

SERVING YOURSELF: VALUE SELF-CREATION IN HEALTH CARE SERVICE

Structured abstract

Purpose: This study investigates the concept of value self-creation and provides a formal definition for this concept. We suggest that it sits within an overall continuum of value creation that includes value delivery and value co-creation.

Design/methodology/approach: A proposed model of value self-creation was developed and empirically tested in a health care self-service, bowel screening. An online, self-completion survey was administered to Australian men and women aged 50 years and above, as this represents the primary target population for bowel screening.

Findings: The results of the Structural Equation Modelling in AMOS suggest that consumers can self-create value, leading to desired outcomes of satisfaction with the consumption experience and behavioural intentions to engage with the self-service again in the future. The findings provide empirical evidence to suggest that consumers' behavioural contributions represent the most important consumer contributions in self-service, followed by cognitive contributions.

Originality/value: The study provides an empirically-validated model of value self-creation in health care self-service. Much of the existing research on value co-creation has concentrated on traditional service types and is ill-placed to explain the value creation processes in self-services. This study offers originality by addressing this gap and demonstrating to service managers how they can manage consumer contributions towards a self-service, and facilitate value-self creation, even though they are not present during the consumption stage of the consumption process.

Keywords: self-service, value creation, value self-creation, health care

Article classification: Research paper

1. INTRODUCTION

In his book, *My Life and Work*, Henry Ford remarked that “any customer can have a car painted any color that he wants so long as it is black” (Ford, 1922). This famous quote exemplifies a value delivery philosophy where organisations determine, create, and deliver value to consumers. In this philosophy, consumers are left to accept or reject the value propositions determined by organisations, playing an inactive role in the value creation process, and are viewed as passive recipients of firm activities, separated from and outside of the firm (Deshpande, 1983; Payne et al., 2008). This value delivery perspective continued to underpin marketing activity in the years that followed and is best exemplified by the concept of the value chain (Porter, 1985). It continues to underpin marketing activity to date, particularly with regards to the attainment of competitive advantage for organisations.

With the rise of Service-Dominant (S-D) logic, a new paradigm emerged, shifting the understanding of value from being delivered to being co-created (Vargo and Lusch, 2004). In this new paradigm, consumers play a more active role in the value creation process, and are seen as operant resources in the production of goods and services with organisations (Constantin and Lusch, 1994; Vargo and Lusch, 2004). Consumers are viewed as collaborators and resource integrators with service organisations, adding a new perspective to existing conceptualisations of value creation.

However, the value delivery and value co-creation perspectives are unable to explain an increasingly relevant service type that has emerged in the market, the self-service. Self-service has emerged relatively recently within the last decade, with a strong emphasis on technologically-facilitated self-services, particularly in the area of banking and finance (Curran and Meuter, 2005). In the meantime, there is an emerging body of work in health care academe that examines technologically-based self-services (e.g. Schuster *et al.*, 2013)

paralleled by predictions in industry that 80% of doctors will be replaced by technologically-based machines by 2030 (Khosla, 2012), demonstrating the growing relevance and importance of self-service in the health care service sector.

Health care services can be suitable for adaptation from traditional services (Cunningham *et al.*, 2009) to self-services as many health services are routinised. Self-services were originally designed to replace these routinised or standardised aspects of interpersonal service delivery (Forbes, 2008). Preventative health services, in particular, are suitable for adaptation to self-service, given their standardised nature (e.g. breast checks, Pap smears). Given the importance of health care, the lack of understanding of self-service in this area represents an important gap in the literature. There is an urgent need for an expansion in our understanding around value creation, in order to better manage self-service in the health service sector.

The current study seeks to expand existing conceptualisations of value creation in response to the emergence of service types that are self-managed. The scope of our current study is limited to those service phases that have traditionally involved direct, interpersonal interactions between consumers and service providers, but are increasingly being replaced with self-service expectations and technologies. These service phases represent part of an overall service process, which includes backstage processes and contributions by the provider that are as important for a successful service outcome. We propose the use of consumer perceived value as the theoretical basis of this study, as consumer value is useful in incentivising individuals into action (Dann, 2008). The concept of value is of considerable importance in a number of marketing fields, including health service marketing (e.g. McColl-Kennedy *et al.*, 2012). We extend the current conceptualisations of value creation by proposing the concept of value self-creation, consistent with the nature of self-service and self-activities. We define value self-creation as a value creation process whereby the consumer assumes primary responsibility for creating value in a consumption experience,

occurring independent to the provider. We seek to explore value self-creation in self-services only as this service type reflects a service example of activities occurring within the “customer sphere” that does not overlap with the “provider sphere” (Grönroos and Voima, 2013, p.136), and developed a research question to guide the current inquiry:

RQ: How is value self-created in health care self-management?

We operationalise our investigation of value self-creation in health care self-management by selecting a health self-service – bowel screening. Bowel screening involves a test called a faecal immunochemical test, which involves placing small samples of toilet water or stool on a kit that can be acquired from a pharmacy (Bowel Cancer Australia, 2014).

The study contributes to the literature by extending our understanding of value creation by proposing the concept of value self-creation. We suggest that value self-creation is not intended to replace value co-creation, nor that value co-creation should displace the importance of value delivery, rather that value self-creation, value co-creation, and value delivery represent three forms of value creation that sit along a continuum. That is, this study acknowledges the growing significance of the self-service sector, in addition to the existing forms of traditional services.

In the following sections, we present a literature review, followed by a conceptual framework. We then present the study hypotheses and report empirical analyses that test the predicted relationships. The paper concludes with a discussion of the theoretical and managerial contributions and implications of this study and suggestions for further research.

2. LITERATURE REVIEW

2.1. Self-service

In response to the advancements in technology and changing consumer preferences, service organisations have incorporated significant changes in their approaches of service delivery. We identify two different forms that self-service can take; technologically driven and non-technologically driven self-service. In technologically driven self-services, technological innovations have transformed the nature of services (Schuster *et al.*, 2013; Meuter *et al.*, 2005), allowing consumers to manage services themselves without direct service provider employee involvement (Meuter *et al.*, 2003). Much of the work on technology driven self-services has centred on service areas such as retail (e.g. supermarket self-checkout), banking (e.g. ATMs), and travel (e.g. airport self-check in), which use technological interfaces to facilitate the self-service. These technological interfaces are referred to as self-service technologies (SSTs) (Meuter *et al.*, 2000).

Another form of self-service is non-technologically based activities, which remains an important area of research, particularly in the Do-It-Yourself (DIY) literature (Wolf and McQuitty, 2013). DIY activities represent a type of self-service as it describes consumer activities that generate goods and services (Wolf and McQuitty, 2013), independent of a professional (Pinto and Gerht, 1991). Examples of non-technologically driven self-services that are also DIY activities include home improvement and auto repairs (Williams, 2008). These activities relate to the fulfilment of consumers' economic needs to save money, or hedonic needs for pleasure or a sense of fulfilment from successfully producing an outcome independently (Pinto and Gerht, 1991).

SSTs and DIY activities are typically positioned as being beneficial to consumers in that they offer consumers greater control, increased flexibility, and greater customisation, leading to a greater sense of achievement and empowerment in successfully self-managing a service. These value propositions are both utilitarian and hedonic in nature, in that they produce a desired outcome for the consumer that also fulfils some utilitarian/functional need, as well as

provides the added benefit of some hedonic/emotional benefit. This provides mutually-beneficial outcomes to service organisations as it results in the outsourcing of routine activities to consumers, resulting in the streamlining of service delivery processes, leading to greater organisational efficiency. Self-service is most apparent in consumption contexts that are less complex and less interpersonal. For example, organising an appointment to see a doctor typically involves telephoning a medical practice and speaking with an administrative staff member to organise an appointment date and time. However, more and more medical practices are moving towards online self-booking systems where patients can use online health directories to search through available appointment slots and self-select their preferred appointment date and time for their doctor's appointment (Health Engine, 2016).

Many health care management activities undertaken independently by individuals can be described as self-activities (McColl-Kennedy *et al.*, 2012) and do not require direct contributions of a service provider. This represents a form of DIY or self-service in health care management. One technology driven health self-service example is blood glucose monitoring, where an individual measures their own blood sugar levels daily using a blood glucose monitor. One non-technologically driven health self-service example is breast self-exams, where women feel for lumps in their own breasts and perform this self-service monthly. Given that self-services were originally designed to replace routinised aspects of interpersonal service delivery (Forbes, 2008) and that preventative health services, in particular, are standardised nature, we chose bowel screening as the study context for this inquiry. Bowel screening is self-administered and therefore reflects a self-service, unlike breast or cervical screening, which are not self-administered. Furthermore, given that value is an appropriate means to incentivise consumers into action (Dann, 2008), investigating value creation is appropriate for understanding how consumers may be encouraged to engage in self-activities in health care management like bowel screening.

2.2. Background on value creation

Value creation is a paradigm (Sheth and Usley, 2007) involving multiple stakeholders in the marketing process who work together at various points of the consumption process to create value. It is viewed as a process in which firms and consumers interact at various stages of consumption to co-create the good or service (Prahalad and Ramaswamy, 2004). It was originally theorised as a concept that takes the perspective of the organisation, and views firms as being responsible for creating value via their offering of goods and services (e.g. Kotler, 1972). This is reflected in the concept of value-in-exchange, which considers the value embedded in goods and services (Sandström *et al.*, 2008). Value co-creation was later presented as an alternative to the firm-oriented perspective, particularly given the rise of service logic (Normann and Ramirez, 1993) and then Service-Dominant (S-D) logic (Vargo and Lusch, 2004). The concept of value-in-use is generated from this logic and proposes that value is realised during the consumption experience (Vargo and Lusch, 2004). In addition, a growing number of scholars have observed that consumers are playing an increasingly active and constructive role in their consumption experiences (e.g. Cova and Dalli, 2009; McColl-Kennedy *et al.*, 2012; Moeller, 2008). However, much of this research has focussed on consumer contributions in dyadic exchanges whereby consumers and organisations interact to co-produce a service. There is limited research that explores consumer contributions in a self-service, where the importance of the consumer contributions is heightened due to the removal of a direct service provider from the consumption experience. We aim to address this gap by examining the value creation process undertaken independently by consumers of self-services and propose the concept of value self-creation in self-services.

3. CONCEPTUAL FRAMEWORK AND RESEARCH

HYPOTHESES

This study proposes the concept of value self-creation in self-services and uses health care management as a context to operationalise this conceptualisation. Health care management requires consistent and long-term engagement in various health self-managed activities to maintain wellbeing and is a suitable context to examine value self-creation. We define value self-creation as a value creation process whereby the consumer assumes primary responsibility for creating value in a consumption experience, occurring independent to the provider.

3.1. Value creation continuum

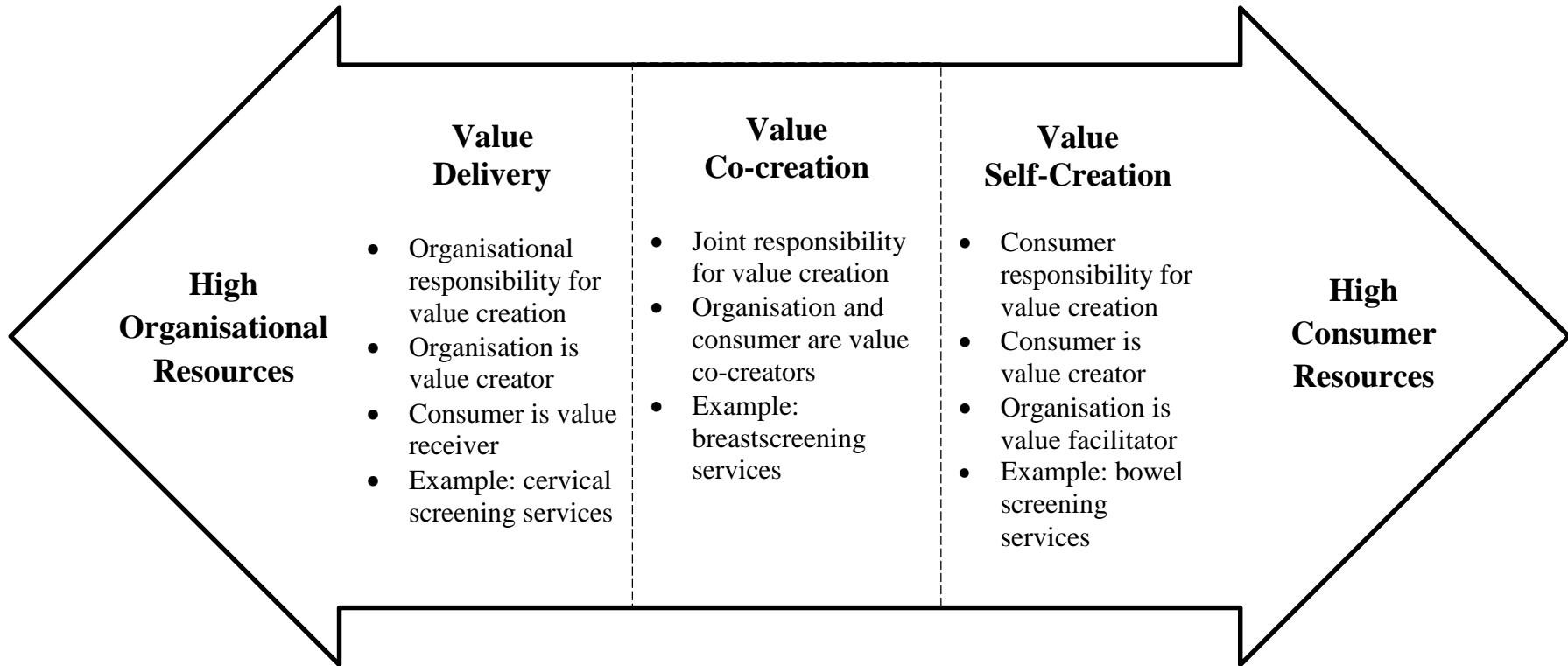
Given the participatory nature of co-creation, there is a largely implicit assumption that consumers desire active participation in their consumption experiences. We posit that consumers co-create to varying degrees of involvement, as this is consistent with Mathwick *et al.*'s (2001) view that value can be actively or reactively (i.e. passively) experienced by consumers, and Eiglier and Langeard's, (1999) and Maleri's (1997) views that consumer participation can vary in its degree of involvement.

We argue that value creation functions as an overall continuum (Figure 1), given the differing levels of contributions provided by the individual consumer and the organisation in different service types and at different stages of the consumption experience (i.e. pre-consumption, consumption, and post-consumption) (Russell-Bennett *et al.*, 2009). We identify three value creation types within this continuum, which include value delivery, value co-creation, and value self-creation, situated at various points along that continuum. This continuum is reflective of the degree of resources provided by each actor towards the consumption experience and is closely related to three different service types; services that are delivered, co-created, and self-created. Organisational resources refer to the inputs provided by the service organisation. These relate to activities that create value such as service quality

dimensions like administrative, interpersonal, and technical quality (Dagger et al., 2007).

Consumer resources refer to the inputs provided by consumers towards the value creation process. These relate to the self-activities generated by the consumer (McCull-Kennedy et al., 2012).

Figure 1: Value creation continuum



3.2. Value delivery

In value delivery, the primary responsibility for value creation is assumed by the organisation. The organisation plays a more active role than the consumer, who plays a more passive role in the exchange. In value delivery, the organisation assumes responsibility for determining, creating, and delivering value to the customer. Exchanges in value delivery typically involve the production and exchange of goods, reflecting value-in-exchange (Sandström *et al.*, 2008). The value creation type that is delivered reflects firm value creation (Gummerus, 2013), which describes value creation at the firm level, primarily as means of achieving competitive advantage. We argue that this value creation type is distinct from existing conceptualisations of value co-creation that are based on service exchanges. We argue that value delivery is primarily based on the exchange of goods, however consumers still derive value from their acquisition and use of goods, and therefore value delivery still represents a value creation type.

3.3. From value co-creation to value self-creation

We posit that service exchanges can involve the co-creation or the self-creation of value, depending on the level of contribution provided by each actor in the service exchange. Consumers actively contribute to both processes, as service exchanges cannot occur without their participation (Fließ and Kleinaltenkamp, 2004). Value co-creation is the most commonly discussed in the existing literature, and describes consumption service experiences where the responsibility for value creation is shared between the organisation and the consumer. Both actors provide contributions towards the value creation process at a comparable level and both actors play an active role in the resource integration in this process. Consumers are viewed as collaborators in this process (Vargo and Lusch, 2008) and co-determine, then receive value through these experiences (Gummerus, 2013). In co-

creation, consumers are co-producers of the service (Cowell, 1984; Edvardsson et al., 1994, Meyer and Blümelhuber, 1994; Schade, 1995), or partial employees (Bateson, 1985; Schneider and Bowen, 1983; Kelly et al., 1992). For example, breast cancer screening (services) requires contributions from both radiographers (service providers), and clients (consumers). Radiographers provide instructions to women during a breast screen, such as asking them to hold their breath while an image is captured, and the women provide such contributions towards this service process in order for the screen to be successful. The contributions considered in the value co-creation process are provided by both actors occur at the phase of the overall service where the interpersonal exchange occurs reflecting the overlapping of consumer and service provider spheres. In contrast, the contributions considered in the value self-creation process are primarily provided by the consumer, who acts as the value creator. The organisation assumes the role of the value facilitator, through their provision of the goods and services that consumers use in self-services, reflecting service contributions still occurring at the backstage or behind-the-scenes phases of an overall service exchange. In value self-creation, the phase of the overall service where the interpersonal exchange occurs is replaced by a self-service that can be technologically driven or non-technologically driven. This leaves consumers to self-produce a service that would have traditionally been co-produced in the past, therefore requiring higher levels of resource integration from the consumer. The contributions in focus are on those provided within the consumer's sphere, i.e. the consumer's activities, (Payne *et al.*, 2008; McColl-Kennedy *et al.*, 2012). In value self-creation, we examine how these consumer contributions create value, reflecting the process of value self-creation. For example, Type 1 diabetics are able to monitor their own blood sugar levels using a glucose monitor, reflecting a form of technology driven self-service.

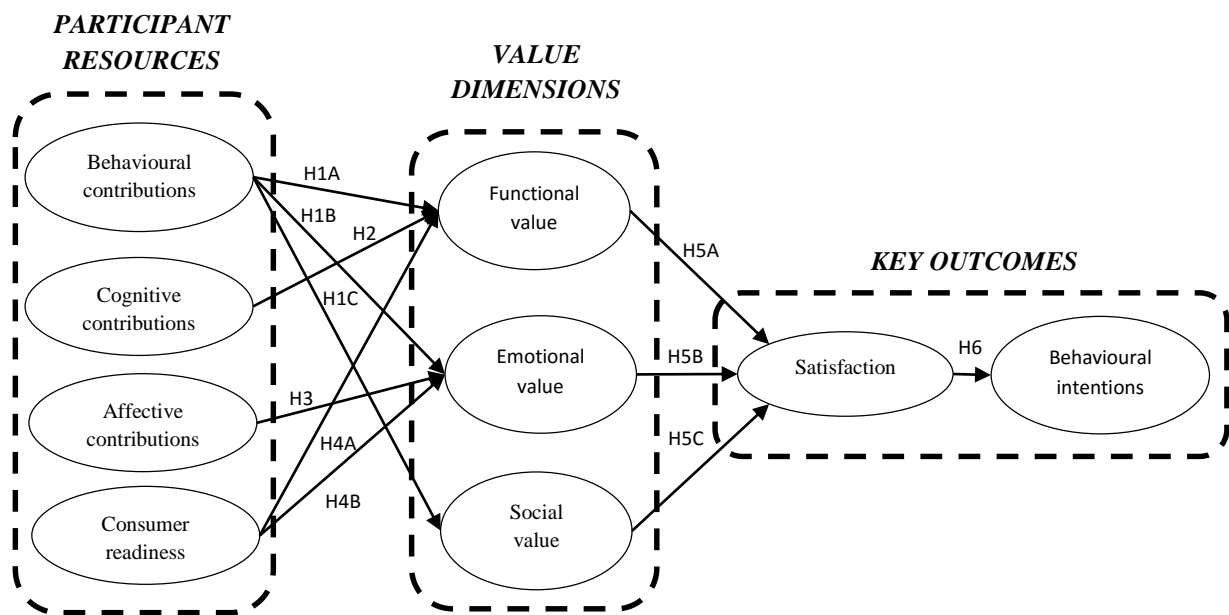
We clarify that value self-creation is not a subset of value co-creation. Guided by Grönroos & Voima's (2013) work that shows a clear distinction between self-created activities (i.e. activities within the customer sphere) and joint activities (i.e. activities within the overlap between the customer and organisation spheres), we regard self-creation as being different from co-creation.

Despite the relevance of value self-creation, the prevalence of DIY consumer segments, and growth of self-servicing in many service sectors including health care, research investigating consumer self-created value remains scarce. This represents a gap in the literature which the current study seeks to address.

4. A proposed model of value self-creation in health self-service

As it has been argued that consumers can be the "sole-creators of value" (Grönroos, 2006, p. 34), we developed a model of value self-creation (Figure 2). The model identifies key value drivers in the form of participant resources provided towards the self-service, key value dimensions experienced, and marketing outcomes.

Figure 2: Proposed model of value self-creation



4.1. Value dimensions in value self-creation

Value is defined as an interactive relativistic preference experience, conceptualised as a multi-dimensional construct (Holbrook, 2006) in which some of the dimensions are proposed to be independent of one another (e.g. Sheth, Newman, & Gross, 1991) while others have been validated as being inter-related (e.g. Sweeney & Soutar, 2001). Three value types are included in the model: functional value, emotional value, and social value. **Functional value** is an important value dimension of self-created value as it refers to performance, functionality, and utility (Sheth *et al.*, 1991; Sweeney and Soutar, 2001; Russell-Bennett *et al.*, 2009). This refers to the utility of engaging with health self-managed activities, which is a primary outcome that individuals in health care management seek (Zainuddin *et al.*, 2011).

Emotional value is another important value dimension of self-created value as it is associated with various affective states, which can be positive (e.g. confidence and pleasure) or negative (e.g. anger and fear) (Sánchez-Fernández and Iniesta-Bonillo, 2006) and the promotion or alleviation of them. Utility in emotional value is derived from the feelings or affective states,

generated or aroused by use or behaviour (Sweeney and Soutar, 2001) and is therefore another important outcome in health care management.

Social value is the final value dimension of self-created value. It focuses on affecting other people as a means to achieving a desired goal such as status or personal influence (Russell-Bennett *et al.*, 2009) and therefore, its utility is acquired through the association with social groups (Sheth *et al.*, 1991), the enhancement of an individual's self-concept (Sweeney and Soutar, 2001), or the identification of one's self as an opinion leader (Zainuddin *et al.*, 2011). Hence, it is deemed to be an important value dimension in health care self-management.

4.2. Participant resources in value self-creation

The tri-component attitude model is one of the most prevalent approaches to explaining consumers' decision making and behaviour processes (Eagly and Chaiken, 1993). This model has been used widely within marketing and is comprised of three major components: cognition, affect, and behaviour (Eagly and Chaiken, 1993; Taylor *et al.* 2006). Previous research in value co-creation identifies the importance of customer inputs in the value creation process and refers to these inputs as "self-activities" as they are generated by the customer (McColl-Kennedy *et al.*, 2012). The self-activities have been further categorised into behavioural activities, cognitive activities, and affective activities (Zainuddin *et al.*, 2013). Thus, in our proposed model of value self-creation, we adopt the same categories of self-activities that are contributed by individuals towards their own consumption experiences.

First, behavioural contributions were operationalised using the co-production scale by Bendapudi and Leone (2003). This encompasses the actual, physical participation of a consumer in a service process to produce the core service offering. In the context of traditional, dyadic exchanges, this occurs collaboratively with a frontline service provider. For example, in breast screening, a radiographer is responsible for operating a mammogram

machine, while a woman is responsible for positioning her body in a way that is suitable for an image to be taken by the mammogram machine. In self-service situations, the consumer's behavioural contributions occur without contributions from a frontline service provider. Due to the inseparable nature of services (Lovelock, 1983), behavioural contributions are a critical component of value self-creation. Without the behavioural contributions of an individual, there would be no successful engagement with and completion of an activity. Without behavioural contributions, no service can be produced or consumed/experienced, and the utility of a self-service such as bowel screening remains unfulfilled. Therefore, a utilitarian outcome such as functional value cannot be achieved. Furthermore, without the production of a service, individuals cannot derive any other value dimensions. Therefore, given the significance of behavioural contributions towards self-service, we hypothesise that this will have a positive impact on value in general, and with its dimensions specifically.

Hypothesis 1 Behavioural contributions will have a positive impact on functional value (A), emotional value (B), and social value (C) in value self-creation.

Second, cognitive contributions were operationalised using the motivational direction scale by Katerberg and Blau (1983). This encompasses an individual's understanding of their role in the service process. It refers to the direction and maintenance of effort by the individual in order to produce desired outcomes (Katerberg and Blau, 1983) and refers to the formulation of knowledge and perceptions through direct experience and information processing, i.e. the beliefs a consumer has about a good, a service, or an activity. As such, if an individual has positive beliefs about the outcome of an activity, then they will have a positive attitude about the behaviour associated with that activity, or tasks required of them to engage in that activity. Given that utility can only be achieved if individuals understand their role associated with the activity, we hypothesise that cognitive contributions will have a positive impact on functional value.

Hypothesis 2 Cognitive contributions will have a positive impact on functional value in value self-creation.

Third, affective contributions were operationalised using the stress tolerance scale by Bar-On (1997). This encompasses an individual's emotional contributions towards a service, and refers to the ability to process emotions and emotion-relevant stimuli in order to guide thinking and behaviour (Mayer *et al.*, 2008). It relates to the affective component, based on emotional experiences and preferences, focussing on a consumer's feelings. These emotions and feelings are primarily evaluative in nature, i.e. people who have positive affect reactions to an experience are more likely to evaluate an attitude object favourably than those who have negative affect reactions (Eagly and Chaiken, 1993). Given that emotional value is achieved through the management of one's emotions, we hypothesise that affective contributions will have a positive impact on emotional value.

Hypothesis 3 Affective contributions will have a positive impact on emotional value in value self-creation.

In addition to the three consumer contributions (behavioural, cognitive, affective) that reflect the tri-component attitude model, we include a fourth consumer contribution towards value self-creation, consumer readiness. To operationalise consumer readiness, we used an existing scale measure developed by Ho and Ko (2008), based on conceptualisations and operationalisations by Parasuraman (2000) and Meuter *et al.* (2005). Consumer readiness is originally based on Parasuraman's (2000, p. 308) concept of "technology readiness", which refers to individuals' "propensity to embrace and use new technologies for accomplishing goals in home life and at work." This construct is particularly relevant in value self-creation, as it helps explain individuals' propensity to use new technologies. Traditional health services that adopt self-service delivery modes can be regarded as new technologies as they

involve new activities, new processes, and a redistribution of the contributions provided by service organisations and consumers. This construct was further explicated by Meuter et al. (2005, p. 61) to reflect “consumer readiness”, which encompasses role clarity, motivation, and ability.

Role clarity and ability, reflects an individual’s knowledge and understanding of the tasks required of them in order to successfully engage in the self-service, and the skills required to complete these tasks (Meuter et al., 2005). These are oriented around the successful engagement with a self-service, resulting in utility of engaging in self-service. Therefore we hypothesise that consumer readiness has a positive influence on functional value. Consumer readiness also encompasses motivation, which refers to a desire to receive the rewards associated with engaging in a self-service, such as feelings of accomplishment and self-confidence (Meuter et al., 2005). This desire is emotions-oriented, therefore we hypothesise that consumer readiness has a positive influence on emotional value.

Hypothesis 4 Consumer readiness will have a positive impact on functional value (A) and emotional value (B) in value self-creation.

4.3. Key outcomes in value self-creation

Two main key outcomes are identified in our proposed value self-creation model: **satisfaction** and **behavioural intentions**. These constructs have been identified as important elements of the value co-creation process in health prevention service research (see Zainuddin *et al.*, 2013). They remain relevant and important elements to the proposed value self-creation process model, as individuals’ intentions to continue with health self-management activities is important because it produces mutually-beneficial outcomes for individuals as well as the society that they belong to. The current literature base offers strong evidence to suggest that consumer perceived value leads to satisfaction (Zainuddin *et al.*, 2013), which in turn, leads

to behavioural intentions to engage in the activity again in the future (Eggert and Ulaga, 2002). This leads to the fifth and sixth hypotheses of this study:

Hypothesis 5 Functional value (A), emotional value (B), and social value (C) in value self-creation will have a positive relationship with satisfaction.

Hypothesis 6 Satisfaction will have a positive relationship with behavioural intentions in value self-creation.

5. METHOD

5.1. Study context

The hypotheses were empirically tested using Structural Equation Modelling (SEM) in a health care self-service setting that reflected a DIY health self-management activity that did not involve resource integration from a service provider; bowel screening. In bowel screening, the DIY health self-management activity involved the use of a self-administered screening kit in a participant's own home. This reflects a "private self-service" which is one that is carried out by a consumer without interaction with others (non-service providers) (Collier *et al.*, 2014; p. 60). Consumers are able to purchase a screening kit in any pharmacy without a prescription from a medical professional. The screening kit is used at home to collect two separate samples of an individual's bowel movements, after which the individual mails the collected samples to a pathology laboratory to be analysed. This is similar to other health self-management activities involving the use of a physical good, such as monitoring blood sugar levels using a blood glucose monitor test kit, using callipers to measure body fat, or using a thermometer to monitor body temperature. Bowel screening is a credence service, requiring specialised knowledge to produce (Ostrom and Iacobucci, 1995). This would suggest that a self-service approach would be unsuitable for services such as bowel screening,

as everyday consumers are not likely to possess this specialised knowledge. However, cancer screening services such as bowel and breast screening are unique in that despite being credence services, they are also routine in the way they are delivered to all consumers who use them. Given that self-services were originally designed to replace the routine aspects of traditional services, this represents a suitable service context for investigating value self-creation.

5.2. Sample

The current study collected data from users of bowel screening self-service between 25 July and 5 August 2013. A survey method was used and hosted online using Qualtrics. The sample was acquired from a commercial provider and an email invitation was sent by the commercial provider to potential respondents seeking their participation in the study. Both men and women aged 50 years and above, and who had never been diagnosed with bowel cancer were sampled Australia-wide, as this represented the government's primary target market segment for bowel screening (Bowel Cancer Australia 2015). A final sample size of 378 was acquired, of which 44.6% were women and 55.4% were men. The sample was predominantly educated to the level of high school, or some equivalent qualification (63.8%), and earned a low (25.9%) to moderate (28.3%) income between \$18,201-\$37,000 and \$37,001-\$80,000 annually, respectively.

5.3. Construct measurement

Multiple item scales from the literature were used and adapted towards the bowel screening context of this study (Appendix 1). All items were measured using a 5-point Likert scale. The data were initially subjected to reliability testing in SPSS and construct validity was then examined on the indicators of the latent constructs using exploratory factor analysis. Principle axis factoring using direct oblimin rotation was conducted on the items after reliability

analysis (Tabachnick and Fidell, 1996). Items with low loadings below 0.60 and that cross-loaded on multiple dimensions were removed (Nunnally and Bernstein, 1994) (Appendix 1). The descriptive analysis revealed moderate to high mean scores for all construct items and the correlations matrix is presented in Appendix 2. All of the indicators met the minimum threshold of .60 and were retained. The construct items were subject to factor analysis to determine dimensionality and assess whether the model as an adequate fit to the data. The overall model had a satisfactory fit: $\chi^2=2370.02$ (df=909), CMIN/DF=2.607, RMSEA=.061, RMR=.04, SRMR=.0577, CFI=.910. The Average Variance Extracted (AVE) was calculated for all constructs and were greater than the squares of the parameter estimates between factors (\emptyset^2) (Appendix 2).

6. RESULTS

In order to answer the overarching research question, “*RQ: How is value self-created in health care self-management?*” and to test the hypotheses, Structural Equation Modelling (SEM) was conducted in the SPSS AMOS 21 software programme. The reported findings are assessed based on the estimated path coefficient β value with critical ratio (C.R. equivalent to *t*-value) and *p*-value. Standard decision rules (*t*-value ≥ 1.96 , and *p*-value is $\leq .05$) are applied to decide the statistical significance of the path coefficient between dependent variable and independent variable (Byrne, 2010).

The output revealed that, all of the hypothesised relationships were significant with the exception of *H3 Affective contributions will have a positive influence on emotional value*, and *H5C Social value will have a positive influence on satisfaction*. In other words, H blah blah blah were supported. Modification indices suggested three additional relationships in the model, which were added and the model retested (Table 1).

[INSERT TABLE 1 ABOUT HERE]

H3 and H5C remain unsupported. The additional relationships in the model indicated that cognitive contributions also had a positive influence on emotional value ($\beta = .200, p = .009$) in addition to its hypothesised influence on functional value ($\beta = .150, p = .029$). Although the hypothesised relationship between social value and satisfaction (H5C) was non-significant, evidence was also found for a direct relationship between social value and behavioural intentions instead, whereby social value had a direct and positive influence on behavioural intentions ($\beta = .072, p = .012$), rather than an indirect relationship via satisfaction. Evidence was also found for a significant and positive influence on behavioural intentions by emotional value ($\beta = .095, p = .040$), suggesting that satisfaction may have a mediating effect on this relationship.

7. DISCUSSION

The current study sought to address the overarching research question, “*RQ: How is value self-created in health care self-management?*” In doing so, the study first identified the consumer resources that are relevant in value self-creation, namely behavioural contributions, cognitive contributions, and consumer readiness. The study also identified that the three value dimensions that were self-created, functional, emotional, and social, all had positive influences on important service outcomes of satisfaction with the self-service experience and behavioural intentions to engage with the self-service again in the future.

7.1. The role of the consumer in value self-creation

The results provide empirical evidence to support the hypothesis that behavioural contributions represent the most important consumer contribution towards value self-creation, as it had a positive influence on all value dimensions. Previous research has suggested that when health services take an expert/patient delivery approach, the role of the consumers’

behavioural contributions diminishes (Zainuddin et al., 2013). The findings of the current study provides an important contribution to our understanding of consumer contributions towards different service types, and provides evidence to show the heightened importance of behavioural contributions when the successful production of a service, such as the case in self-services, is dependent on the consumer, and they are required to be active actors in this process.

The results also indicated that in addition to positively influencing functional value, cognitive contributions also had a positive influence on emotional value. We begin to explain this by suggesting that cognitive contributions provide individuals with a sense of control, which is an important outcome in health screening (Zainuddin et al., 2011). Control provides the use of functional means (i.e. cognition) to achieve a desired emotional state (i.e. emotional value) (Bandura, 1993). The support of *H4 Consumer readiness will have a positive influence on functional value (A) and emotional value (B)*, also lends support for the greater importance of behavioural and cognitive contributions over affective contributions in self-service.

The lack of support for the influence of affective contributions on emotional value was a surprising finding. We suggest that this could be attributed to the physical environment in which the self-service is conducted. The environment includes environmental features that shape consumers' perceptions of their experiences (Gotlieb et al., 1994). In the case of a self-service like bowel screening, this is performed in an individual's own home, rather than in a medical facility. The two environments differ greatly, whereby individuals are likely to associate medical facilities with illness, while the home is likely to be viewed as a more comfortable environment. The home environment is likely to put an individual at ease, reducing the effect of negative emotions associated with having to conduct a bowel screen, therefore negating the need for affective contributions to manage one's emotions.

7.2. The influence of self-created value on key outcomes

The results provide empirical evidence to demonstrate that functional value is a stronger driver of satisfaction than any other value dimension. This is consistent with previous research (see Zainuddin et al., 2013) and lends further support to the notion that despite the emotionally-laden context of cancer, cancer screening is likely to be viewed by screeners as a primarily functional task that provides utility through the safeguarding of their health. The influence of emotional value on satisfaction, albeit weaker than that of functional value, as well as its direct influence on behavioural intentions suggest that this is still an important value dimension for individuals, that can help with behaviour maintenance in the long-term.

The unexpected influence of social value on behavioural intentions suggests that when individuals acquire enough perceived expertise in performing a self-service, its results in the enhancement of their self-concept (Sweeney and Soutar, 2001) or increases their identification as an opinion leader (Zainuddin et al., 2011). This would appear to increase their self-efficacy, resulting in a higher likelihood that they would engage in the self-service again in the future.

7.3. Theoretical contributions and implications

The major contribution provided by this study to theory and research is the conceptualisation of value creation as an overall continuum, encompassing three different value creation types based on the varying degrees of resources provided by organisations and consumers. Rather than suggesting an evolution in the concept of value creation, implying a replacement and displacement of existing value creation thinking, we instead suggest an addition to current thought in the value creation literature by offering a formal conceptualisation of value self-creation. Our study contributes to existing knowledge in service marketing by providing empirical evidence for value self-creation, enabling deeper understanding of this concept. We

suggest that the three value creation types identified in the proposed continuum are equally important and relevant in marketing, given the many service types evident in the marketplace, i.e. services that are delivered by organisations, services that are co-created between organisations and consumers, and self-services that are self-managed by consumers.

Although collaboration underpins all three service types, given the varying levels of contributions provided by the two actors in various service types, this study suggests that it is important to delineate value creation further into the suggested three types in the continuum.

The current study specifically examined one form of value creation, value self-creation, in one service context, health care management, specifically a health prevention self-service.

The current study demonstrates that there are differences between the way value is self-created and co-created in health care, most notably through the provision of different inputs that lead to value, and in the way it is experienced by consumers. This provides further evidence to the notion that value is contextually-bounded and subjectively experienced (Vargo and Lusch, 2008) and demonstrates the importance of examining contextual differences.

7.4. Managerial contributions and implications

The findings provide important implications for health service managers. In particular, service managers of cancer screening services should acknowledge that the various cancer screening types are somewhat reflective of the different service types conceptualised in this study. Of the three cancer screening services that comprise the national population screening programmes in Australia, cervical screening services reflect those that are delivered and where provider contributions are more likely to be high and consumer contributions are more likely to be lower, breast screening services reflect those that are co-created and where reasonably comparable levels of contributions from both providers and consumers are likely

to be required, and bowel screening services reflect those that are self-service and where provider contributions are more likely to be lower and consumer contributions are more likely to be high. As evidenced by the findings of the current study, the different consumer contributions in a self-service (bowel screening) have different impacts on the value that is created compared to a service that is co-created (breastscreening) (see Zainuddin et al., 2013). Therefore, health service managers in different cancer screening units should take care to emphasise and facilitate different consumer contributions, depending on the cancer screening type. Furthermore, the study findings suggest to health service managers that the influence of value on important organisational outcomes can also differ depending on the cancer screening type.

In self-services, managers must devise strategies to facilitate consumer compliance and their understanding of their role in the consumption experience, which leads to an increase in consumer participation. This can be achieved through activities such as client education, or devising resources required by consumers in self-services, such as screening kits that are easy to use, or producing instructional materials that are easy to understand and follow.

7.5. Limitations and suggestions for future research

The current study investigates only prevention self-services and not other service types (i.e. services that are co-created, or delivered). The current study examined value self-creation in bowel screening, adding to the existing research that exists on value co-creation in health services that are co-created, i.e. breastcreening (see Zainuddin et al., 2013). Useful observations on value self-creation can now be drawn from this study and comparisons can be made with value co-creation. However, a gap remains in understanding value delivery in services that are delivered and future research should firstly explore this in order to provide a complete understanding of value creation in the proposed continuum. For example, future

research could investigate cervical screening, which is also a cancer screening type, but that is delivered as cervical screening patients are the most passive in their contributions, while the provider is the most active, compared to the other two identified service types.

Secondly, given that a variety of technologically driven and non-technologically driven self-services exist, and that this study only focussed on a non-technologically driven self-service, future research could examine value creation in technologically driven self-services. For example in smoking cessation, smokers might have traditionally relied on interfacing with quit counsellors as part of their overall strategy to quit smoking, but health apps like “My QuitBuddy” (Quitnow, 2015) have removed the need for this interpersonal interaction.

Thirdly, given the prominence of the role that consumers play in consumption processes, future research could investigate the consumer contributions further and examine if these resources have an effect on consumer readiness. For example, consumer expectations of their own cognitive, behavioural, and affective contributions may have an effect on their readiness to engage in a service and can function as antecedents to readiness. This may be particularly relevant to different service user segments such as non-users, as readiness may be a more influential construct on behaviour uptake (Meuter et al., 2005) than on continuation.

Finally, future research could also investigate activities in the provider sphere that do not overlap with the consumer sphere. These activities are more likely to occur in the pre-consumption and post-consumption stages of the consumption experience (Russell-Bennett et al., 2009), but are still important as they facilitate the activities that occur in the consumption stage, whether this may include both the consumer and the provider, or just the consumer as in the case of self-services. Much of the existing research in marketing on the contributions provided by the organisation have focussed on those that occur during direct exchanges with consumers, i.e. at the consumption stage (e.g. Dagger et al., 2007; Zainuddin et al., 2013).

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