Multi-disciplinary approaches to change management research in the healthcare industry

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1 Introduction

Internationally, the healthcare industry is experiencing dynamic and turbulent times. This industry includes organisations such as hospitals, healthcare device and equipment manufacturers, pharmaceuticals, biotechnology and life sciences, health plans, and other services. In each of these sectors, continual changes are coming from all directions, including evolving governmental policies, heightened calls for transparency and visibility in managerial practices, continual obsolescence in medical technology and equipment, pricing pressures, and greater competition internationally. Financial distress is becoming increasingly common, as the industry is structurally susceptible to low and even negative operating margins. As a result, new processes, systems, and structures are evolving – all of which require major change management focus.

In this special issue, broadly speaking, the papers we have accepted tackled the different aspects of individuals and organisations that are involved in healthcare community. In healthcare research, scholars have also utilised theoretical perspectives from various disciplines such as economics, management, psychology, marketing, and technology innovation. These selected papers in this special issue are nicely connected and provided multidisciplinary views to explore change management in healthcare industry. We are inspired by the diversified research questions, theory lens and empirical

approaches that the authors have presented in their research. We categorise the five papers into two groups based on their specific topics, research questions, theory foundation and conceptual framework. We will discuss these papers from their theoretical lens and methods which they employ.

2 Multiple theoretical perspectives

Four of the papers focus on the micro side of entities in healthcare industries. For example, the first paper by Simon Albrecht addresses behaviour issues of employee attitude toward change and important factors affecting employee reaction. He draws perspectives from social exchange theory and motivated reasoning theory, and explores how change information, change involvement, and trust in senior management affect employee reaction to organisational change. The second paper by Kim, DelliFraine, Dansky, and McCleary specifically focuses on a specific group, healthcare physicians', acceptance and use of certain telehomecare technology. The authors compare different explanations and predictions from theory of planned behaviour and technology adoption models perspectives. The third paper by Lettieri, Radaelli, and Masella also discusses physicians as the unit of analysis, and they describe the impact of information systems on the behaviour of physicians. The fourth paper by Hughes-Morgan, Kendrick, Morgan, and Stoltman targets the marketing behaviours of pharmaceutical firms regarding direct-to-consumer advertising, and offers intriguing discussions related to the pros and cons of such practice change together with its performance implications. They propose that while direct advertising offers consumer better access to information about new products, it is also associated with various risks that may hurt physician, consumer, or pharmaceutical firms.

The other paper explores macro phenomenon associated with broad healthcare research and technology community. The fifth paper by Wang, Gong, Wang, and Tao explores the specific pattern of research and productivity of Chinese healthcare society. They propose that collective R&D efforts and direction of R&D research of a whole research community are impacted by market demand, government intervention and environment changes.

Needless to say, one of the merits of these special issue papers is their diversified units of analysis, empirical settings and research methods. The papers in this special issue have a good mix of qualitative and quantitative approaches. Two of the papers (Albrecht's, and that of Kim et al.) demonstrate the authors' great efforts in survey data collection and analysis. In the first paper, the author gathers the data related to organisational change and employee reaction to change from two large healthcare sector organisations. He conducts the research at the level of individual employee, and applies rigorous factor analyses and structural equation models. He further reports that their proposed model of employee attitude toward change can be successfully generalised across two dissimilar public sector organisations. The second paper in this issue selects primary-care physicians in the mid-Atlantic state as their survey subject and collect their adoption of specific healthcare practice related to telehomecare. Their main purpose is to empirically compare two models explaining and predicting physicians' acceptance and actual use of telemedicine. Though the sample base of this study and the survey respondents are different from the ones in the first paper, the authors also adopt similar robust analytic procedures related to factor analysis and structural equation models. They

find both perceived ease of use and perceived usefulness can reliably explain the intention and actual use of telemedicine by physicians.

The third paper by Lettieri, Radaelli, and Masella employ a comprehensive, systematic review, and the fourth paper represents a firm level study, while the final paper by Wang et al. rely on large-scale archival quantitative data source. In the fourth paper, the authors draw observations from archival data of a population of firms in the pharmaceutical preparation industry. They conduct their analysis at the firm level and gather a pooled multi-year cross-sectional data on publicly traded pharmaceutical firms. By examining new product introduction through structured content analysis and return on asset, they find that spending on advertising to physicians had a greater impact on profitability, thus, it may be prudent for pharmaceutical firms to channel their advertising dollars towards physicians. The final paper illustrates an interesting research approach based on bibliometrics analysis. The authors unitise a special dataset that covers 5 million healthcare research and publication records. They test the exponential growth pattern of healthcare research across different sub-disciplines and time periods, and find market demand, government intervention and research environmental directly impact research and productivity in Chinese healthcare community.

3 The special issue in brief

The first paper in this issue, 'Understanding employee cynicism toward change in the healthcare contexts', by Simon Albrecht, offers a particular view from the perspective of individual employees regarding their attitude and response toward change in healthcare organisations. Employee group are among the ones that directly affected by change in organisational practice, and their reaction under change directly affects the success and stability of healthcare organisations. As the author suggests, healthcare industry is characterised by continuous change, and it is important to identify organisational factors that impact on employee attitudes to change. The author draws arguments from psychological and sociological theory foundations, propose several important factors that might determine employee reaction, and provide significant evidence through well-planned survey design and empirical analysis.

Motivated reasoning theory and social exchange theory are perhaps the most appropriate foundations for such research. While motivated reasoning theory relatively focuses on the psychological factors to explain one-directional employee reaction to organisational change, social exchange theory views employee and organisations as two-directional exchange relationship. Motivated reasoning theory proposes that managerial accounts (i.e., the rationale communicated by management about the necessity for change) and motivational factors (e.g., psychological contract, trust in management, perceived organisational support, and social norms) directly affect employee reactions to change. Social exchange theory suggest that the interaction between employee and organisations could be mutual reciprocal – organisations care about employees' well-being and values their contribution, and employees will respond to organisational change with positive behaviour. It is particularly important to motivate employee to develop positive attitude and avoid employee cynicism, which has been associated with a pessimistic viewpoint about change efforts being successful.

The author proposes three influential factors that substantially impact employee attitude: change information, involvement, and trust in senior management. First, when employees are timely informed about change, they are less likely to resist change or develop a negative view about the change process and change outcome. Second, if employees are encouraged by organisations to actively participate in decisions about changes in their work environment, they will more strongly identify themselves with the organisations and facilitate organisational change. Third, when employees have a high level of trust in their senior management, they are more willing to accept change decisions made by senior managers, and positively participate in change process, though employees may not have a clear vision of the risk and uncertainty of such organisational change.

The author carefully selects samples from two separated healthcare entities, one as a large medical facility and another as an organisation responsible for the administration of community and disability services. Particularly, they limit their survey subjects to full-time employees who had been worked in the organisation for at least one year. Based on through examination of previous literature, the authors developed sound measures related to attitude toward change, change information, involvement, and trust in senior management. Then he conducts solid investigation through factor analysis and structural equation models, and report strongest connections between change information and change involvement to trust in senior management, and from change information to cynicism toward change. In addition, they find the modified model of cynicism toward change can be successfully generalised across two dissimilar organisations.

The second paper is entitled 'Physicians' acceptance of telemedicine technology: an empirical test of competing theories', by Kim, DelliFraine, Dansky, and McCleary. This article addresses the interesting issue of physicians' decision of adopting new healthcare technology. Physician group is of particular importance in healthcare sector, as this group bridges the connection between patients and healthcare product providers. Specifically, physicians are among the most influential in the adoption and diffusion of new medical products and technologies, as healthcare customers may lack the expertise regarding what products or device are appropriate or effective to treat their disease. This research offers a close look at what factors affect physicians' adoption of a particular healthcare technology.

The authors also draw arguments from behaviour and cognitive foundations, particularly the theory of planned behaviour and technology acceptance model. While theory of planned behaviour advocates the roles of attitude, subjective norms, perceived behavioural controls and behavioural intentions in determining individual behavioural, technology acceptance model emphasises external variables such as perceived usefulness of new technology and perceived ease of use. The former highlights internal individual cognitive factors that may motivate their adoption of new technologies, and the latter identifies external characteristics of new technologies and individuals' perception of new technologies as the main drivers of adoption. From the view of planned behaviour, physicians who hold a positive attitude about change or who feel a high degree of control over the new technology will be more likely to adopt it. Based on the explanation of technology acceptance model, physicians are more likely to adopt a new technology when they believe such technology would enhance their job performance, and believe the technology is easy to use.

The authors offer a nice review of literature from both sides and attempt to compare the explaining power of these two models by investigating physicians' adoption of

telemedicine. They collect surveys from a statewide master list of primary-care physicians in the mid-Atlantic state. Similarly, they also combine factor analysis and structural equation modelling in their research. Their findings suggest that model based on planned behaviour has better goodness of fit indices, and there is a stronger association between physician intentions to use telemedicine technology and actual adoption of telemedicine technology. Overall, the results show support for the roles of attitude and social norms in predicting intention and actual use of telemedicine.

The third article in this issue is entitled 'Information systems and change management in healthcare: the (un)solved quest for changing physicians' behaviour', by Lettieri, Radaelli, and Masella. This article uses a systematic review to identify the factors that both incent or inhibit behavioural changes in physicians. Findings suggest that attitudes, perceived usefulness of systems, and subjective norms all play a role in the changes of physicians in adapting to systems.

The fourth article in this issue is entitled 'Strategic change within the pharmaceutical industry: the impact of direct-to-consumer advertising for prescription medicines', written by Hughes-Morgan et al. This paper provides another interesting channel through examining the marketing behaviour and impact of pharmaceutical firms. Pharmaceutical companies can be viewed as the initiators and providers of new healthcare products, devices, and technologies. This study offers a unique perspective based on firm behaviour that is quite different from the first and the second paper in this special issue that are based on individual cognitive and behaviour analysis. The authors focus on a particular marketing practice, direct-to-consumer advertising in the healthcare industry, and suggest that such new practice will change the nature of competition for most organisations involved in healthcare service. They provide a thorough review of development of direct-to-consumer advertising practice, its pros and cons, and impact on firm productivity and profitability.

Direct-to-customer marketing practice has grown rapidly and steady since FDAs regulation change in 1990s. Nevertheless, the impact of such practice on social welfare and performance of pharmaceutical firms remains unclear. As the authors suggest that though direct-to-customer advertising can bring positive values to healthcare section, its risk and downside is also obvious. On the one hand, such marketing practice can offer better information to consumers and educate them about new product, technology, and medical options. Advertising can increase consumers' attention toward various diseases and motivate them to take early actions or medical treatments. On the other hand, direct-to-customer marketing may also provide some unnecessary information to consumers, together with misinterpretation of such information, may actually hurt healthcare practice and lead to higher price. For example, information related to certain healthcare products and treatments may be misunderstood by consumers who lack the medical expertise, especially when such products are new and with unknown effects. Particularly such marketing practice may not be necessarily beneficial for pharmaceutical firms either. While direct-to-customer marketing may generate more consumer demand for firms' products, it also poses much financial expense as firms could spend more on R&D investment and product development otherwise. Firms may offset the increasing marketing expense through raising the price of their products, but that may decrease consumer demand.

The authors conduct the analysis at the firm level, and design a study to investigate the impact of pharmaceutical firm's direct-to-customer marketing on its new product

development and financial performance. They collect their observations based on publicly traded firms within the pharmaceutical industry and gather a pooled multi-year cross sectional sample. To identify new product introduction and development, they utilise a very special procedure named structured content analysis – search for published articles of news announcements of product introductions using keywords related to product development. From their analysis, they report that there is a signification connection between direct-to-consumer advertising expenditure and the number of new products introduced by pharmaceutical firms, whereas, the result does not indicate any strong association between firms' ROA and its direct-to-customer marketing.

The final article in this issue is entitled 'The impact of market demand, government intervention and environment changes on the output of healthcare research in China', by Wang et al. Rather than looking at the behaviour of individual employees, physician, or firms, the authors of the forth paper set to explore how the research and productivity of whole Chinese healthcare community is impacted by change in consumer market, government policy, and environment. They focus on investigating the pattern of healthcare research and development in China as a whole. Their general assumption is that the growth and distribution pattern of healthcare research along different directions can reflect the whole healthcare community's attention and effort. Change in environment, healthcare market, and government regulation will directly affect the whole society's healthcare research. Instead of studying individual response, such as employees' or physicians', to change in healthcare sector, the authors exam collective response by researchers in the healthcare community.

First, they propose that sudden increase in market demand will affect the direction and productivity of healthcare research. For example, the SARS crisis in 2003 should directly call the attention of various healthcare organisations to devote more effort in conducting research related to the diagnosis and treatment of such disease. Next, they also suggest that government regulation will also affect the direction and productivity of healthcare research. Chinese Government has initiated several healthcare policy reformations and each reformation should stimulate change in healthcare research. They cite the 1998s state council announcement of the decision on establishing basic health insurance policy for urban employees, and argue such policy can direct motivate more healthcare organisations to conduct research related to particular diseases typically associated with urban employee. Then they also propose the effect of environmental change. Particularly, after China's 'open door' policy and increased international exchange between Chinese healthcare researchers and international ones, the traditional Chinese medicine treatment and research has faced more and more challenge.

To conduct their bibliometrics analysis, the authors utilise a very large scale dataset from Online Chinese Academic Literature Publication database, which basically covers all published periodicals and scientific reports in China. They report that 28 sub-disciplines follow the famous law of exponential growth. Particularly, their results show that the eruption of SARS disease directly triggered a huge growth in research and productivity related to the treatment of infectious disease. They also find the significant effect of environmental change on healthcare research and productivity, mostly due to China's globalisation process. Interestingly, while China's internationalisation has called for more research incorporating advanced international standards and posed significant challenge to traditional Chinese medicine research, it has not significantly impacted traditional Chinese pharmacology.

4 Need for continued focus

We are very excited to have this collection of papers address the issues of change management in healthcare. This research only begins to scratch the surface however for this complex, dynamic industry. There needs to be substantial continued investment in management research in this area. We hope this special issue begins the exploration process, and further stimulates ideas and conceptual developments for future research on change management in the healthcare industry. Enjoy the issue.