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**Enhancing University Brand Image and Reputation  
through Customer Value Co-Creation Behaviour**

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## **Abstract**

This study examines the causality between university website, customer value co-creation behaviour, university brand image and reputation. Drawing upon a sample of 285 students from a London-based university and using partial least squares structural equation modelling, the findings argue that a university website is critical to generate students' co-creation behaviour. The research findings confirm the positive impact from website features on customer participation behaviour and customer citizenship behaviour; however, website applications and features have different impacts on the dimensions of customer value co-creation behaviour, i.e. customer participation and citizenship behaviour. This study asserts the pivotal role of students' value co-creation behaviour in creating and sustaining university brand image and reputation. This research is particularly useful for higher education (HE) institutions, by investigating and investing in their website design they can enhance students' co-creation behaviour in the context of the increasingly competitive UK HE market. Based upon the findings, this paper offers managerial implementations for decision-makers, brand managers, graphic and web designers who wish to understand the relationship between a website and its outcomes, especially relating to corporate image and reputation.

**Key words:** website; customer value co-creation behaviour; university brand image; university reputation; PLS-SEM

# **Enhancing University Brand Image and Reputation through Customer Value Co-Creation Behaviour**

## **Introduction**

Research on customer value co-creation behaviour has recently been one of the top research priorities in marketing and education areas (Marketing science institution, 2016). By encouraging customers' value co-creation behaviour, organisations may experience increased market coverage, revenues, profitability, and even innovativeness (Prahalad and Ramaswamy, 2004; Fuller et al., 2011) and usually gain cost and saving benefits in terms of efficiency and effectiveness (Grisseemann and Stokurger-Sauer, 2012).

In the higher education (hereafter HE) sector, universities are competing to recruit more students, particularly due to marketization and globalization (Yu et al., 2016). In order to offer a unique and memorable student experience, universities have been trying to encourage customer/student participation in creating and delivering their university experiences (Fagerstrøm and Ghinea, 2013). In the service-dominant marketing literature, the interaction between the organisation and the customer is considered to generate and add extra values to the service quality, which is much better than the one-way delivery of the service (Smith et al., 2014). Involving customers (i.e. students) in the creation of university education helps to tailor the educational service to students' needs and wants; hence, students' co-creation behaviour may play an important role in helping students experience their HE education in a unique and satisfactory way (Elsharnouby, 2015).

Before the internet became the major platform for people to get information, reading prospective student brochures, travelling to the HE institution and attending education exhibitions were the main means for students, particularly international students, to learn about UK universities. This has changed significantly in the last decade with the development

of technology (Fagerstrøm and Ghinea, 2013). The internet has significantly changed the way that domestic and international students obtain their knowledge, information and experience about HE nowadays (Simoes and Soares, 2010). New technologies, including all sorts of websites, social network media, and review websites have transformed the recruitment and brand communication method (Chung et al., 2015; Barnes et al., 2015).

With the absence of human interaction, prospective students can face a technologically complex and time-consuming decision process, when they are researching and comparing university options. Existing universities' students pass on the information to their community members by sharing their experiences in online social networks or review sections. Their value co-creation behaviour may contribute greatly to themselves, the university and other students (Oh et al., 2015; Osei-Frimpong et al., 2016). The existing and prospective students' value co-creation behaviour hence consequently influences community members' potential behaviours (Plewa et al., 2015).

A university's website is the front gate for students and other stakeholders. It can not only provide website visitors with the information that they seek, but also may create an enjoyable and interactive experience for the users, which leads to a satisfactory internet experience and positive perception towards the university (Barnes and Vidgen, 2014). A well-designed university website may present the university's brand image, reputation and culture, which may become a very powerful marketing tool to attract, interact with and retain the web visitors (Melewar et al., 2017). However, the way that the website can help to engage and interact with customers so as to encourage their value co-creation behaviour has not attracted enough research attention (Cherif and Miled, 2013; Gronroos, 2011). Regardless of its importance, information on how a university's website plays a role in customer (i.e. student) value co-creation behaviour and university performance is scant (Chathoth et al., 2016).

Hence, there is a call to investigate the effects of university website on university's success through students' value co-creation behaviour (Hoyer et al., 2010).

Therefore, this research contributes to the existing literature theoretically and empirically by: 1) arguing the critical role of students' value co-creation behaviour in contributing to a university's image and reputation; 2) demonstrating the significant role that a university website plays in engaging students' value co-creation behaviour; 3) highlighting the importance of identifying different types of customer value co-creation behaviour (i.e. participation behaviour and citizenship behaviour); 4) providing advice to universities in terms of designing website applications and features. The findings from this study have implications for the university policy makers, chief information officers, IT directors, as well as brand and marketing directors, to consider the process of co-creation as part of their brand building and image enhancing strategy.

### **Theoretical Background and Hypotheses Development**

Existing studies in marketing and management have recognised the important role that customers play in the service and product creation process (Frow et al., 2015; Hoyer et al., 2010; Kohler et al., 2011; Ranjan and Read, 2016; Skålén et al., 2015). Customer value co-creation behaviour literature has argued that customers are not only the receivers of marketing information, they can also respond to the information as value creators (Yi and Gong, 2013).

Yi and Gong's (2013) research identifies two types of customer value co-creation behaviour: customer participation behaviour and customer citizenship behaviour. Customer participation behaviour refers to customers' in-role behaviour, which refers to customers' co-creation of products or services together with the company. Customer citizenship behaviour refers to customers' extra-role behaviour in terms of making extra efforts to interact with the

organisation and contribute to the organisation's performance (Yi and Gong, 2013). Customer co-creation behaviour requires customers to input their labour, time, and psychological effort in supporting the organisation in terms of production and service creation or delivery (Grisseemann and Stokburger-Sauer, 2012).

Customer co-creation behaviour can also refer to their interactive behaviour online via the website, which has an important communication function (Kim and Stoel, 2004; Li, 2017), leading to further navigation, decision-making, sharing or repurchase (Tarafdar and Zhang, 2008). A corporate website can be a primary vehicle for customers to get their impression of corporate brand image (Van den Bosch et al., 2006). The website can also become a platform for customers' interaction with the organisation and participation in product innovation or service improvement (Kabadayi and Gupta, 2011). Alavi et al. (2012) claim that an information system has a great impact on customers' value co-creation behaviour and thus changes the company-customer relationship. Firms may enjoy increased market acceptance, reduced market risk and allow consumers to achieve financial, social, technological, and psychological benefits via their value co-creation behaviour through their involvement (Hoyer et al., 2010).

Existing literature has investigated customers' co-creation behaviour in tourism and service industries (e.g. Chathoth et al., 2016). For example, Grisseemann and Stokburger-Sauer (2012) conducted their research in the tourism industry and argue the important role of a company's support in customers' co-creation behaviour, which hence leads to improved firm performance in terms of customer satisfaction, loyalty and expenditures. With the continuous and significant increase in international student numbers, to attract, recruit, and retain students can be a highly complex multidimensional task for UK HE institutions (Zlatkin-Troitschanskaia et al., 2015). Competition from both domestic and international

markets drives the UK HE institutions to invest in their brand image and reputation (Adcroft et al., 2010).

Therefore, we propose that a well-designed university website (i.e. website features and applications) can have a strong impact on university brand image and reputation mediated by students' value co-creation behaviour. The more students engage with the university, the better the university's brand image and reputation (Hafeez and Aburawi, 2013; Kabadayi and Gupta, 2011). Figure 1 illustrates the research framework.

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INSERT FIGURE 1 ABOUT HERE  
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### **Websites and students' value co-creation behaviour**

A website is an essential tool for organisational communication and interactions between firms and their customers, stakeholders and media (Ramaswamy and Gouillart, 2010; Vallaster and Von Wallpach, 2013). With the advancement in technology, a university website becomes a dynamic marketing tool to attract and engage students' involvement. University websites are used to present their brand identity and image, to signal uniqueness and to create external impressions (Abdullah et al., 2013; Bravo et al., 2012). Website users gain trust in the business in the first few seconds via their website impression (Robins and Holmes, 2008; Lowry et al., 2014; Wang et al., 2013). This is particularly true for students who are not familiar with the universities; they get information and impressions about their potential HE providers by visiting their websites (Wilkins and Huisman, 2015).

According to Yi and Gong (2013), customers can act as value co-creators by interacting during a service encounter by outlining their likes, dislikes, preferences and expectations. A



pleasant and entertaining web environment tends to attract more consumers to engage (De Nisco and Napolitano, 2006). Existing literature indicates some interest in seeking to understand the co-creation process through web-based interactions (Hafeez and Alghatas, 2007). Particularly, online social platforms such as Facebook and Twitter provide a collaborative environment enabling students to acquire and share knowledge (Kanuka and Anderson, 2007). A university website can be the starting point for students to interact and co-create value for the university via other associated social media (Ind et al., 2013); hence, we argue that by successfully encouraging customer/student value co-creation behaviour via website usage (i.e. website application and website features), the universities can enjoy a better brand image and reputation.

#### Website Features

A website is an organisation's virtual storefront and provides the general audience with information about the organisation and its products/services (Foroudi et al., 2017). A good website promotes a positive corporate and product/brand image (Argyriou et al., 2006). A university website is an essential communication function (Kim and Stoel, 2004); it can include website features and applications. A university website features include availability, usability and customisation. A good website design provides website users with easy navigation, enjoyment and effective search for information about services or products (Bilgihan and Bujisic, 2015).

Website availability is referred to as the correct technical functioning of a site (Alwi and Ismail, 2013). University websites are used by a diverse population including existing and prospective students, academic and administrative staff, parents, people from the community, industries, and government administration, etc; hence, the website needs to be designed in an easily accessible format (Klein et al., 2003).

Usability can be explained as whether the website is easy to access and user-friendly, which includes physical presence, utilitarian facets, effective information search, problem solving and so on (Flavian et al., 2006; Bilgihan and Bujisic, 2015). Whether the website is visually appealing and fun, or whether it incorporates the effective use of multimedia should be considered to judge the website usability (Lin et al., 2013).

Customisation is highlighted in several studies of website construction (Raman et al., 2008; Tarafdar and Zhang, 2008). Customisation is the ability of a company to personalise services and products, and the transactional environment for customers (Srinivasan et al., 2002). Successful website customisation should be able to increase customers' chances to find things that they are looking for and it helps generate positive appealing perceptions about the organisation, the products or services among customers so as to shorten customers' decision-making process and enhance purchase/repurchase probabilities. This leads to the following hypotheses:

H1a: University website features have a direct positive *impact on students' participation co-creation behaviour*.

H1b: University website features have a direct positive *impact on students' citizenship co-creation behaviour*.

## Website Applications

A unique corporate/brand website design is an important tool to gain competitive advantage via improved mutual communication, customer relationship and satisfaction. Website design can also be helpful in enabling innovation and strengthening corporate identities (Bravo et al., 2013; Foroudi et al., 2016; Mahmoud and Hafeez, 2013). Website applications include navigation design, information design and security. Successful website applications can deliver what is expected by customers and generate trust among customers (Kuo and Chen,

2011). Website applications aim to create a secure, comfortable and convenient web environment for web browsers (Shankar et al., 2003). A satisfactory online experience will lead to more customer engagement with the website based on the prior experience (Yoon, 2002).

Navigation design refers to the navigation scheme that aids access to different parts of a website (Gefen et al., 2000). Navigation design includes the layout (e.g. hyperlinks and tabs) and the ways in which these elements are arranged (Tarafdar and Zhang, 2008). Good navigation design can provide easy access for website users to the information that they are looking for.

Information design involves providing correct information about services or products to customers via a website (Cyr, 2008). Information design is considered as an essential step to satisfaction in terms of providing website users detailed, correct and comprehensive information, while bringing them pleasure, fun and amusement via web interaction (Bilgihan and Bujisic, 2015).

Website security is a vital website application element as it is regarded as the biggest concern for customers, particularly relating to money transactions (Angelakopoulos and Mihiotis, 2011). Belanger et al. (2002) found that consumers were more concerned with security of the website rather than any statements of privacy. Therefore, we hypothesise:

H2a: University website applications have a *direct positive impact on students'* participation behaviour.

H2b: University website applications *have a direct positive impact on students'* citizenship behaviour.

## **Customer value co-creation behaviour and university brand image**

Value co-creation can be defined as a joint innovation of distinctive value and/or experiences through the participation of customers and other stakeholders (Hatch and Schultz, 2010; Ind and Coates, 2013; Payne et al., 2009; Thatcher et al., 2016). It requires continuous interactions between a firm and its consumers, where both parties combine and integrate (to some degree) resources to help move the business forward and to establish their reputation in the market (Lebeau and Bennion, 2014). Consumers' participation in value creation can also influence other stakeholder perceptions of the company (Ind and Coates, 2013).

Brand image represents the beliefs, associations, attitudes and impressions held by customers. University brand image can be the immediate mental picture that an individual has about the university (Foroudi et al., 2014). By engaging in continuous interactive activities, students interact and collaborate with the university and thus enhance the university's brand image (Hatch and Schultz, 2010). Students' value co-creation behaviour via a university website with solicited and unsolicited information can contribute to the university's performance and help it improve its services in the long-term. Students' participation in value co-creation demonstrates their brand commitment and belonging to the university community (Howell et al., 2017). An innovative and well-organised website encourages website users' involvement in brand building and brand image development (Black and Veloutsou, 2016; Flores and Vasquez-Parraga, 2015). Hence, we propose:

*H3: Students' participation behaviour has a direct positive influence on university image.*

*H4: Students' citizenship behaviour has a direct positive influence on university image.*

## **University image and university reputation**

The aim of the university management and marketing staff is to create and develop a positive university brand image and reputation among students and other stakeholders. It takes time

for a corporate to build its reputation via appropriate management (Foroudi et al., 2014, 2016). An enduring brand image ensures a favourable reputation and develops positive attitudes in customers toward an organisation. Wilkins and Huisman (2015, pp.1256-1257) argue “as universities have become more exposed to competitive market forces, marketing has become more important in contributing to the creation of favourable institutional images that will help attract students, staff and resources”. Based on these arguments, we propose that once students have a positive university brand image, a university’s reputation will be maintained or improved (Walsh et al., 2009). Therefore, the hypothesis is that:

H5: The better the university brand image, the better the university reputation.

## **Methods**

### **Data collection**

The UK HE institutions have been popular among international students for their reputation of high quality (Foroudi et al., 2016). The UK HE sector has changed policies in the last five years, signalling the government’s intention to support the entry of new providers and at the same time to promote the HE sector more forcefully to attract international students (Bolsmann and Miller, 2008; Thatcher et al., 2016). Data were collected from a London-based UK university. The reason to choose this university is because this middle-ranked university has enjoyed a significant growth over the last decade, particularly in the number of international students.

A pilot study was conducted among 55 PhD researchers and postgraduate students to test the validity, suitability and freedom from error of the measurement items. At this stage, exploratory factor analyses (EFA) were tested to identify any patterns in the data (Foroudi et al., 2016). After the pilot study, a research assistant was employed to hand out survey questionnaires on campus at the university for two weeks. 339 questionnaires were returned

and 285 were usable, which represents a response rate of 84%. Of the usable responses, 54% were from women. 51.6% of the respondents were between the ages of 20 and 29, and 50.7% were postgraduate or above (Table 1).

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### **Measures**

The measures of the survey were obtained from previous research. We use Yi and Gong's (2013) multidimensional concept (information seeking, information sharing, responsible behaviour, personal interaction, feedback, advocacy, tolerance, and helping) to measure students' value co-creation behaviour. They categorised these eight variables under two constructs. They conducted a formative measurement model to construct customers' value co-creation behaviour by these two dimensions, which are customer participation behaviour and customer citizenship behaviour. In this research we evaluate separately the relationships of these two dimensions with other latent variables.

The measurement items for university website application (i.e. navigation, information, security) and university website features (i.e. usability, customisation, and availability) were taken from previous studies (see Table 2 for details) and modified during the pilot study. In addition, university brand image and reputation were obtained from existing scales (Foroudi et al., 2014). The items employed in this study are shown in Table 2. All items were measured using a seven-point Likert scale (1=strongly disagree, 7=strongly agree).

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### **Analysis and model testing**

We apply partial least squares structural equation modelling (PLS-SEM) to test the research model using SmartPLS 3.2. PLS-SEM can be especially useful when there is a complex model with many variables and indicators (Hair et al., 2014). Considering the number of constructs in this research model, together with the sample size, we believe PLS-SEM is a better alternative for this research (Hair et al., 2011). The analysis involves separate assessments of the measurement model and structural model.

### **Measurement model**

We use the measurement model to assess the reliability and validity of the construct measures. The research measurement items were subjected to a series of factor and reliability analyses as an initial examination of their performance within the entire sample. SmartPLS is used to examine the reliability and validity of the construct measures. Internal consistency reliability is measured by both Cronbach's  $\alpha$  and composite reliability. All the items have an  $\alpha$  and CR above 0.80, which regarded as satisfactory (Nunally and Bernstein, 1994). Convergent validity (AVE) and discriminant validity are checked for each construct (see Table 2). All the AVEs for constructs are above 0.50 representing that on average, the construct explains more than half of the variance of its indicators (Field, 2013). All the indicators' outer loadings on a construct are higher than its cross loadings, suggesting that discriminant validity is achieved (Chin, 1998).

We also run four higher-order reflective models testing second-order structures (Ringle et al., 2012). For example, the website feature is composed of three first-order latent variables (i.e. availability, usability and customisation). The website application is measured by navigation design, information design and security as first-order variables. The customer

value co-creation behaviour is measured separately using two second-order constructs, a) customer participation behaviour including four first-order dimensions (i.e. information seeking, information sharing, responsible behaviour and personal interaction); and b) customer citizenship behaviour composed of feedback, advocacy, helping and tolerance as first-order variables. Following the repeated indicators approach to estimate higher-order constructs with PLS (Ringle et al., 2012), the loadings of the first order latent variables on the second-order factor exceed 0.70, indicating that all loadings are significant, providing evidence of reliable measures (see Table 3).

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Table 4 shows that the square root of the AVE exceeds the inter-correlations of the construct with the other constructs in the models, which indicates there are no discriminant validity issues. Thus, we proceed with the structural model evaluation using four higher-order constructs to test the hypotheses.

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### **Structural model assessment**

After confirming the construct measures, we assess the structural model results. First, the collinearity among the constructs is examined before conducting the path coefficient estimation. We examine each set of predictors in the structural model for collinearity and each predictor has a Variance inflation factors (VIF) value lower than 5. Following this initial step, we then assess the significance of path coefficients to investigate the hypothesised



relationships proposed by the conceptual framework. The significance of all the path coefficients is tested by using 5,000 bootstrapping to produce t-statistics (see Table 5).

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INSERT TABLE 5 ABOUT HERE  
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The statistics show that H1a, the impact of website feature on customer participation behaviour ( $\beta=0.25$ ,  $p<0.001$ ) and H1b, the impact of website feature on customer citizenship behaviour ( $\beta=0.36$ ,  $p<0.001$ ), are supported. H2a is also supported ( $\beta=0.21$ ,  $p<0.01$ ) and it shows a positive impact of website application on customer participation behaviour; however, H2b is not supported ( $\beta=0.10$ ,  $p>0.01$ ), which indicates that the website application does not influence customer's citizenship behaviour. H3 and H4 are both supported with  $\beta=0.37$ ,  $p<0.001$  and  $\beta=0.23$ ,  $p<0.01$  respectively, which demonstrate significant impact of both customer participation behaviour and citizenship behaviour on university image. H5 is supported ( $\beta=0.54$ ,  $p<0.001$ ) showing the strong impact of university image on reputation.

Finally, the structural model was evaluated by  $R^2$  values of the endogenous variables in the path model. The  $R^2$  values in this model show some degree of effect, with both website features and applications explain over 18% of the variances of customer participation and citizenship behaviour. Customer participation and citizenship behaviour explains 31% of university image and university image explains 30% of university reputation, indicating a moderating degree of effect. In addition to testing the magnitude of the  $R^2$  values for its predictive accuracy, we also applied Stone-Geisser's  $Q^2$  value by using the blindfolding procedure for an omission distance  $D=7$  (Chin, 1998). The model is believed to have predictive relevance when a value of  $Q^2$  is greater than 0 (Hair et al., 2014). For this structural

model, all the endogenous variables have  $Q^2$  greater than 0, which hence provides support for the model's predictive relevance (see Table 6).

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INSERT TABLE 6 ABOUT HERE  
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### **Discussions and implications**

Theoretically, this research contributes to the existing knowledge by providing an integrated and conceptualised multidimensionality of website feature, application and customer value co-creation behaviour in the context of a higher education institution in the UK. While existing literature has not yet inspected the critical role of website in terms of its features and applications in influencing customer's value co-creation behaviour, this study investigates how university websites can lead to students' participation and citizenship behaviour so as to create values for university brand image development and reputation enhancement.

The findings show that the more favourably the website is perceived by students, the more they tend to engage in the value co-creation process. This study particularly highlights the importance of website features (i.e. availability, usability and customisation) in helping students interact with the university and also providing them with opportunities to perform a participative role for the university (Beldad et al., 2010; Flanagin et al., 2014). Although website application (security, information and navigation design) shows a significant impact on students' participation behaviour, it fails to demonstrate any impact on their citizenship behaviour. This may be because the content of website application is not motivational factor for students to use a website. This might also be due to the role of students in the HE institutions. Their main purpose is to pursue university education and they have to devote most of their time to completing the degree within the time scope. Thus, students are not

expected to carry out extra roles. Unlike commercial websites, university websites are usually information centred with a clearer functional division. There is also less concern about the security of payment procedures (Srinivasan et al., 2002).

Consistent with prior studies (Chun, 2005; Helm, 2007), we confirm that when students find the university website can provide them with sufficient, clear information, sense of security, easy navigation to get around on the website for solving their problems, they are more likely to conduct value co-creation behaviour, i.e. participation and citizenship behaviour. Students' value co-creation behaviour further leads to obvious benefits for the university, such as better university image and reputation (Hatch and Schultz, 2010; Yngfalk, 2013). The university may gain sustainable competitive advantage when it continuously makes efforts to improve its brand image and reputation (Lomer et al., 2006).

For managerial implications, we first argue the important role that the university website can play in encouraging customers' value co-creation behaviour. Even though organisational management staff nowadays pay attention to their website design, the website features (i.e. availability, usability and customisation) should be their priority to tackle issues (Casaló et al., 2008). A well-designed and unique university website should allow easy and quick access, be comfortable to use and navigate, and at the same time, offer website users an interesting, pleasant and satisfactory using experience (Bilgihan and Bujisic, 2015). Providing a good-looking website solely will not generate customers' citizenship behaviour. As the purpose of students browsing the university website is seeking for information and their expectation of these characteristics of website is almost a must, this means branding/marketing managers need to find alternative ways to get customers actively engaged. The website designer and promoter may also need to consider how to increase the interactions between their customers and the corporate in the co-creation processes (Pinho et al., 2014). Interactive educational games, events with reward, or mobile apps can be considered.

Second, the managers need to encourage students' value co-creation behaviour in both participation and citizenship behaviour (Yi and Gong, 2013). We believe it is necessary to encourage students' participation behaviour before they can engage with citizenship behaviour. Students should be encouraged or rewarded when they are actively sharing information with others, or carrying out responsible behaviour as this university's students, generating positive and pleasant university culture, and participating in universities activities and events for a better social interaction among existing students, staff and other stakeholders.

Based on the research findings, the website may not demonstrate the same level of impact on customers' different types of behaviour. The website shows stronger impact on customers' participation behaviour rather than citizenship behaviour (Tarafdar and Zhang, 2008). For the university brand image and reputation, both types of value co-creation behaviour are important. We suggest universities should try to create a supportive communication environment with appropriate communication channels, sufficient information and platform to share information (Vega-Vazquez et al., 2013). When students actively participate in the value creation process, they are more likely to obtain a positive attitude toward the university, be more satisfied with their HE education experience and more committed to the university brand. By fostering students' value co-creation behaviour in their HE experiences, universities are able to establish their reputation and obtain consistent competitive advantages in the market.

Furthermore, we suggest HE institution marketing and IT managers use and operate their website wisely to engage better with the customers (Jones, 2005). The institution's website is the key to communicate the institution's beliefs, ideas, feelings and impressions to all stakeholders. University websites are considered as the best platform to transmit the institution services to potential international students (Foroudi et al., 2016). Apart from convincing students to obtain a positive perception about the institution (Wilkins and

Huisman, 2015), institutions should also carefully manage their brand image and reputations among all other stakeholders, mainly those who have a direct influence on students - parents or friends for instance. For example, the contact staff in the universities may influence students' willingness to participate in the service directly (Vega-Vazquez et al., 2013).

The findings from this study urge university policy makers, IT directors and marketing directors to consider the particularly important role of corporate website to contribute to customers' value co-creation behaviour, which leads to a better university image and reputation in the HE market. One of the ways to measure university brand image and reputation can be captured in the university ranking system. Climbing up in the ranking system can help the university to attract high-quality students and academicians globally (Olcay and Bulu, 2017). Therefore, investing in students' university experience and encouraging their interaction with the university can not only increase the students' satisfaction in one of the ranking indexes, but also save the university's marketing expense and effort as students are the best marketing ambassadors.

### **Conclusions and future research directions**

This study attempted to examine the important role that the corporate website plays on generating customer value co-creation behaviour, which leads to corporate brand image and reputation. Having collected data from a London-based university, we examined the framework by conducting quantitative research. First, the research tested four higher-order constructs to check their validities, representing the relevant variables in the conceptual framework. We particularly do not force the two dimensions of customer value co-creation behaviour into one, but we examine them separately to investigate the effectiveness of proposed antecedents. Second, the research findings confirm the positive effects of website feature on customer participation behaviour and customer citizenship behaviour; however,

although website application has a positive influential role on customer participation behaviour, it does not show its impact on customer citizenship behaviour. Third, the research ensures the pivotal role of customer value co-creation behaviour (i.e. participation and citizenship behaviour) to enhance university brand image and reputation.

Customer's value co-creation behaviour is becoming continuously important for universities to build successful brand image and reputation. A well-designed website can be one of the main elements leading to students' participation and citizenship behaviour. Based upon the research findings, this paper offers managerial contributions for decision-makers, brand managers, graphic and web designers, who wish to understand the relationship between website and its composite dimensions, i.e. website application (navigation design, information design and security) and website feature (usability, customisation and availability). Although website application is not a motivational factor driving students' citizenship behaviour, it is still very important to make sure website application is particularly well presented. Contrary to extant branding research, the emphasis of this research is not on branding resulting from one-way managerial efforts to build up an intended image or reputation (Keller, 2003), but on the active roles that customers can play in co-creating image and reputation for corporate's sustainability and competitiveness (Gupta et al., 2016; Hatch and Schultz, 2010).

The limitations of this study also throw light for future research in the area. The samples collected from a single HE institution in the UK face generalisation issues, which need to be more widely spread for the future research; hence, future studies could replicate this study in other contexts or countries in order to test the outcome generalisability. Second, in the university scenario, many other antecedents, such as marketing activities, brand visual image design, can be included apart from the website to encourage customer value co-creation behaviour (Foroudi et al., 2014). With the increasing globalisation in the HE sector, similar

research can include the influence of culture on stakeholders' value co-creation behaviour as well. Finally, taking only students' self-reporting opinions to check the whole conceptual framework may increase the risk of unreliability of the study. For example, university ranking can be used as a measure of university reputation rather than subjective measures. Thus, future research may also consider including other stakeholders' opinions, such as employees, alumni, parents, members from different communities, governing bodies, or industries.

## References:

- Abdullah, Z., Nordin, S.M. and Aziz, Y.A. (2013). Building a unique online corporate identity, *Marketing Intelligence and Planning*, 31(5), 451-471.
- Adcroft, A., Teckman, J. and Willis, J. (2010). Is higher education in the UK becoming more competitive? *International Journal of Public Sector Management*, 23(6), 578-588.
- Alavi, S., Ahuja, V. and Medury, Y. (2012). Metcalfe's law and operational, analytical and collaborative CRM-using online business communities for co-creation, *Journal of Targeting, Measurement and Analysis for Marketing*, 20(1), 35-45.
- Alwi, S. (2009). Online corporate brand images and consumer loyalty, *International Journal of Business and Society*, 10(2), 1-19.
- Alwi, S. and Ismail, S.A. (2013). A framework to attain brand promise in an online setting, *Marketing Intelligence and Planning*, 31(5), 557-578.
- Angelakopoulos, G. and Mihiotis, A. (2011). E-banking: challenges and opportunities in the Greek banking sector, *Electronic Commerce Research*, 11(3), 297-319.
- Argyriou, E., Kitchen, P. J. and Melewar, T. C. (2006). The relationship between corporate websites and brand equity: A conceptual framework and research agenda, *International Journal of Market Research*, 48(5), 575-599.
- Barnes, S.J. and Vidgen, R.T. (2014). Technology socialness and Web site satisfaction, *Technological Forecasting and Social Change*, 89, 12-25.
- Barnes, S.J., Mattson, J. and Hartley, N. (2015). Assessing the value of real-life brands in Virtual worlds, *Technological Forecasting and Social exchange*, 92, 12-24.
- Belanger, F., Hiller, J. S. and Smith, W. J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes, *The Journal of Strategic Information Systems*, 11(3), 245-270.
- Beldad, A., De Jong, M. and Steehouder, M. (2010). How shall I trust the faceless and the intangible? A literature review on the antecedents of online trust, *Computers in Human Behavior*, 26(5), 857- 869
- Bilgihan, A. and Bujisic, M. (2015). The effect of website features in online relationship marketing: A case of online hotel booking, *Electronic Commerce Research and Applications*, 14(4): 222-232.
- Black, I. and Veloutsou, C. (2016). Working consumers: Co-creation of brand identity, consumer identity and brand community identity, *Journal of Business Research*, 70, 416-429.
- Bolsmann, C. and Miller, H. (2008). International student recruitment to universities in England: discourse, rationales and globalisation, *Globalisation, Societies and Education*, 6(1), 75-88.
- Bravo, R., DeChernatony, L. Matute, J. and Pina, J.M. (2013). Projecting banks' identities through corporate websites: A comparative analysis of Spain and the United Kingdom, *Journal of Brand Management*, 20(7), 533-557.
- Bravo, R., Matute, J. and Pina, J.M. (2012). Corporate social responsibility as a vehicle to reveal the corporate identity: a study focused on the websites of Spanish financial entities, *Journal of Business Ethics*, 107(2), 129-146.
- Casaló, L.V., Flavián, C. and Guinalú, M. (2008). Promoting consumer's participation in virtual brand communities: A new paradigm in branding strategy, *Journal of Marketing Communications*, 14(1), 19-36.
- Chathoth, P.K., Ungson, G.R, Harrington, R.J. and Chan, E.S.W. (2016). Co-creation and higher order customer engagement in hospitality and tourism services: A critical



- review, *International Journal of Contemporary Hospitality Management*, 28(2), 222-245.
- Cherif, H. and Miled, B. (2013). Are Brand Communities Influencing Brands through Co-creation? A Cross-National Example of the Brand AXE: In France and in Tunisia, *International Business Research*, 6(9) 14.
- Chin, W. (1998). The partial least squares approach to structural equation modelling. In: G. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-358). Mahwah,
- Chun, R. (2005). Corporate reputation: meaning and measurement, *International Journal of Management Reviews*, 7(2), 91-109.
- Chung, N., Lee, H., Lee, S. J. and Koo, C. (2015). The influence of tourism website on tourists' behavior to determine destination selection: A case study of creative economy in Korea, *Technological Forecasting and Social Change*, 96, 130-143.
- Cyr, D. (2008). Modeling web site design across cultures: relationships to trust, satisfaction and e-loyalty, *Journal of Management Information Systems*, 24(4), 47-72.
- DeNisco, A. and Napolitano, M.R. (2006). Entertainment orientation of Italian shopping centres: antecedents and performance, *Managing Service Quality*, 16(2), 145-166.
- Elsharnouby, T. H. (2015). Student co-creation behavior in higher education: the role of satisfaction with the university experience, *Journal of Marketing for Higher Education*, 25(2), 238-262.
- Fagerstrøm, A. and Ghinea, G (2013). Co-creation of value in higher education: using social network marketing in the recruitment of students, *Journal of Higher Education Policy and Management*, 35(1), 45-53,
- Field, A. (2013). *Discovering Statistics Using IBM SPSS statistics*. Sage: London.
- Flanagin, A.J., Metzger, M.J., Pure, R., Markov, A. and Hartsell, E. (2014). Mitigating risk in e-commerce transactions: perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention, *Electronic Commerce Research*, 14(1), 1-23.
- Flavian, C., Guinaliu, M. and Gurrea, R. (2006). The role played by perceived usability, satisfaction and consumer trust on website loyalty, *Information and Management*, 43(1), 1-14.
- Flores, J. and Vasquez-Parraga, A. Z. (2015). The impact of choice on co-produced customer value creation and satisfaction, *Journal of Consumer Marketing*, 32(1), 15-25.
- Foroudi, P., Dinnie, K., Kitchen, P.J., Melewar, T. C. and Foroudi, M.M. (2017). IMC antecedents and the consequences of planned brand identity in higher education, *European Journal of Marketing*, 51(3), 528-550.
- Foroudi, P., Jin, Z., Gupta, S., Melewar, T.C. and Foroudi, M.M. (2016). Influence of innovation capability and customer experience on reputation and loyalty, *Journal of Business Research*, 69(11), 4882-4889.
- Foroudi, P., Melewar, T. C. and Gupta, S. (2014). Linking corporate logo, corporate image, and reputation: An examination of consumer perceptions in the financial setting, *Journal of Business Research*, 67(11), 2269-2281.
- Frow, P., Nenonen, S., Payne, A. and Storbacka, K. (2015). Managing co-creation design: A strategic approach to innovation, *British Journal of Management*, 26(3), 463-483.
- Fuller, J., Hutter, K. and Faullant, R. (2011). Why co-creation experience matters? Creative experience and its impact on the quantity and quality of creative contributions, *R and D Management*, 41(3), 259-273.
- Gefen, D., Straub, D.W. and Boudreau, M.C. (2000). Structural equation modeling and regression: guidelines for research practice, *Communications of the Association for Information Systems*, 4(7), 2-77.

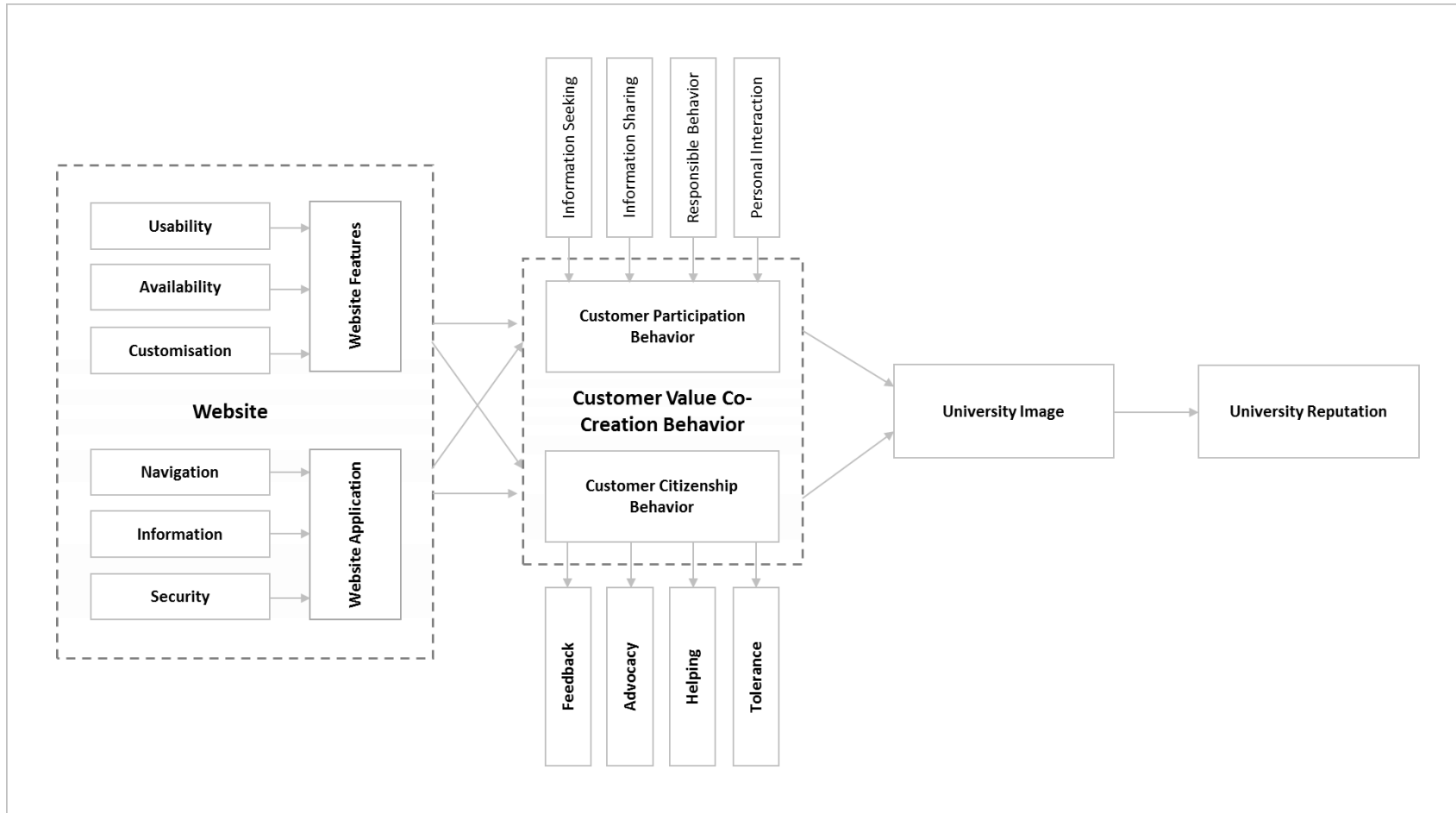
- Grisseemann, U. and Stokburger-Sauer, N.E. (2012). Customer co-creation of travel services: The role of company support and customer satisfaction with the co-creation performance, *Tourism Management*, 33(6), 1483-1492.
- Gronroos, C. (2011). Value co-creation in service logic: A critical analysis, *Marketing Theory*, 11(3), 279-301.
- Gupta, S., Malhotra, N.K., Czinkota, M. and Foroudi, P. (2016). Marketing innovation: A consequence of competitiveness, *Journal of Business Research*, 69(12), 5671-5681.
- Hafeez, K. and Aburawi I. (2013). Optimizing Human Resource Requirements to meet Target Customer Service Levels, *International Journal of Quality and Service Sciences*, 5(2), 230-252.
- Hafeez, K. and Alghatas, F. (2007). Knowledge management in a virtual community of practice using discourse analysis, *Electronic Journal of Knowledge Management*, 5(1), 29-42.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet, *Journal of Marketing Theory and Practice*, 19(2), 139-151.
- Hair, Jr. J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Sage: London.
- Halliburton, C. and Ziegfeld, A. (2009). How do major European companies communicate their corporate identity across countries? An empirical investigation of corporate internet communications, *Journal of Marketing Management*, 25(9/10), 909-925.
- Hatch, M.J. and Schultz, M. (2010). Toward a theory of brand co-creation with implications for brand governance, *Journal of Brand Management*, 17(8), 590-604.
- Helm, S. (2007). The Role of Corporate Reputation in Determining Investor Satisfaction and Loyalty, *Corporate Reputation Review*, 10(1), 22-37.
- Howell, R., van Beers, C. and Doorn, N. (2017). Value capture and value creation: The role of information technology in business models for frugal innovations in Africa, *Technological Forecasting and Social Change* (Just Published).
- Hoyer, W. D., Chandy, R., Dorotic, M., Krafft, M. and Singh, S. S. (2010). Consumer cocreation in new product development, *Journal of Service Research*, 13(3), 283-296.
- Ind, N., and Coates, N. (2013). The meanings of co-creation, *European Business Review*, 25(1), 86-95.
- Ind, N., Iglesias, O. and Schultz, M. (2013). Building brands together, *California Management Review*, 55(3), 5-26.
- Jones, R. (2005). Finding sources of brand value: Developing a stakeholder model of brand equity, *The Journal of Brand Management*, 13(1), 10-32.
- Kabadayi, S. and Gupta, R. (2011). Managing motives and design to influence web site revisits, *Journal of Research in Interactive Marketing*, 5(2/3), 153-169.
- Kanuka, H. and Anderson, T. (2007). Online social interchange, discord, and knowledge construction, *International Journal of E-Learning and Distance Education*, 13(1), 57-74.
- Keller, K.L. (2003). *Strategic Brand Management: Building, Measuring, and Managing Brand Equity*, Prentice, New Jersey.
- Kim, S. and Stoel, L. (2004). Apparel retailers: website quality, dimensions and satisfaction, *Journal of Retailing and Consumer Services*, 11(2), 109-117.
- Klein, D., Myhill, W., Hansen, L., Asby, G., Michaelson, S. and Blanck, P. (2003). *Electronic Doors to Education: Study of High School Website Accessibility in Iowa*. *Behavioral Sciences and the Law*, 21, 27-49.
- Kohler, T., Fuller, J., Matzler, K. and Stieger, D. (2011). Co-creation in virtual worlds: the design of the user experience, *MIS Quarterly*, 35(September), 773-788.

- Kuo, H.M. and Chen, C.W. (2011). Application of quality function deployment to improve the quality of internet shopping website interface design, *International Journal of Innovative Computing, Information and Control*, 7(1), 253-268.
- Lebeau, Y. and Bennion, A. (2014) Forms of embeddedness and discourses of engagement: a case study of universities in their local environment, *Studies in Higher Education*, 39(2), 278-293.
- Li, C.Y. (2017). How social commerce constructs influence customers' social shopping intention? An empirical study of a social commerce website, *Technological Forecasting and Social Change* (Just Published).
- Lin, Y.C., Yeh, C.H. and Wei, C.C. (2013). How will the use of graphics affect visual aesthetics? A user-centered approach for web page design, *International Journal of Human-Computer Studies*, 71(3), 217-227.
- Lomer, S., Papatsiba, V. and Naidoo, R. (2016). Constructing a national higher education brand for the UK: positional competition and promised capitals, *Studies in Higher Education*, (March), 1-20.
- Lowry, P.B., Wilson, D.W. and Haig, W.L. (2014). A picture is worth a thousand words: source credibility theory applied to logo and website design for heightened credibility and consumer trust, *International Journal of Human-Computer Interaction*, 30(1), 63-93.
- Mahmoud, T. and Hafeez, K. (2013). Performance Assessment of an e-Learning Software System for Sustainability, *International Journal of Quality and Service Sciences*, 5(2), 208-229.
- Marketing science institution (2016). <http://www.msi.org/articles/research-grants-target-cx-getting-marketing-right-in-real-time/> (Assessed by 21 September 2016)
- Melewar, T.C., Foroudi, P., Kitchen, P., Gupta, S. and Foroudi, M.M. (2017). Integrating Identity, Strategy and Communications for Trust, Loyalty and Commitment, *European Journal of Marketing*, 51(3) 572-604.
- Nielsen, J. (2000). *Designing for the Web*, Riders Publishing Thousand Oaks, CA, USA.
- Nunally, J.C. and Bernstein, I. (1994). SPSS and SAS procedures for estimating indirect effects in simple mediation models, *Behavior Research Method, Instruments, and Computers*, 36, 717-731.
- Oh, E. T., Chen, K. M., Wang, L. M. and Liu, R. J. (2015). Value creation in regional innovation systems: The case of Taiwan's machine tool enterprises, *Technological Forecasting and Social Change*, 100, 118-129.
- Olcay, G.A. and Bulu, M. (2017). Is measuring the knowledge creation of universities possible? A review of university rankings, *Technological Forecasting and Social Exchange*, 123, 153-160.
- Osei-Frimpong, K., Wilson, A. and Lemke, F. (2016). Patient co-creation activities in healthcare service delivery at the micro level: the influence of online access to healthcare information, *Technological Forecasting and Social Change*, 126(January), 14-27
- Payne, A.F., Storbacka K., Frow, P. and Knox, S. (2009). Co-creating brands: Diagnosing and designing the relationship experience, *Journal of Business Research*, 62(3), 379-389.
- Pinho, N., Beirao, G. and Patricio, L. (2014). Understanding value co-creation in complex services with many factors, *Journal of Service Management*, 25(4), 470-493.
- Plewa, C., Galán-Muros, V. and Davey, T. (2015). Engaging business in curriculum design and delivery: a higher education institution perspective, *Higher Education*, 70(1), 35-53.

- Prahalad, C. K., and Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation, *Journal of Interactive Marketing*, 18(3), 5-14.
- Raman, M., Stephenaus, R., Alam, N. and Kuppusamy, M. (2008). Information Technology in Malaysia: E-service quality and Uptake of Internet banking, *Journal of Internet Banking and Commerce*, 13(2), 1-18.
- Ramaswamy, V. and Gouillart, F. (2010). Building the co-creation enterprise, *Harvard Business Review*, 88(10), 100-109.
- Ranjan, K.R. and Read, S. (2016). Value co-creation: concept and measurement, *Journal of the Academy of Marketing Science*, 44(3), 290-315.
- Ringle, C. M., Sarstedt, M. and Straub, D. (2012). A Critical Look at the Use of PLS-SEM in *MIS Quarterly*, *MIS Quarterly*, 36(1), iii-xiv.
- Robins, D. and Holmes, J. (2008). Aesthetics and credibility in web site design, *Information Processing and Management*, 44(1), 386-399.
- Santosa, P. I., Wei, K. K. and Chan, H. C. (2005). User involvement and user satisfaction with information-seeking activity, *European Journal of Information Systems*, 14(4), 361-370.
- Sayar, C. and Wolfe, S. (2007). Internet banking market performance: Turkey versus the UK, *International Journal of Bank Market*, 25(3), 122-141.
- Shankar, V., Smith, A. K. and Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments, *International Journal of Research in Marketing*, 20(2), 153-175.
- Simoës, C. and Soares. A.M. (2010). Applying to higher education: Information sources and choice factors, *Studies in Higher Education*, 35(4) 371-89.
- Skålén, P., Pace, S. and Cova, B. (2015). Firm-brand community value co-creation as alignment of practices, *European Journal of Marketing*, 49(3/4), 596-620.
- Smith, L., Maull, R. and CL Ng, I. (2014). Servitization and operations management: a service dominant-logic approach, *International Journal of Operations and Production Management*, 34(2), 242-269.
- Srinivasan, S., Anderson, R. and Ponnayolu, K. (2002). Customer loyalty in e-commerce: an exploration of its antecedents and consequences, *Journal of Retailing*, 78(1), 41-50.
- Tarafdar, M. and Zhang, J. (2008). Determinants of reach and loyalty—A study of website performance and implications for website design, *Journal of Computer Information Systems*, 48(2), 16-24.
- Thatcher, J., Alao, H., Brown, C. J. and Choudhary, S. (2016). Enriching the values of micro and small business research projects: co-creation service provision as perceived by academic, business and student, *Studies in Higher Education*, 41(3), 560-581.
- Vallaster, C. and Von Wallpach, S. (2013). An online discursive inquiry into the social dynamics of multi-stakeholder brand meaning co-creation, *Journal of Business Research*, 66(9), 1505-1515.
- Van den Bosch, A.L.M., Elving, W.J.L. and De Jong, M.D.T. (2006). The impact of organizational characteristics on corporate visual identity, *European Journal of Marketing*, 40(7/8), 870-85.
- Vega-Vazquez, M., Revilla-Camacho M.Á. and Cossío-Silva, F.J. (2013). The value co-creation process as a determinant of customer satisfaction, *Management Decision*, 51 (10), 1945–1953
- Walsh, G., Mitchell, V.W., Jackson, P.R. and Beatty, S.E. (2009). Examining the Antecedents and Consequences of Corporate Reputation: A Customer Perspective, *British Journal of Management*, 20(2), 187-203.

- Wang, N., Shen, X. L. and Sun, Y. (2013). Transition of electronic word-of-mouth services from web to mobile context: A trust transfer perspective, *Decision Support Systems*, 54(3), 1394-1403.
- Wilkins, S. and Huisman, J. (2015). Factors affecting university image formation among prospective higher education students: the case of international branch campuses, *Studies in Higher Education*, 40(7), 1256-1272.
- Xie, Hi. (2000). Shifts of interactive intentions and information-strategies in interactive information retrieval, *Journal of the American Society for Information Science*, 51(9), 841-857.
- Yi, Y. and Gong, T. (2013). Customer value co-creation behavior: Scale development and validation, *Journal of Business Research*, 66(9), 1279-1284.
- Yngfalk F.A. (2013). It's not us, it's them! Rethinking value co-creation among multiple actors, *Journal of Marketing Management*, 29(9/10), 1163-1181.
- Yoon, S.J. (2002). The antecedents and consequences of trust in online-purchase decisions, *Journal of Interactive Marketing*, 16(2), 47-63.
- Yu, Q., Assad, Y., Yen, D.A. and Gupta, S. (2016). IMO and internal branding outcomes: an employee perspective in UK HE, *Studies in Higher Education*. DOI: 10.1080/03075079.2016.1152467.
- Zlatkin-Troitschanskaia, O., Shavelson, R. J. and Kuhn, C. (2015). The international state of research on measurement of competency in higher education, *Studies in Higher Education*, 40(3), 393-411.

Figure 1. Conceptual Framework – the word ‘behavious’ appears 3 times, with US spelling



**Table 1. Participant characteristics**

		<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>	Female	153	54.0
	Male	132	46.0
<b>Age</b>	19 years old or less	116	48.3
	20 to 29 years	147	51.6
	Over 30	22	0.1
<b>Degree</b>	Undergraduate	141	49.3
	Postgraduate and above	144	50.7

**Table 2. Measurement model evaluation for first-order constructs**

Construct and Items	Loadings	Mean	SD	$\alpha$	CR	AVE
<b>Value Co-creation Behaviour (Yi and Gong, 2013)</b>						
<b>Customer Participation Behaviour</b>						
Information seeking				.96	.97	.92
I have asked others for information on what the University service offers.	.92	5.5044	1.67716			
I have searched for information on where this service is located.	.97	5.5487	1.67292			
I have paid attention to how others behave to use this service well	.92	5.3333	1.70566			
Information sharing				.94	.96	.89
I clearly explained what I wanted the University's employee to do.	.90	5.7935	1.44274			
I gave the University's employee proper information.	.96	5.7080	1.53277			
I provided necessary information so that the University's employee could perform his or her duties.	.88	5.6342	1.44591			
Responsible behaviour				.96	.98	.93
I performed all the tasks that are required.	.97	5.6195	1.56507			
I adequately completed all the expected behaviours	.97	5.6018	1.58510			
I fulfilled responsibilities to the University.	.88	5.5634	1.59454			
Personal interaction				.95	.98	.90
I was friendly to the University's staff and other students.	.93	5.6372	1.53690			
I was polite to the University's staff and other students.	.94	5.7493	1.52851			
I did not act rudely to the University's staff and other students.	.94	5.7375	1.49717			
<b>Customer Citizenship Behaviour</b>						
Feedback				.95	.97	.92
If I have a useful idea on how to improve the University's service, I let the staff know.	.92	5.5929	1.57441			
When I receive good service from the University's staff, I comment about it.	.94	5.5870	1.50756			
When I experience a problem, I let the University's staff know about it.	.94	5.4808	1.50799			
Advocacy				.93	.95	.87
I said positive things about the University to others.	.85	5.6018	1.47888			
I recommended the University to others.	.94	5.7345	1.46972			
I encouraged friends and relatives to attend the University.	.91	5.6136	1.49791			
Helping				.94	.97	.89
I assist other students if they need my help.	.92	5.2330	1.54670			
I help other students if they seem to have problems.	.93	5.1593	1.59455			
I teach other students to use the service correctly.	.90	5.0885	1.57959			
Tolerance				.92	.95	.87
If the University's service is not delivered as expected, I would be willing to put up with it.	.86	5.4631	1.42078			
If the University's staff makes a mistake during service delivery, I would be willing to be patient.	.96	5.5103	1.44803			
If I have to wait longer than I normally expected to receive the service, I would be willing to adapt.	.86	5.4484	1.53639			



<b>University Website</b>						
<b>Website features</b> (Alwi, 2009; Argyriou et al., 2006; Halliburton and Ziegfeld, 2009)						
<b>Usability</b>				.97	.98	.94
When I navigate the University website, I feel that I am in control of what I can do.	.92	5.5841	1.64834			
The University website is exciting and interesting.	.99	5.4956	1.71725			
The University website is easy to use.	.95	5.5310	1.68392			
<b>Availability</b>				.99	.99	.98
The University website does not crash	.97	5.5752	1.75313			
Pages at this website do not freeze after I enter my order information	.99	5.5664	1.76861			
It is easy to read off the contents of the University website.	.99	5.5103	1.78647			
<b>Customisation</b>				.99	.99	.99
The University website makes me feel that I am a unique consumer	.98	5.4366	1.50481			
I believe that the University website is customized to my needs	.99	5.4602	1.51932			
The University website has personalization characteristics	.99	5.4395	1.52447			
<b>Website Application</b>						
<b>Navigation</b>				.98	.99	.95
I can easily navigate the University website	.98	5.5870	1.56154			
The University website provides directions for using the website	.94	5.5398	1.56346			
The links are consistent	.97	5.6047	1.56045			
<b>Information</b>				.99	.99	.97
University website provides me with high-quality information	.99	5.6165	1.66423			
The information is useful	.95	5.5841	1.68034			
The layout of the information is easy to understand	.99	5.7050	1.64668			
<b>Security</b>				.98	.99	.96
I feel safe in my transactions with the University website.	.93	5.4513	1.77919			
The University website has adequate security features.	.95	5.3717	1.82128			
The University to which the website belongs has a well-known brand	.95	5.3333	1.83436			
<b>University Brand Image</b> (Foroudi et al., 2014)				.98	.98	.92
I like the University	.88	5.6283	1.44440			
I like the University compared to other companies in the same sector	.97	5.8555	1.46145			
I think other students/employees like the University as well	.98	5.8555	1.46145			
The University's visual identity/design communicates information about the University to its customers	.97	5.8319	1.46095			
The University's visual identity/design enhances the University's image.	.93	5.7552	1.46223			
<b>University Brand Reputation</b> (Foroudi et al., 2014)				.96	.97	.90
I have a good feeling about the University.	.85	5.2419	1.49967			
I admire and respect the University.	.92	5.2360	1.58312			
The University offers products and services that are good value for money.	.97	5.1799	1.55189			
The University is well-managed	.98	5.1858	1.54546			

**Table 3. Hierarchical models for the second-order constructs**

Constructs	loadings	A	CR	AVE
Website features		.93	.94	.62
Availability	.72			
Customisation	.84			
Usability	.80			
Website applications		.92	.94	.59
Security	.78			
Information design	.73			
Navigation design	.83			
Customer participation behaviour		.94	.95	.57
Information seeking	.96			
Information sharing	.94			
Responsible behaviour	.96			
Personal interaction	.97			
Customer citizenship behaviour		.91	.93	.49
Feedback	.82			
Advocacy	.76			
Helping	.83			
Tolerance	.77			

**Table 4. Correlations between constructs**

	1	2	3	4	5	6
1. Website features	1.000					
2. Customer citizenship behaviour	0.355	1.000				
3. Website applications	0.701	0.433	1.000			
4. University image	0.501	0.484	0.546	1.000		
5. Customer participation behaviour	0.381	0.688	0.394	0.529	1.000	
6. University reputation	0.482	0.339	0.461	0.544	0.380	1.000

**Table 5. Path coefficients**

Paths	H	Expected sign	Path coeff.	SE	Absolute t-value	Supported
WF->CPB	H1a	+	0.25**	0.07	3.64	Yes
WF->CCB	H1b	+	0.36**	0.07	4.907	Yes
WA->CPB	H2a	+	0.21*	0.08	2.439	Yes
WA->CCB	H2b	+	0.10	0.09	1.157	No
CPB->UI	H3	+	0.37**	0.09	4.304	Yes
CCB->UI	H4	+	0.23*	0.08	2.74	Yes
UI->UR	H5	+	0.54**	0.06	9.407	Yes

\*\*p<0.001, \* p<0.01.

**Table 6. Results of R<sup>2</sup> and Q<sup>2</sup> values**

Endogenous latent variable	R <sup>2</sup> Value	Q <sup>2</sup> Value
Customer participation behaviour	0.18	0.17
Customer citizenship behaviour	0.19	0.17
University image	0.31	0.29
University reputation	0.30	0.29

## Appendix 1: Definitions and references for constructs:

Construct	Definition
<b>Value co-creation behaviour</b>	Customer value co-creation behaviour literature has argued that customers are not only the receivers of marketing information, they can also respond to the information as value creators. It can also refer to their interactive behaviour online via the website, leading to further navigation, sharing or repurchase (Tarafdar & Zhang, 2008)
<b>Customer Participation Behaviour</b>	Customer participation behaviour refers to customers' in-role behaviour so that they co-create the products or the service together with the company (Yi and Gong, 2013).
<b>Information seeking</b>	Information seeking is specifying queries by using terms to select documents from the database (Santosa et al., 2005; Xie, 2000).
<b>Information sharing</b>	Information sharing refers to exchanges of data and information between a sender and receiver within the database (Yi & Gong, 2013).
<b>Responsible behaviour</b>	Responsible behaviour occurs "when customers recognize their duties and responsibilities as employees" (Yi & Gong, 2013, p. 1820).
<b>Personal interaction</b>	Personal interaction refers to interpersonal relations between customers and employees, which are necessary for successful value co-creation (Yi & Gong, 2013, p. 1820).
<b>Customer Citizenship Behaviour</b>	Customer citizenship behaviour refers to customers' extra-role behaviour that leads to their extra effort to interact with the organisation to contribute to the organisation's performance (Yi & Gong, 2013).
<b>Feedback</b>	Feedback via higher education website includes solicited and unsolicited information that customers (students and stakeholders) provide, which may aid employees and students and the university to improve service in the long term (Yi & Gong, 2013).
<b>Advocacy</b>	Advocacy refers to "recommending the business - whether the firm or the employee - to others such as friends or family" (Yi and Gong, 2013, p. 1820)
<b>Helping</b>	Helping refers to "customer behaviour aimed at assisting other customers" (Yi & Gong, 2013, p.1820).
<b>Tolerance</b>	Tolerance refers to "customer willingness to be patient when the service delivery does not meet the customer's expectations of adequate service, as in the case of delays or equipment shortages" (Yi & Gong, 2013, p.1820).
<b>University website</b>	University website is an essential communication function and is considered to be an organisation's virtual storefront (Foroudi et al., 2017).
<b>Website features</b>	Website features are the tools, which provide correct information about services or products to customers to satisfy users (Cyr, 2008).
<b>Usability</b>	Usability can be defined as the ease with which the website can be accessed and used (Nielsen, 2000).
<b>Availability</b>	Availability is a key element and is seen as the correct technical functioning of a site (Alwi & Ismail, 2013).
<b>Customisation</b>	Customisation is the ability of a company to personalise services and products for customers (Srinivasan et al., 2002)
<b>Website application</b>	Website applications include navigation design, information design and security. Successful website applications can deliver what is expected by customers and generate trust among customers (Kuo & Chen, 2011).
<b>Navigation</b>	Navigation design is the navigation scheme that aids access to different parts of a website which influence customers (Gefen et al., 2000).
<b>Information</b>	Information design deals with website features that provide correct information about services or products to customers (Cyr, 2008).
<b>Security</b>	Security is the biggest single concern for customers when faced with the decision to use the internet which provides users with verifiable and safe transactions (Sayar & Wolfe, 2007)
<b>University brand image</b>	University brand image is the immediate mental picture held by an individual of the organisation (Foroudi et al., 2014).
<b>University brand reputation</b>	University brand reputation is endowed with a judgment and is the overall evaluation by consumers (Foroudi et al., 2014).