

An assessment on employees' business intelligence and CRM on customer satisfaction: A case study of Auto industry

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ABSTRACT

This paper performs an empirical investigation on employees' business intelligence and customer relationship management and their effects on customer satisfaction. The proposed study has been implemented among 625 people, 240 sales representative and 385 regular customers, who are involved with products of an Iranian automaker named Iran Khodro. The proposed study designs three questionnaires in Likert scale for business intelligence, customer relationship management and customer satisfaction and Cronbach alpha have been calculated for these three questionnaires as 0.85, 0.84 and 0.78, respectively. The study distributes the questionnaires among groups, employees as well as customers, and using one-way t-student test as well as regression technique the study finds that business intelligence and customer relationship management are within an acceptable limit ($P < 0.01$) and they positively influence on customers' satisfaction ($P < 0.01$).

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1. Introduction

Business intelligence plays essential role on the success of organizations and building a sustainable growth on business development (Negash, 2004; Gangadharan & Swami, 2004; Ranjan, 2009; Vitt et al., 2010; Loshin, 2012). The recent advances on information technology (IT) have also boosted business intelligence adaptation in organizations. Chung et al. (2005), for instance, presented a visual framework for knowledge discovery on the Web by applying an empirical investigation of business intelligence exploration. According to Tarokh and Ghahremanloo (2007), World Wide Web has become an essential channel for building the businesses and IT provides the opportunity to reach the global market for the Enterprises. IT adaptation has become the first point of contact and the customers for the businesses. This helps us understand customer's behavior by analyzing and profiling their behavior. Data warehousing as well as data mining technologies and contact technology may also facilitate the e-businesses to better understand their e-customers.

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Customer Relationship Management (CRM) is one of most popular methods for achieving this goal (Anderson-Lehman et al., 2004; Sin et al., 2005; Lawton, 2006). Tarokh and Ghahremanloo (2007) performed an investigation on customer intelligence, collaborative CRM, presented a model in contact centers and channels and investigated the model in an Iranian automaker. Hall (2004) investigated the missing point between business intelligence and CRM adaptation. Mithas et al. (2005) evaluated the impact of CRM on customer knowledge and customer satisfaction. An investigation of archival data for a cross-section of U.S. firms indicated that the implementation of CRM applications was positively associated with improved customer knowledge and improved customer satisfaction. They also showed that gains in customer knowledge were enhanced when firms share their customer-related information with their supply chain partners.

Hallowell (1996) performed an investigation on the relationships among customer satisfaction, customer loyalty, and profitability. They reported that when customers are satisfied with their services, they will more likely to purchase product. Verhoef (2003) performed an empirical study to understand the impact of CRM efforts on customer retention and customer share development. They reported that affective commitment and loyalty programs that provide economic incentives positively influences both customer retention and customer share development, whereas direct mailings affect customer share development. However, the impact of these variables was rather small. They also reported that firms could apply the same strategies to influence both customer retention and customer share development.

2. The proposed study

This paper performs an empirical investigation on employees' business intelligence and customer relationship management and their effects on customer satisfaction. The proposed study has been implemented among 625 people, 240 sales representative and 385 regular customers, who are involved with products of an Iranian automaker named Iran Khodro. The proposed study designs three questionnaires in Likert scale for business intelligence, customer relationship management and customer satisfaction and Cronbach alpha have been calculated for these three questionnaires as 0.85, 0.84 and 0.78, respectively. These results are within the desirable limit and we therefore analyze the results. The proposed study considers the following hypotheses,

1. Employees' business intelligence is in desirable level in Iran Khodro automaker.
2. CRM is in desirable level in Iran Khodro automaker.
3. Business intelligence and CRM positively influence customer satisfaction in Iran Khodro automaker.

The study distributes the questionnaires among groups, employees as well as customers, and using one-way t-student test as well as regression technique analyzes the results as follows,

$$\text{Customer satisfaction} = \beta_1 \text{ Business intelligence} + \varepsilon, \quad (1)$$

$$\text{Customer satisfaction} = \beta_2 \text{ CRM} + \varepsilon, \quad (2)$$

where β_1 and β_2 are coefficients to be estimated and ε is the residual of the regression models.

3. The results

In this section, we present details of our findings on testing various hypotheses and the survey. Table 1 demonstrates the results of the implementation one-way t-student test.

Table 1

The results of t-student test

Variable	Mean	Standard deviation	df.	t	Sig.
Business intelligence	3.24	0.57	239	6.438	0.00
CRM	3.39	0.69	384	11.112	0.00

As we can observe from the results of Table 1, the mean of business intelligence and CRM are 3.24 and 3.39 and they are well above the measurement index of 3. These two items are statistically meaningful when the level of significance is one percent. Table 2 shows details of our findings on the implementation of regression analysis.

Table 2

The summary of regression analysis

Variable	Adjusted R-Square	Beta	F	P
Business intelligence	0.25	0.51	82.975	0.00
CRM	0.44	0.66	303.447	0.00

The results of Table 2 clearly indicate that business intelligence and CRM influence on customer satisfaction, positively when the level of significance is one percent. Adjusted R-Square values for Eq. (1) and Eq. (2) are 0.25 and 0.44, respectively. These results indicate that customer satisfaction is influenced by CRM more than business intelligence is. In other words, CRM could increase customer satisfaction more than business intelligence. These results confirm three hypotheses of the survey.

4. Conclusion

In this paper, we have presented an empirical investigation to study the effects of business intelligence and customer relationship management on customer satisfaction in one of Iranian automakers. The proposed study has used three questionnaires in Likert scale and using t-student and regression techniques, we have concluded that CRM plays essential role on customer satisfaction and business intelligence influences customer satisfaction, positively.

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