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TITLE

Examining the service engagement process in value co-creation in healthcare service delivery: a multi-level perspective

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Abstract

This study furthers our understanding of value co-creation, which has received little attention in the doctor-patient encounter relationship. We employed a quantitative survey method to shed light on factors driving this fundamental service aspect, followed up with a multilevel data analysis. These factors (assurance, social skills, doctor-patient orientation) from the doctor significantly strengthen the effects of the patient-level factors (trust, perceptual beliefs, interactions) on the service engagement and outcomes of the focal doctor-patient dyad. We establish the cross-level interactive effects at the group level of the focal dyad on service engagement. The findings suggest service engagement at the group level had no significant effect on patients' perceived value. We provide new empirical insights to understand and operationalize these fundamental influencing factors of the value co-creation concept in a healthcare setting, and contribute to the value co-creation literature.

Keywords

Value Co-Creation

Service Engagement

Multi-Level Analysis

Track

Services Marketing

1. Introduction

Consumer value creating activities and active participation in service delivery has received considerable attention of which the healthcare sector is no exception. Recent advances in service research present an interactive framework of value creation in service delivery (McColl-Kennedy, Hogan, Witell, & Snyder, 2017), which is central to the service-dominant logic (Vargo & Lusch, 2004). A large number of studies have examined value co-creation in healthcare service delivery (e.g., Elg, Engström, Witell, & Poksinska, 2012; Engström & Elg, 2015; Frow, McColl-Kennedy, & Payne, 2016; Hardyman, Daunt, & Kitchener, 2015; Janet R McColl-Kennedy et al., 2017; McColl-Kennedy, Vargo, Dagger, Sweeney, & van Kasteren, 2012; Nambisan & Nambisan, 2009; Osei-Frimpong, Wilson, & Lemke, 2018; Prigge, Dietz, Homburg, Hoyer, & Burton, 2015; Seiders, Flynn, Berry, & Haws, 2015; Sweeney, Danaher, & McColl-Kennedy, 2015). Unfortunately, research lacks a clear understanding of how these fundamental individual level factors (Trust, Perceptual Beliefs, and Interactions at the patient level; Assurance, Social Skills and Doctor-Patient Orientation at the doctor level) play out in healthcare service engagement from a dyadic perspective leading to value co-creation.

Further, Frow, Nenonen, Payne, and Storbacka (2015) and Storbacka, Brodie, Böhmman, Maglio, and Nenonen (2016) call for more work in co-creation research and more importantly an approach that fully investigates the nature of service engagement platforms to shed light on co-creation. Our study hinges on these premises to further our understanding of the value co-creation conceptual domain by examining the doctor-patient encounter level in healthcare service delivery. Thus the objective is twofold: first, to investigate empirically and assess some pertinent influencing factors of value co-creation within the patient-level and between the group-level. Second, to assess the impact of these factors on the expected service outcomes in relation to the patient.

2. Value Co-Creation

Value creation in service management is deemed critical and service-dominant logic (SDL) seems to signpost the new path. Value co-creation is explained as processes through which providers collaboratively engage customers to create value (Payne, Storbacka, & Frow, 2008; Ramaswamy & Ozcan, 2016). This approach highlights the importance of the customer experience in the service exchange (Chandler & Lusch, 2015; Lemke, Clark, & Wilson, 2011), which is also driven by the interactive nature of the exchange between the actors to co-create value through value-in-use (Grönroos & Voima, 2013). Accordingly, Axiom 2 of SDL states, “the customer is always a co-creator of value” (Lusch & Vargo, 2014, p. 68). Consequently, actor engagement practices including the concept of dedication, commitment, cooperation and a good actor-actor orientation (Hollebeek, Glynn, & Brodie, 2014) is considered critical in the co-creation process. Drawing from the cognitive, emotional and behavioural dimensions of service engagement (Brodie, Ilic, Juric, & Hollebeek, 2013), it is envisaged that, actor engagement practices in the healthcare setting could be driven by factors including interactions, learning, actor-actor orientation, trust, perceptual beliefs, etc. (Balduş, Voorhees, & Calantone, 2015, p. 983). We therefore, take a careful look at the doctor-patient encounter processes in a healthcare setting.

2.1 Patient-level variables

The service encounter forms the basis for gaining personal integrative benefits of the service, which is paramount to building or establishing relationships (Payne & Holt, 2001). Hence, patient experiences in the consulting room are influenced by their perceptual beliefs (Anderson, 1995; Osei-Frimpong, Wilson, & Owusu-Frimpong, 2015), which are essential in

value co-creation. In this study, we conceptualize perceptual beliefs as the actors' acceptance, regard and their interpretation or meanings assigned to the other party's actions or behaviours in service encounters that potentially influence service outcomes and subsequently value creation (Higgins, Vookles, & Tykocinski, 1992; Sandström, Edvardsson, Kristensson, & Magnusson, 2008). The perceptual beliefs of the patient also drives their level of trust that impacts on service engagement (Ranganathan, Madupu, Sen, & Brooks, 2013). Trust is explained as the level of integrity and confidence a patient places in a doctor and vice versa (Dorsch, Swanson, & Kelley, 1998). This is likely to motivate the patient's desire to engage in the consultation (Jaworski & Kohli, 2006). Further, a patient's level of interactions with the doctor is also likely to drive the service exchange or engagement, which also helps the doctor in unearthing the problems presented by the patient (Desai, 2010). Interaction is referred to as a reciprocal action between two or more actors that require "mutual trust and collaborative relationships" (Alam, 2013, p. 58). These core patient-level factors are likely to influence the service engagement between the patient and the doctor in the consulting room.

The nature of service engagement in consultations largely affects their attitudes toward the service, which impacts on the overall value realized (Chandler & Lusch, 2015; Salanova, Agut, & Peiró, 2005). Service engagement is conceptualized as how care is delivered and received between doctors and patients, taking into consideration the cognitive and relational factors that influence their experience (Osei-Frimpong et al., 2018; Salanova et al., 2005). Service providers are required to improve the level of engagement, which is likely to positively influence the overall service outcome to the focal dyad (Bitner, Faranda, Hubbert, & Zeithaml, 1997; Bowden, 2009; Prigge et al., 2015). These outcomes may include patients' improved adherence to medical instructions and the perceived value overall (Dellande, Gilly, & Graham, 2004; Moeller, Ciuchita, Mahr, Odekerken-Schröder, & Fassnacht, 2013). Patient adherence is explained as the "extent to which a patient's behaviour coincides with the medical or health advice" (Haynes, Taylor, & Sackett, 1979, p. 2) or the extent to which patients follow service provider's instructions (Hausman, 2004). Adherence to healthcare service provider instructions (Dellande et al., 2004), has been shown to result in improved self-reports on individuals' health status, perceptions of goal attainment, and satisfaction with the health service (DiMatteo, Giordani, Lepper, & Croghan, 2002; Seiders et al., 2015). These translate into the overall value achieved (outcomes) by the provider or patient. As a consequence, it could be argued that high levels of service engagement and improved patients' adherence to medical instructions are more likely to influence the realization of actors' perceived value ((Chan, Yim, & Lam, 2010; Osei-Frimpong, 2017). Drawing on the above, the following hypotheses are stated:

H₁: Higher levels of service engagement between the focal dyad during the consultation process are likely to positively influence patients' adherence to medical instructions.

H₂: Higher levels of service engagement between the focal dyad during the *consultation process are likely to positively influence the patient's perceived value realized.*

H₃: A patient's adherence to medical instructions is likely to positively influence the outcome of the service, which is translated into the perceived value realized.

2.2 Cross-level moderating effects of doctor-level variables

By default, healthcare institutions are required to offer an institutional assurance of service quality to the patient (Batista, Clegg, Pina e Cunha, Giustiniano, & Rego, 2015), and this assurance is expected to be demonstrated during the doctor-patient encounter. We conceptualise assurance as a positive declaration intended to inspire trust and confidence to

the patient (Vandamme & Leunis, 1993). These assurances are expected to affect the patient's perceptual beliefs among other influencing variables at the patient level (Wilson, Zeithaml, Bitner, & Gremler, 2016). Further, in service engagements, social roles project some behaviours which may influence actor's expectations (Akaka & Chandler, 2011). For instance, the doctors' social skills afford them the opportunity to effectively communicate with patients and create an enabling environment for the engagement process (Lin & Hsieh, 2011). Likewise, this stimulates the quality of the interactions and allows actors to share knowledge, which is also likely to moderate the patient level factors affecting the service engagement.

Congruent with the above doctor level factors, doctor-patient orientation is considered a critical factor to drive the collaborative efforts of the actors in the consulting room. Austin and Seitanidi (2012) opine that the dynamics of value creation changes as the relationship between partners evolves, which is likely to positively influence the service engagement (Taylor, 2009) at the group-level. Doctor-patient orientation is explained as the service provider's capability to respond effectively to patients and their commitment to understanding and meeting the patient's needs (Bove & Johnson, 2000; Brach, Walsh, Hennig-Thurau, & Groth, 2015). This could then empower patients and motivate them to take responsibility in managing their conditions, for instance, in relation to commitment to adherence (Taylor, 2009). Drawing on the above discussion, we argue that these aforementioned doctor-level factors (assurance, social skills and doctor-patient orientation) are more likely to moderate the patient-level factors that influence service engagement in clinical encounters. Thus, we hypothesise the following:

H4: The effect of (a) *patient's level of trust*, (b) *patient's perceptual beliefs*, and (c) *patient's level of interactions*, on service engagement in clinical encounters will be stronger when doctor-level assurance is provided in such encounters.

H5: The effect of (a) *patient's level of trust*, (b) *patient's perceptual beliefs*, and (c) *patient's level of interactions*, on service engagement in clinical encounters will be stronger when doctor-level social skills is exhibited in such encounters.

H6: The effect of (a) *patient's level of trust*, (b) *patient's perceptual beliefs*, and (c) *patient's level of interactions*, on service engagement in clinical encounters will be stronger when the doctor-level doctor-patient orientation is demonstrated in such encounters.

3. Methodology

A survey was conducted involving doctors and outpatients from 20 randomly selected public health facilities in the Accra and Tema metropolises in Ghana. As a dyadic study, patients were recruited after a doctor was interviewed (four outpatients per doctor). While doctors were purposively selected as a result of their restricted numbers, patients were selected employing a systematic random sampling technique. Prior to the main study, the research instrument was pre-tested involving 20 outpatients and 10 doctors from selected hospitals included in the main study. The main study employed both interviewer-led and self-completion mode of questionnaire administration. In all, 90 doctors and 360 outpatients out of 140 doctors and 420 outpatients respectively returned their completed questionnaires, representing a valid response rate of 64.3% and 85.7% respectively.

3.1 Measures

Measurement scale items were drawn from related literature and sensitively modified to fit the context of this research. As a result, all variables were measured using a 5-point Likert-

scale anchored with 1 (Strongly disagree), 3 (Uncertain), and 5 (Strongly agree). Trust was measured with a six-item scale adapted from Anderson and Dedrick (1990). Perceptual Beliefs was also measured with a five-item scale drawn from Anderson (1995) and Hausman (2004) with minor modifications. We also measured Interactions with a six-item scale adapted from Chen and Quester (2006) with some minor modifications. Service engagement was measured using a six-item scale adapted from Salanova et al. (2005). We measured Adherence with a four-item scale developed from Hausman (2004) and Seiders et al. (2015). Further, we measured Perceived Value with a five-item scale drawn from Mathwick, Malhotra, and Rigdon (2001) and Sweeney and Soutar (2001). Assurance was measured with a four-item scale adapted from Vandamme and Leunis (1993). We measured Social Skills with a seven-item scale adapted from Lin and Hsieh (2011) and Hausman (2004). Further, Doctor-Patient Orientation was measured using a six-item scale adapted from Brach et al. (2015).

3.2 Aggregation statistics

Our model represents variables from both patients and doctors with varying perceptions across the individual and group level. Following Shiu, Hassan, and Parry (2015), we conducted both intraclass correlation (ICC1 and ICC2) and interrater agreement within group coefficient (Rwg) to assess whether there was any significant variance in the independent variables at the between-group level as presented in Table 1. The results (ICC1, ICC2 and Rwg) confirm the appropriateness of aggregating the patient-level variables to the doctor-level, which also indicates that a multilevel analysis method is required.

Table 1. ICC1, ICC2 and Rwg results

Variable	ICC1	ICC2	Rwg
Trust	0.25	0.78	0.94
Perceptual Beliefs	0.21	0.69	0.90
Interactions	0.27	0.81	0.83

3.3 Analysis and results

Following Yu, Patterson, and de Ruyter (2013), we analysed the model using both multiple regression analysis (for hypotheses H1 – H3) and Hierarchical Linear Modelling (HLM) (in relation to hypotheses H4-H6a-c). Table 2 shows the descriptive statistics, reliabilities (in parenthesis) and correlations of the variables. The reliabilities were all above the threshold of 0.7 and therefore, considered acceptable. The results of the multiple regression analysis indicate a non-significant relationship between service engagement and perceived value realised ($F = 1.102$, $R^2 = 0.003$, $p > 0.1$), hence, rejecting hypothesis H2. On the other hand, there is a significant positive relationship between service engagement at the group level on patient's adherence to medical instructions ($F = 19.68$, $R^2 = .41$, $p < 0.001$), hence, supporting hypothesis H1. Similarly, patient's adherence to medical instructions also had a significant positive effect on the patient's overall perceived value realised ($F = 9.08$, $R^2 = .24$, $p < 0.05$) and hypothesis H3 is therefore supported.

Table 2. Descriptive statistics and correlations

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Service Engagement	3.68	0.63	(.90)								
2. Trust	3.85	0.61	.12*	(.94)							
3. Perceived Value	3.68	0.67	.03	-.08*	(.91)						
4. Adherence	3.48	0.48	.61	-.16**	-.19**	(.84)					
5. Perceptual Beliefs	3.42	0.68	.13	-.22**	-.20**	.07**	(.92)				
6. Interactions	2.42	0.73	-.01	-.11*	-.08*	.17**	.11**	(.86)			
7. Doctor-Patient Orientation	3.97	0.49	-.15	-.02	.01	.03*	-.05**	.14*	(.85)		
8. Assurance	3.99	0.53	-.08	-.19**	.05	.09*	.03*	.13*	.61**	(.72)	
9. Social Skills	4.25	0.53	-.09	-.17**	-.04**	.02	-.09*	.06	.54**	.59**	(.89)

Note: *p < 0.05; **p < 0.01. Individual level Cronbach alphas in parentheses; the figures (1-9) represent the variables presented on left side of the table

Table 3. Results of multilevel analysis: dependent variable (Service Engagement)

	Model 1			Model 2			Model 3		
	γ	SE	t-value	γ	SE	t-value	γ	SE	t-value
Intercept	3.78	0.03	114.76***	3.76	0.06	60.35***	2.85	0.50	5.76***
Patient-level control variables									
Age	-.104	0.04	-2.60**	-.104	0.04	-2.60**	-.104	0.04	-2.60**
Education	.095	0.04	2.38**	.095	0.04	2.38**	.098	0.05	2.18**
Gender	-.073	0.08	-0.91	-.069	0.07	-0.99	-.073	0.08	-0.91
Frequency of hospital visit	-.001	0.01	-0.10	-.002	0.01	-0.20	-.001	0.01	-0.10
Doctor-level control variables									
Gender	.075	0.03	2.50**	.071	0.03	2.37**	.075	0.03	2.50**
Years of practice	.092	0.04	2.30**	.102	0.05	2.04**	.096	0.04	2.40**
Location of health facility	-.003	0.01	-0.30	-.003	0.01	-0.30	-.003	0.01	-0.30
Level 1: Patient level influencing factors									
Trust				.236	0.04	5.90***	.238	0.05	4.76***
Perceptual beliefs				-.076	0.05	-1.52	-.101	0.04	-2.53**
Interactions				.344	0.09	3.82***	.416	0.07	5.94***
Level 2: Doctor level influencing factors									
Assurance							.201	0.04	5.03***
Social skills							.165	0.08	2.06**
Doctor-patient orientation							.213	0.05	4.26***
Cross-level interactions									
Trust X Assurance (H4a)							.136	0.05	2.72**
Perceptual beliefs X Assurance (H4b)							-.036	0.09	-0.40
Interactions X Assurance (H4c)							.145	0.06	2.42**
Trust X Social skills (H5a)							.105	0.09	1.17
Perceptual beliefs X Social skills (H5b)							.105	0.04	2.63**
Interactions X Social skills (H5c)							.119	0.04	2.98**
Trust X Doctor-patient orientation (H6a)							.179	0.08	2.24**
Perceptual beliefs X Doctor-patient orientation (H6b)							-.016	0.02	-0.80
Interactions X Doctor-patient orientation (H6c)							-.018	0.02	-1.20
R²			0.13			0.30			0.41

*** p < 0.0001; ** p < 0.05

4.0 Discussion and implications

The purpose of our empirical study was to understand the value co-creation conceptual domain by examining the doctor-patient encounter in healthcare service delivery. We focused on both doctors and patients to further our understanding of some key fundamental influencing factors that affect actors in consultations at the individual patient level and the group-level. The results also ascertained the respective perceptions of these factors on expected outcomes leading to value creation. Thus, we extend current literature by identifying specific contextual influencing factors of the doctor-patient encounter and demonstrate its positive relationship with service outcomes such as adherence and the overall perceived value. While previous studies (e.g., Hausman, 2004; Lin & Hsieh, 2011; Prigge et al., 2015) have examined the patient level factors only, our study departs from these works by establishing the cross-level interactive effects at the group level of the focal dyad, and how these drive the service engagement and service outcomes.

The cross-level interaction (moderating) effects established in this study are of theoretical value. First, it presents a clearer understanding of the dynamics of the consultation process between the doctor and patient at both individual and group levels. For instance, perceptual beliefs at the individual level had no significant effect on service engagement. However, this is significantly moderated by the doctor's social skills to positively influence service engagement at the group level. Second, the interesting results point to the patient-level factors that are influenced at the group level. We established from our findings that doctor-level assurance significantly moderates patient-level trust and interactions at the group level. Likewise, doctor-level social skills significantly moderates patient-level perceptual beliefs and interactions, whereas, doctor-level 'doctor-patient orientation' significantly moderates patient-level trust on their effects of service engagement at the group level. The findings shed light on Brach et al. (2015) assertion of a need for a dyadic investigation of such encounters to present a holistic understanding of the process leading to value outcomes, which is often missing in co-creation research.

Our findings established a non-significant relationship between service engagement and patient's perceived value realised at the group level. The result is unexpected considering the assertion that higher levels of service engagement in essence are expected to result in better service provision leading to positive experiences (Chandler & Lusch, 2015). This finding contradicts the extant literature that reports a positive relationship between the constructs (Chan et al., 2010). However, we established a significant positive relationship between group level service engagement and patient's adherence to medical instructions. The finding suggests that once patients are well engaged in clinical encounters, they are motivated to take full responsibility of their condition and, in effect, become more conscious of adhering to the doctor's instructions. Similarly, improved adherence to medical instructions were found to be significantly and positively related to the patient's overall perceived value realised. This finding is consistent with the extant literature suggesting that adherence is strongly correlated to treatment outcomes (Camacho, De Jong, & Stremersch, 2014; DiMatteo et al., 2002), which is also projected to relate to the overall value gained from the service (Osei-Frimpong, 2017). Further, adherence to medical instructions is an important link between the service process and value outcomes in healthcare. This current work responds to Frow et al. (2015) call to explore the co-creation process from different perspectives, and in our study, we explore the dynamics of the doctor-patient encounter process and have established to some extent, the mutual dependency of the involved actors in the service encounter.

Our conceptualization of value co-creation suggests fundamental factors that influence clinical encounters that call for a mutual understanding of the focal dyad during the encounter process. Doctors should adopt delivery approaches that would evoke positive experiences for the patient in the consulting room, taking into account the perceptual beliefs of the patients. While patient participation in the consulting room is widely researched, most studies

rationalize it as demand for prescription (Jaakkola & Halinen, 2006). It is worth noting that improving service engagement in consultations between the focal dyad potentially contributes to the service outcomes, as evidenced in the findings. The focal doctor-patient dyad is encouraged to take cognizance of these factors in an attempt to co-create value.

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