineering and citizen participation as the Chinese government's most recent strategy to deal with the rise of non-profit organisations. Hara and Ishigaki (2012) described Fujitsu Laboratories' activities toward the understanding of the Intelligent Society. Fujitsu Laboratories is also researching social innovation which is intended to find and create affluence and value for individuals and society by examining and evaluating people, organisations, and communities. By integrating such research, Fujitsu Laboratories intends to offer social solutions to complex social problems.

Hoffman et al., (2007) examined the research approaches of farmers and that of scientists and examined their difference in terms of both groups' engagement in experimental work. The researchers presented the theoretical considerations and practical experiences to emphasise the potential of farmer-researcher collaboration for rural social innovation. McLoughlin and Preece

(2010) explored an initiative to encourage innovation by putting rural public houses 'on-line' as one element of making the pub 'the hub' of service delivery in the UK rural communities. The findings of this research showed that the initiative did not develop as intended and eventually became difficult to sustain even in its pilot phase. Jensen (2013) reflected upon a project on Action Competence in Pedagogical Practice (ACP). The study of 200 children and young people in six residential homes in Denmark was considered as a part of social innovation which was later tested by practitioners. Kallinikos (2004) viewed bureaucratic form of organisation as both an agent and expression of key modern social innovations that are most evidently marked in non-inclusive terms by which individuals are involved in organisations. Lettice and Parekh (2010) attempted to better understand the process of social innovation as well as the lessons that can be transferred from general business innovation theory and practice.

An introductory article by Loader and Dutton (2012) provided a critical assessment of the last decade of 'social' research on the Internet and proposed directions for further research. The authors argued that the unfolding development of the Internet and the related ICTs over the last four decades has been one of the most dynamic areas of technological and social innovation worldwide. Lyyra and Heikkinen (2006) identified the effect of perceived social support on all-causes of mortality during a 10-year period. The results of this study presented a challenge for society to find and develop new social innovations and interventions to promote a sense of emotional social support in elderly people thereby contributing to their health and welfare. Mariner et al., (2012) discussed how an infectious disease called Rinderpest was eradicated using appropriate technology and social innovation in East Africa. Maruyama et al., (2007) described and analysed the socio-economic dynamics that are brought about by renewable energy technologies in Japan. They relate these dynamics to social innovation as it changes the rules of risk-benefit distribution and the roles of social actors. Through the community wind power case study in Japan, the authors examined how the citizens' initiative can influence the social acceptance of renewable energy and social change. Similarly, Ornetzeder (2001) focused on the link of old technology and social innovations using renewable forms of energy using solar water heaters in the context of Austria. The author discussed the enormous success of solar heater technology in the 1990s in Australia and attributes this to two specific social phenomena, including, the self-construction movement consisting of single do-it-yourself group and an atypical group of adopters responsible for the unexpected dissemination success.

Membretti (2007) analysed the bottom-up response to the lack of social and cultural services in a post-industrial area of Milan as an enlightening experience of social innovation. From an organisational point of view, the analysis showed how social innovation processes are strongly linked to the social enterprise logic and to the spatial dimension. Vicinay (2011) attempted to explore the links and connections between the discourse of social innovations and the enterprise. Moulaert and Nussbaumer (2005) launched a debate on a broader meaning of the term 'innovation' and its significance for local and regional development in the context of Europe. Murphy et al. (2012) introduced the concept of relational capacity for social innovation, a model

better suited for the analysis of learning and innovation in the perspective of the cross-sector alliances, particularly those operating at the base of the economic pyramid. Novy and Hammer (2007) argued that social innovations at the grassroots level can only become essential if it helps overcome authoritarianism which is a general trait of capitalist societies. Parameshwar (2005) explored how ten internationally famous human rights leaders pioneered social innovations through their non-violent and spiritual engagement with challenging circumstances. Research on the influence of social innovation in an organisational context by Posthuma (1995) explored the process of organisational restructuring in a sample of six Zimbabwean organisations that introduced a package of Japanese techniques including total quality control, just-in-time, and cellular manufacturing. The findings highlighted the significance of considering organisational reforms not merely as a set of technical solutions but also as a process that involves social innovations. Ramirez (1999) argued that technical breakthroughs and social innovations in real value creation provide the alternative called as a value co-production framework. The research examined some of the implications of adopting this framework to explain and understand business opportunity, management, and organisational practices.

A review of the literature also reveals that several researchers have examined the influence of social innovation on the environment. Rodima-Taylor (2012) suggested that the concept of social innovation was useful for analysing climate adaptation in the multi-scale institutional environments. The research explored the features of the local institutions that have a potential to develop local adaptive capacity and discussed probable challenges to sustainable climate adaptation. Sassen and Dotan (2011) aimed to theorise the shifting relationship between cities and the biosphere in ways that can assimilate front line scientific, technical, and social innovations. Van der Horst and Vermeylen (2011) explored the questions of when and why negative social impacts of biofuel production were likely to occur and under what circumstances more positive impacts might be expected. Vergragt and Brown (2012) addressed and conceptualise an obstinate problem of energy-upgrade in the existing residential housing stock of Worcester in the USA. The authors suggested undertaking more research to refine a conceptual framework they present in their study to make it applicable to both grassroots innovations and municipal projects.

Our comprehensive review of academic literature in the area of social innovations indicates that research studies have largely focused on the fields related to ICT/information technology (e.g. Biasiotti and Nannucci, 2004; Falk and Ryan, 2007; Loader and Dutton, 2012; Ornetzeder, 2001; Ramirez, 1999; Ugo, 2008), social entrepreneurship/intrapreneurship (e.g. Biggs et al., 2010; Dacin et al., 2011; Lundstrom and Zhou, 2011; Menzel et al., 2007; Witkamp et al., 2011), ecology/environment/climate variability (e.g. Eriksen and Selboe, 2012; Moore and Tjornbo, 2012; Rodima-Taylor, 2012; Scott-Cato and Hillier, 2010; Zulaica, 2011), governance (e.g. Eizaguirre et al., 2012; Gonzalez and Healey, 2005; Moulaert et al., 2005; Swyngedouw, 2005), urban development/community/policy (e.g. Gerometta et al., 2005; Klein et al., 2010; Oliveira and Breda-Vazquez, 2012; Moulaert et al., 2005; Novy and Leubolt, 2005), rural

development/community (e.g. Fink et al., 2013; Hoffman et al., 2007; McLoughlin and Preece, 2010; Neumeier, 2012), health (e.g. Fernandez et al., 2003; Lyyra and Heikkinen, 2006), education (e.g. Bisset and Potvin, 2007; Gray et al., 2003), social economy (e.g. Bouchard, 2012; Maruyama et al., 2007), biosphere/biofuel (Sassen and Dotan, 2011; van der Horst and Vermeylen, 2011), and household functions (e.g. Green and Vergragt, 2001; Kinder, 2010) as some of the major fields where social innovations were explored.

However, the research on social innovations has also been explored in the area including media (Koopmans and Vliegenthart, 2011), bio-political issue (Carnera, 2012), social exclusion (De Muro et al., 2007), community psychology (Hazel and Onaga, 2003), domestic violence (Sullivan, 2003), corporate social responsibility (Hanke and Stark, 2009), disease (Mariner et al., 2012), and energy (Vergragt and Brown, 2012) in one study each. In spite of a number of research studies that have been undertaken in social innovation in general and in a public sector context in particular, none of the studies have yet performed a comprehensive and systematic literature review of the academic research in social innovations. Hence, there is a growing need of undertaking such research in this area and we hope that this literature review would fill this research gap.

4.2 Limitations of Existing Research on Social Innovations in the Public Sector

This comprehensive review of existing research on social innovation in the public sector has given rise to a number of limitations that can be considered as directions for future research.

First, the review of literature on social innovation in the public sector indicates that the majority of studies in this area are conceptual (e.g. Cavalli, 2007; Henderson and Kay, 1996; Lallement, 2012; Michaelis, 2003; Morelli, 2007; Walker, 2011; Weber, 2012; Young, 2011; Zakim, 1999), case studies (e.g. Biggs et al., 2010; De Muro et al., 2007; Fink et al., 2013; McCarthy, 2011; Morita, 1992; Murphy et al., 2012; Novy and Hammer, 2007; Simms, 2006), and literature oriented (e.g. Edwards-Schachter et al., 2012; Loader and Dutton, 2012). Some of the studies found are based on secondary data analysis (e.g. Craig and Pepler, 2007; Favaro et al., 2010; Gray et al., 2009) and survey based research (e.g. Seyfang and Haxeltine, 2012). However, only a handful of the associated research (e.g. Koopmans and Vliegenthart, 2011; Laplante and Harrisson, 2008) are based on primary data based quantitative research. Deriving from the above discussions, the following prepositions can be formulated:

Preposition 1: The research on social innovation in the public sector should explore primary data based surveys and subsequent quantitative analysis.

Second, the literature suggests that even though a number of theories, models, and frameworks (see Table 9 for details) have been used to discuss social innovation under different circumstances, only a very few studies (e.g. Emshoff et al., 2003; Maruyama et al., 2007; Sullivan et al., 2003) have actually implemented them to understand the various factors and their

roles in the context of social innovation. Deriving from the above facts, the following preposition can be formulated for future research:

Proposition 2: Research on social innovation in the public sector should be based and influenced by theoretical models and frameworks using the appropriate data.

The review of literature on social innovation in the public sector revealed that majority of studies (e.g. Bouchard, 2012; Fernandez et al., 2003; Gerometta et al., 2005; Gonzalez and Healey, 2005) have been undertaken in developed countries' (e.g. USA, UK, Canada, Germany, Australia etc.) context and only a handful of research studies (e.g. Ayenor et al., 2004; Chen and Karwan, 2008; Gabriela, 2012; Rodima-Taylor, 2012; Posthuma, 1995) have been published in the context of developing and under-developed countries (e.g. China, Ghana, Portugal, Slovakia, Taiwan, Tanzania, and Zimbabwe). Such studies in the context of developing countries will reveal more evidence on social innovations in the context of public sector organisations. Realising the lack of such studies in the context of developing and under-developed countries, the following propositions can be formulated for future research:

Proposition 3: More research on social innovation in the public sector should be undertaken in the context of developing and under-developed countries.

The literature analysis on social innovation in the public sector indicates that only a few studies (e.g. Agnandji et al., 2012; Dacin et al., 2011; Edwards-Schachter et al., 2012; Emshoff et al., 2012; Hunter et al., 2008; Lyyra and Heikkinen, 2006; Murphy et al., 2012; Sullivan, 2003) have explicitly outlined their limitations. This shortcoming of all such studies hinders the possibility of future research to take up those hidden limitations and subsequently work on them. Realising the shortfall of all such studies not to explicitly express their limitations, the following prepositions can be formulated:

Proposition 4: Future research on social innovation in the public sector should explicitly outline their limitations and future research directions.

The review of keywords of the literature related to social innovation in the public sector has indicated that although keywords such as 'social entrepreneurship' (e.g. Dacin et al., 2011; Moore and Westley, 2011), 'corporate social responsibility' (e.g. Chen and Karwan, 2008; Hanke and Stark, 2009), 'information technology' (e.g. Ugo, 2008), and 'governance' (e.g. Bouchard, 2012; De Muro et al., 2007) hold significant position in this research; they have remained largely under-represented. The less frequent use of the above keywords indicates that even though the concept of 'social innovation' is very closely related to the above mentioned keywords and related knowledge, a relatively less number of studies have been undertaken in these areas. For example, by creating good governance using electronic government services is an exemplary manifestation of social innovations that can eradicate a number of social problems in society. Similarly, corporate social responsibility (CSR) is usually considered as a core business activity and well designed CSR projects can encourage genuinely radical approaches

that apply imaginative business thinking to social problems (Mulgan, 2007). Past advances in the spread of new technologies like electricity and the Internet depended as much on social innovation as they did on innovation in technology (Mulgan, 2007). However, the review of existing literature suggests that only a few studies (e.g. Hoffmann et al., 2007; Ornetzeder, 2001) have been undertaken on the subject line of social innovations and the role of technology for such innovations. Based on the above discussions and arguments, the following proposition can be formulated:

Proposition 5: More research on social innovation in the public sector is needed on topics such as social entrepreneurship, corporate social responsibility, information technology, and governance which hold a significant relevance in this research but are currently under-represented.

5 CONCLUISONS

The purpose of this research is to present an overview of the current studies on social innovation in the public sector by presenting the results of a systematic and comprehensive review of 105 related articles. Results have been presented in terms of six major aspects: demographic characteristics, keyword analysis, theory/model/framework analysis, research methodology analysis, literature review of social innovations in public sector, and limitations in the existing research and proposition formulations. Our intent on conducting an investigation is to provide a useful and usable resource for future researchers by providing information on the key areas previously addressed in social innovation research including how social innovations based research tends to be carried out and what usually has been studied during the course of social innovation research in a public sector context. The current literature review has highlighted promising lines of enquiry as well as those that are neglected and also those that have received much attention till date. All these aspects of analysis in our study imply that although academic research in the area of social innovation is not new, there are certain areas of research including the lack of primary data based quantitative research, a lack of implementation of theory/model/framework in the existing research, and social innovation based research in context of developing and under-developed countries are some instances where there is still an enormous gap.

We anticipate that this paper will prove to be a useful source of information for those readers who wish to learn more about the various facets related to the published research on social innovation in public sector context, and suggests that the findings of this study might help in directing limited and valuable research resources to potentially fruitful lines of enquiry.

5.1 Theoretical Contributions

The current research provides theoretical contribution to the area of social innovation research in public sector organisations. First, this is a first research of its type which has systematically

reviewed the literature of social innovation in public sector and has provided a concise account of the research in this area. Second, by analysing the collective limitations of the existing research in social innovation, we proposed five various propositions which will guide researchers to work on while performing research in the area of social innovation in future. Finally, by analysing the available literature, we divided the social innovation research under different themes including technology, environment, social entrepreneurship, urban development, rural development, and governance to name a few and the levels of research that have undertaken in each of these categories. Such categorisation clearly divides the overall research in more understandable and logical fashion and clearly indicates the possibility of further research in those areas.

5.2 Limitations and Future Work

We acknowledge that our study has a number of limitations and readers should interpret the material presented in this paper within the context of these limitations. First, perhaps the most obvious limitation is that of literature forming our sample - as with all articles of this type, our results reflect the material actually examined, and clearly there may be significant and influential work that we have not included. This fact has been mentioned in the research methodology section where it is clearly mentioned that we did not obtain access to 75 such articles. Second, although we have included 13 articles which were either published in non-English languages such as Spanish, French, and German, we only had a partial access to these. Therefore, we could not fetch the complete details from those articles and we only used their abstracts to get relevant information from them. Third, our systematic literature review only considered peer reviewed research (or academic research) and did not include grey literature such as public policy documents, white papers or project reports. Therefore, future research should attempt to incorporate all possible studies in order to perform an exhaustive review of social innovation research in a public sector context.

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Nripendra P Rana is a Lecturer at the School of Management at Swansea University in the UK. He holds a BSc in Mathematics (Hons.), an MCA, an MTech, and an MPhil degree from Indian universities. He also holds an MBA with distinction and a PhD from Swansea University. His current research interest is in the area of technology and e-Government adoption and diffusion. He has published his work in some refereed journals including ISF, ESJ, IJBIS, IJICBM, IJEGR, and TGPPPP. He has varied work experience of teaching in the area of computer science at undergraduate and postgraduate levels.

Vishanth Weerakkody is a Professor of Digital Governance at Brunel Business School, UK and the Editor-in-Chief of the International Journal of Electronic Government Research. His current research is focused on social innovation, ICT adoption and diffusion, digital inclusion, process transformation and change and innovation and knowledge management in the public sector. He has published over 100 peer reviewed articles, guest-edited special issues of leading journals and edited several books on these themes. He has many years of R&D experience in the field of e-government and is currently an investigator in several European Commission and internationally funded projects.

Yogesh K Dwivedi is a Professor of Digital and Social Media in the School of Management at Swansea University, Wales, UK. He obtained his PhD and MSc in Information Systems from Brunel University, UK. He has co-authored several papers which have appeared in international refereed journals such as CACM, EJIS, ISJ, ISF, JIT, JORS and IMDS. He is Associate Editor of *European Journal of Information Systems*, Assistant Editor of JEIM and TGPPP, Senior Editor of JECR and member of the editorial board/review board of several journals. He is an annual member of the AIS and life member of the IFIP WG8.6 and 8.5.

Niall Piercy is currently Deputy Dean – Operations and Head of the Operations Management & Entrepreneurship Department at the School of Management, Swansea University. Professor Piercy was previously Senior-Lecturer and Director of Studies at the University of Bath School of Management. Professor Piercy's work is focused on the marketing and operations management challenges that face entrepreneurs, both in terms of the classic self-employed entrepreneur and also the organizational-entrepreneur. This latter group may operate within a large corporate structure, but share many characteristics with the classic entrepreneur. Extending understanding of how to engage and support organizational entrepreneurs has been the focus of his latest research.