



Impact of Innovation on the Relationship between Customer Relationship Management and Brand Equity in the Medical Tourism of Jordan

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Abstract

This study intends to investigate the direct and indirect relationship between customer relationship management and overall brand equity through technical innovation and non-technical innovation in medical tourism in Jordan. Data were gathered through field study among 384 medical tourists who have been treated in the five private hospitals in Amman, and the data were assessed using SPSS and AMOS. The outcomes indicate that, customer relationship management directly affects technical innovation, non-technical innovation, and overall brand equity. In addition, the only innovation type that directly affects overall brand equity is technical innovation. Furthermore, technical innovation and non-technical innovation have a full mediating role between customer relationship management and overall brand equity. This empirical study throws more light into the indirect effect of customer relationship management on overall brand equity, especially the role of technical innovation and non-technical innovation. The results offer a good opportunity for decision makers to take certain actions for innovating and enhancing overall brand equity.

Keywords: Customer Relationship Management; Technical and Non-Technical Innovation; Brand Equity.

1. Introduction

Medical Tourism (MT) is currently one of the most rapidly growing global commercialization in the world. The flow of patients across borders to obtain medical treatment is always coined with MT (Smith, Chanda, & Tangcharoensathien, 2009). MT is expected to generate annual global gross profit around USD 60 billion and to grow by around 20% annually (Noree, Hanefeld, & Smith, 2016). However, with an increasing number of international patients from high-income nations to receive cheaper treatment in low-middle-income nations, the competition has become intense, particularly in the involved countries (Leng, 2010; Noree et al., 2016). Therefore, to gain a higher profits and a better market share in a highly stiff competitive MT environment, building preferable brand equity is deemed as an ultimate goal for any hospital in medical destination countries (Chomvilailuk & Srisomyong, 2015; Das & Mukherjee, 2016). In Jordan, the main focus of this paper, MT is considered the backbone of the development of the economic growth (Dalbooh, 2015). Accordingly, Jordan's marketing agenda is shaped to enhance and manage its hospital/country brand equity reputation in the globe (Dalbooh, 2015).

To enhance the destination brand choice, customer relationship management (Ghani, 2012; Hanaysha & Hilman, 2015) and innovation (Brunello, 2014; Liao & Cheng, 2014) are considered among the main drivers that foster brand equity. The customer relationship is found to play an essential role in helping MT to retain its current or future customers and builds a strengthening relationship by using information technology to make customer experience outstanding (Akroush, Dahiyat, Gharaibeh, & Abu-Lail, 2011; Lin, Chen, & Chiu, 2010). Customer relationship management not only helps in developing and strengthening the medical tourist-brand relationship, but also encourages them to make better suggestions for the company's revival (Lin et al., 2010). This business tool entails customers' tastes and preferences which is helpful

for the companies to make their products according to the customer demand and market them according to customers' preferences (Jalali & Sardari, 2015; Lin et al., 2010).

According to Jalali and Sardari (2015), bringing loyal and satisfied customers boost brand equity and market position of the firm. This is why businesses are increasingly using technology and information systems to understand customers, strengthen the bond with the customers, and predicting customer wants and needs to come up with innovative products and services. If organizations implement innovation in their business practices and approaches, the productivity and brand equity enhances because this innovation helps to identify and explore customer preferences related to different products and services (Shiau, 2014). According to Battor and Battor (2010), customer relationship and innovation can create a dramatic effect on firm's productivity as well brand equity. This subject is linked with the bonding of customers and brand, which may also link with other services, goods, and organizations. Therefore, this topic has gained much fame among researchers and practitioners.

According to Alsaffar, Sun, and Kabeil (2009), most of the developing Arabian countries provide their best services, but with low efficiency; therefore this issue has raised questions regarding the effect of customer relationship management in the MT sector to develop innovation and branding. MT providers that implement innovation in their business practices are found to increase their added values as compared to those which are unwilling to use it (Bloom, Draca, & Van Reenen, 2009).

Previous researches on CRM and innovation have focused on the influence on organizational performance, organizational structure, and productivity. However, the impact of customer relationship management on innovation and brand equity has not been adequately investigated. Therefore, it is interesting to note that there is a lack of empirical research pool investigating the impact of customer relationship management and innovation on brand equity in Jordanian MT, which represents the rationale to conduct this very research. Keeping this in mind, this study aims to identify the impact of innovation on the relationship between customer relationship management and MT's brand equity in Jordan.

2. Literature Review

2.1 Brand Equity

Brand equity is an essential element of brand building (Keller, 1993). Brand with high equity is famed to lead to better customer preferences and use intentions (Ghani, 2012; Yoo, Donthu, & Lee, 2000). It is considered a vital method of competitive positioning strategy due to the power of identity, which differentiates it from competitor products (Aaker, 1991; Keller, 1993). That is, from customers' point of views, differential and preferable brand offers equity and generates the additional value in terms of enhancing the success of firms' brands (Ghani, 2012) and fostering brand loyalty and establishing a preferable brand image (Ghani, 2012; Hanaysha & Hilman, 2015; Yoo et al., 2000) and therefore, expanding market share (Hanaysha & Hilman, 2015), generating greater profits and decreasing the marketing expenses (Ghani, 2012; Keller, 1993; Yoo et al., 2000).

From customer-based brand equity, the aim of this study, Aaker (1991) defined brand equity as "a set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers" (p. 15). In fact, Aaker (1991) presented four main dimensions of brand equity: brand loyalty, brand perceived quality, brand awareness, and brand associations. Keller (1993) referred brand equity as "the differential effect of brand knowledge on consumer response to the marketing of a brand" (p. 8). For Keller (1993), brand equity included brand knowledge and brand image. Based on Aaker's (1991) and Keller's (1993) brand equity conceptualization measure, Yoo et al. (2000) treated brand equity as a set of three dimensions, mainly brand awareness/brand association as one combination, brand loyalty, and perceived quality. In addition, Yoo et al. (2000) developed a uni-dimensional scale for brand equity (overall brand equity) and investigated the linkage between marketing mix (4Ps) and overall brand equity. However, Yoo et al. (2000) advocated the implication of different marketing efforts (e.g., customer relationship and innovation) and the inter-linkages between them towards brand equity building, as future study guidance. In fact, the examination of customer relationship management and innovation in branding including the medical tourist perspectives is still further need for scholar attention (Akroush et al., 2011; Hanaysha & Hilman, 2015). Therefore, this research seeks to explore the effect of innovation on the relationship between customer relationship management and overall brand equity in the area of Jordan MT- patient's relationship.

2.2 Innovation

Every organization, not just businesses, needs one core competence, which is innovation. Innovation is not a new term for the organizations in the world today. The recognition of innovation as the critical discipline that will bring sustainable growth and be one of the most important core competencies of the business has been widely accepted (Jalali & Sardari, 2015; Lin et al., 2010). However, innovation has been conceptualized in a variety of ways in the literature (Bon & Mustafa, 2013). A broad definition of innovation provided by OCDE (2005) as "the implementation of a new or significantly improved product, or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (p. 46). Frequently, the types of innovation are classified using

the criterion of innovation purpose as technical innovation and non-technical innovation. Aboal and Garda (2012) defined technical innovation as the implementation of new organizational methods and new marketing methods. While, non-technical innovation was defined as the implementation of new or improved products /services and service delivery.

From the importance of knowing the relationship between innovation and brand equity, limited empirical studies in this area. However, a number of scholars indicated that product innovation had a significant effect with brand equity (Hanaysha & Hilman, 2015). Hussain, Munir, and Siddiqui (2012) found out that innovation significantly affected brand loyalty; an element of brand equity. Moreover, Liao and Cheng (2014) and Shiao (2014) stated that firms can foster their brand equity building through innovation. This statement is also supported by empirically highlighted that truly innovative firms can strengthen the brand equity. Therefore, the following hypotheses are formulated:

H1: Innovation significantly drives overall brand equity.

H1a: Technical innovation significantly drives overall brand equity.

H1b: non-technical innovation significantly drives overall brand equity.

2.3 Customer Relationship Management

Customer relationship management is a tool to create, maintain, and strengthen the relationships with customers, whether B2B or B2C to satisfy them and their demands (Khosravi, 2015). Mainly, building a firm long-term customer relationship is viewed as a critical success factor to achieve competitive advantage, customer satisfaction, customer loyalty, and brand success (Ghani, 2012). However, the broadly attached meaning to the customer relationship management is presented by Kinciad (2003) as “the strategic use of information, processes, technology, and people to manage the customer’s relationship with your company (marketing, sales, services, and support) across the whole customer life cycle” (p. 41). This definition classified customer relationship into five perspectives, namely, strategy, process, philosophy, capability, and technology (Zablah, Bellenger, & Johnston, 2004).

When considering a strategic perspective, Sin, Alan, and Yim (2005) defined customer relationship management as “a comprehensive strategy and process that enables an organization to identify, acquire, retain, and nurture profitable customers by building and maintaining long-term ‘partnership’ relationships with them” (p. 1266). In effect, Sin et al. (2005) treated customer relationship management as a multidimensional construct of knowledge management, technology-based CRM, CRM-organization, and customer focus. While, Abdullateef, Mokhtar, and Yusoff (2010) treated customer relationship management as a set of multidimensional construct of knowledge management, technology-based CRM, CRM-organization, and customer orientation. Differently, Lin et al. (2010) and followed by Jalali and Sardari (2015) treated customer relationship management as a set of multidimensional construct of information sharing, technology-based CRM, joint problem solving, customer involvement, and long-term association. Based on the above discussion, this study integrated the five most popular activities of customer relationship management in the context of healthcare in one construct includes, knowledge management, technology-based CRM, customer involvement, long-term association, and joint problem solving.

2.4 Linking Customer Relationship Management to Innovation and Brand Equity

Today’s rapid advances in information and communication technology has provided greater opportunities for firms to establish, nurture, and sustain long term relationships with their customers than ever before (Akroush et al., 2011; Jalali & Sardari, 2015). The ultimate goal is to transform these relationships into greater profitability (Lin et al., 2010). Rapidly changing technology and unexpected environment forces companies to develop their strong relationship with customers to retain their customers (Lin et al., 2010; Sin et al., 2005) and build strong brands that lasting forever (Abbasi, Hajirasouliha, & Faraji, 2014). Since, customer relationship management helps out the companies to identify their customer preferences and build their marketing campaigns (Bhakane, 2015). Innovation is considered as a mean to improve product or service image and provide a lasting competitive advantage; therefore in the era of dynamic environment a company needs to be more innovative (Bloom et al., 2009; Brunello, 2014).

Battor and Battor (2010) indicated that the companies which perceived higher level of customer relationship management were achieved higher levels of improvements in customer satisfaction, customer targeting, excellence and innovation in services. Furthermore, some literature found out a good indication of the positive relationship between customer relationship management and innovation (Ghafari, Karjalian, & Mashayekhnia, 2011; Jalali & Sardari, 2015). Similar significant indications were found in the study of Abbasi et al. (2014) and Amir, Yousof, and Asma (2014) in their customer relationship management and brand equity empirical consideration. They indicated that customer relationship management drives organizational performance in terms of brand equity building. However, previous literature (e.g., Battor & Battor, 2010) stated that only customer relationship management does not fulfill the requirements of making a successful brand in today’s market, but businesses need to create innovative brand experience. Based on the above evidences, the following hypotheses are presented:

H2: Customer relationship management significantly drives overall brand equity.

H3: Customer relationship management significantly drives overall innovation.

H3a: Customer relationship management significantly drives technical innovation.

H3b: Customer relationship management significantly drives non-technical innovation.

H4: Overall innovation acts as a mediator in the relationship between customer relationship management and overall brand equity.

H4a: Technical innovation acts as a mediator in the relationship between customer relationship management and overall brand equity.

H4b: Non-technical innovation acts as a mediator in the relationship between customer relationship management and overall brand equity.

3. Research Methodology

In this quantitative empirical study, which aimed to investigate the role of innovation as a mediator in the relationship between customer relationship management and brand equity in Jordan, particularly in MT context, a questionnaire based survey was used to gather data from the sample in a systematic random manner, whereby every 4th foreign patients were chosen. Five private hospitals in the main foreign patient destination city (Amman) surveyed in the whole study to collect the data used a seven point Likert scale (strongly disagree and strongly agree) in the questionnaire design. However, out of 384 foreign patients surveyed in these selected hospitals, only 306 (79.6%) completed questionnaires were analyzed through statistical software (SPSS and AMOS).

The measurement scale was extracted from existing literature. Customer relationship management was measured using five dimensions with 24 items as follows: knowledge management (4 items) obtained from Sin et al. (2005), long-term association (6 items), joint problem solving (3 items), and customer involvement (5 items) gained from Lin et al. (2010). Technology-based CRM (6 items) taken from Lin et al. (2010) and Sin et al. (2005). Two types of innovation were also identified as follows: technical innovation (15 items) taken out from Hanaysha, Hilman, and Abdul-Ghani (2014) and Shiau (2014) and non-technical innovation (8 items) borrowed from Lin et al. (2010) and Wu and Hsieh (2015). Overall brand equity (11 items) taken from Vatjanasaregagul (2007). The measurement scale was pre-tested and remained valid with minor alterations.

4. Data Analysis and Results

Descriptive analysis results demonstrate that the data form of 55.6 % male and 44.4% female. The major age groups of participants are in 36-45 years old at 28.8% and 26-35 years old at 22.9%. Concerning education, it is noticed that bachelor is the major degree at 48.0% and the second degree is diploma at 23.9%. Meanwhile, postgraduate is the third degree at 19.6%. Furthermore, married people are the largest marital status group at 66.7%, while single status is the second at 20.9% and other marital status is the third group at 12.4%. With respect to the monthly income level, it is noticed that the two main groups are in the ranges of below 1000 USD and USD 1001-2000 at percentage of 52.9 and 31.4, respectively. Concerning originality, it is found that the Middle-Easterner is the heaviest group at 61.7% and the second group is from North-Africa at 33%.

To assess the validity of the measurement scales, confirmatory factor analysis (CFA) was applied to test the goodness of the measurement scales and construct validity using the goodness of fit indexes as recommended by Hair, Black, Babin, Anderson, and Tatham (2010). Regardless the p-value of Chi-square (χ^2) (Khine, 2013), the Comparative Fit index (CFI) > 0.90, Tucker-Lewis Index (TLI) > 0.90, Goodness-of-Fit index (GFI) > 0.80, Adjusted Goodness of Fit (AGFI) > 0.80, and Root Mean Square Error of Approximation (RMSEA) < 0.08 are employed to assess the CFA results. To evaluate the convergent validity, standardized factor loadings > 0.50 as recommended by Hair et al. (2010) and Average Variance Extracted (AVE) > 0.50 as suggested by Bagozzi (1980) were applied to confirm the convergent validity. Besides, AVE value > 0.50 was also used to support the discriminant validity as enhanced by Byrne (2010). Furthermore, Cronbach's alpha > 0.70 was used to support the internal consistency of the constructs as suggested by Hair et al. (2010).

Based on the above discussion, CFA was applied separately on customer relationship management, technical innovation, non-technical innovation, overall brand equity as demonstrated in Table 1, provided support for the data fit model. However, the final outcomes of CFA indicated a fair fit of the four-factor model to the data (χ^2 (1232.141 at p = 0.000, CFI (0.936; TLI (0.931; GFI (0.845; AGFI (0.822; and RMSEA (0.052).

Table 1. Confirmatory Factor Analysis Outcomes

Indicators	Customer Relationship Management	Technical Innovation	Non-Technical Innovation	Overall Brand Equity	Overall Measurement Model among Constructs
χ^2	299.287	47.117	4.777	15.041	1232.141
p-value	0.000	0.041	0.311	0.09	0.000
CFI	0.938	0.995	0.998	0.996	0.936
TLI	0.921	0.993	0.996	0.994	0.931
GFI	0.907	0.975	0.995	0.987	0.845
AGFI	0.866	0.958	0.981	0.969	0.822
RMSEA	0.077	0.036	0.023	0.043	0.052

In addition, the measures of the factor loadings for the constructed variables ranged from 0.603 to 0.920 as follows: customer relationship management (from 0.603 to 0.874), technical innovation (from 0.646 to 0.875), and non-technical innovation (from 0.716 to 0.920), and overall brand equity (from 0.767 to 0.868). These results indicated evidence for the convergent validity (Hair et al., 2010).

Furthermore, the magnitudes of the Cronbach's Alpha value for each construct were higher than 0.70 threshold value as follows: customer relationship management (0.921), technical innovation (0.913), non-technical innovation (0.752), and overall brand equity (0.930), supporting the construct reliability (Hair et al., 2010). These outcomes further supported the convergent validity (Hair et al., 2010). Moreover, the outcomes of the AVE for all constructs were above 0.50, customer relationship management (0.731), technical innovation (0.553), non-technical innovation (0.702), and overall brand equity (0.691), presenting an evidence for the issue of discriminant validity (Byrne, 2010).

The Goodness of Fit indices of the structural model was evaluated to establish for hypotheses testing. The structural model indicated a fine fit for the data whereby χ^2 (1232.631 at $p = 0.000$), CFI (0.936), TLI (0.931), GFI (0.845), AGFI (0.823), and RMSEA (0.052). The hypotheses testing shown in Table 2 demonstrate that innovation (estimates = 0.554, $t = 3.556$ $p < 0.001$) and customer relationship management (estimates = 0.604, $t = 7.452$ $p < 0.001$) are significantly enhance overall brand equity that present evidence for H1 and H2. Also, technical innovation (estimates = 0.5529, $t = 1.966$ $p < 0.05$) has a significant impact on overall brand equity that provides proof for H1b. In contrast, non-technical innovation was found to have an insignificant effect on overall brand equity (estimates = 0.156, $t = 0.373$ $p > 0.05$) breaking for H2b. In addition, the analysis shows that customer relationship management is significantly drives overall innovation (estimates = 1.110, $t = 11.381$ $p < 0.001$), technical innovation (estimates = 1.183, $t = 11.609$ $p < 0.001$), and non-technical innovation (estimates = 1.272, $t = 11.172$ $p < 0.001$) that presents support for H3, H3a, and H3b.

Table 2: Study Results

	Hypotheses	Estimates	t-value	Significance
H1	Innovation significantly drives overall brand equity.	0.554	3.556	***
H1a	Technical innovation significantly drives overall brand equity.	0.529	1.966	0.049
H1b	Non-technical innovation significantly drives overall brand equity.	0.156	0.373	0.709
H2	Customer relationship management significantly drives overall brand equity.	0.604	7.452	***
H3	Customer relationship management significantly drives overall innovation.	1.110	11.381	***
H3a	Customer relationship management significantly drives technical innovation.	1.183	11.609	***
H3b	Customer relationship management significantly drives non-technical innovation.	1.272	11.172	***

With respect to indirect effect of innovation, bootstrapping approach on the basis of 95% confidence intervals (CI) was used, which is considered as "one of the most valid and powerful methods for testing intervening variable effects (MacKinnon *et al.*, 2004; Williams & MacKinnon, 2008) and for this reason alone, it should be the method of choice" (Hayes, 2009, p. 412). According to the bootstrapping results, overall innovation is found to have a full mediation effect, since the direct effect of customer relationship management ($p = 0.061$) on overall brand was an insignificant and the indirect effect of customer relationship management ($p = 0.008$) on overall brand equity was significant confirming for H4. Meanwhile, technical innovation is also found to have a full mediation impact on overall brand equity, since the direct effect of customer relationship management ($p = 0.191$) on overall brand equity was an insignificant and the indirect effect of customer relationship management ($p = 0.014$) on overall brand equity was significant supporting for H4a. Similarly, non-technical innovation is also found to have a full mediation role on overall brand equity, whereby the direct effect of customer relationship on overall brand equity was insignificant ($p = 0.299$) and the indirect effect of customer relationship management on overall brand equity was significant (0.037) that provide evidence for H4a and H4b. These findings indicate that the impact of customer relationship management on overall brand equity is fully mediated through innovation.

5. Discussion and Conclusion

This empirical research was conducted to investigate the influence of customer relationship management and innovation on brand equity of MT brands in Jordan. The findings revealed that the customer relationship management significantly enhancing MT overall brand equity. This finding is in agreement with (Akroush *et al.*, 2010; Bhakane, 2015) who stated that customer relationship management had a significant impact on brand equity assets. Therefore, in order to enhance overall brand equity, MTs are advised to build a solid long-term relationship with medical tourists. Further, the impact of customer relationship management on innovation and its dimensions was also tested. The outcomes demonstrated that customer relationship management positively and significantly drive every factor of innovation. This outcome enhances the agreement by (Battor & Battor, 2010; Jalali & Sardari, 2015), who indicated that customer relationship management is a key driver of innovation.

Furthermore, in line with previous studies (e.g., Hanaysha & Hilman, 2015; Hussain *et al.*, 2012) our results present evidence for a significant relationship between innovations on overall brand equity. Thus, for a MT to gain strong overall brand equity to bond prosperity over competitors; it is, totally, significant to be innovative in terms of product, process, and service innovation (Shiau, 2014). This further explains medical tourists trust in medical destinations associated with advanced technical innovation. Perceiving MT brand as brands that have more technical innovation is absolutely fostering the selection of medical tourism destination. However, this result is conflicting with the study by Ngo and O'Cass (2013), who reported that technical innovation had an insignificant impact on performance.

Regardless the important role of technical innovation on brand performance, the results showed an insignificant effect of non-technical innovation on overall brand equity. This result is also in disagreement with Tuan, Nhan, Giang, and Ngoc (2016) who stated that non-technical innovation is an important factor in enhancing manufacturing performance. This outcome is probably because the negative experience associated with non-technical innovation.

This research has shown that the connection between customer relationship management and overall brand equity through innovation is missing. The findings present a clear evidence for the role of innovation either technical or non-technical as a mediator between customer relationship management and overall brand equity. Therefore, MT providers to achieve the superior overall brand equity, they can only gain insights into medical tourist's preferences through customer relationship management and transfer it to innovative experience with the brand.

MT marketers are advocated to consider customer relationship management in their marketing efforts for their MT brands. Further, they are also recommended to manage their innovation activities effectively since they fully mediate the relationship between customer relationship management and overall brand equity.

To broaden the topic, future studies are suggested to test the proposed model with a sample from another service setting; another perspective and different countries. In addition, future studies are recommended to study different mediating variables that could enhance brand equity.

In conclusion, this study targeted to explore the influence of innovation between customer relationship management and overall brand equity for MT in Jordan. The statistical results demonstrated that customer relationship management significantly enhances technical innovation, non-technical innovation and overall brand equity. Similarly, only technical innovation drives overall brand equity. Likewise, innovation capabilities fully mediate the linkages between customer relationship management and overall brand equity, particularly in MT brands, more specifically in Jordan.

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