Design banking customer' behavior in Social Media by Theory Mining Method

Diseño de la banca de clientes en el comportamiento en los medios de comunicación social

Projetar o comportamento do cliente bancário nas mídias sociais por Theory Mining Method

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Abstract

This qualitative research was conducted by mining the client's behavior by using the theory and method of base mining and database. For this reason, 15 customer theories were applied through Twitter, telegrams and interviews with 10 bank managers from the province of Kurdistan. The compilation of the first topics was done during the coding process and the categories were obtained. Then, in the coding step of the base, the link between the coding paradigms was determined; In the step of selective coding, all the coding paradigms are explained. Compared with previous research, it can be found that the current model eliminates defects of the previous model and offers a complete picture of effective terms on the behavior of the banking client and, finally, offers a model of customer behavior in private and government banks.

Keywords: Customer' behavior, Social Media, Theory Mining Method, Database, Data Mining.

Resumen

Esta investigación cualitativa se realizó mediante la minería del comportamiento del cliente mediante el uso de la teoría y el método de minería de base y base de datos. Por esta razón, se aplicaron 15 teorías del cliente a través de Twitter, telegramas y entrevistas con 10 gerentes de bancos de la provincia de Kurdistán. La recopilación de los primeros temas se realizó durante el proceso de codificación y se obtuvieron las categorías. Luego, en el paso de codificación de la base, se determinó el vínculo entre los paradigmas de codificación; en el paso de codificación selectiva, se explican todos los paradigmas de codificación. En comparación con investigaciones anteriores, se puede encontrar que el modelo actual elimina defectos del modelo anterior y ofrece una imagen completa de términos efectivos sobre el comportamiento del cliente bancario y, finalmente, ofrece un modelo de comportamiento del cliente en bancos privados y gubernamentales.

Palabras clave: comportamiento del cliente, redes sociales, método de extracción de teoría, base de datos, minería de datos.

Resumo

Esta pesquisa qualitativa foi realizada por meio da mineração do comportamento do cliente, utilizando a teoria e o método de mineração de base e banco de dados. Por esta razão, 15 teorias de clientes foram aplicadas através do Twitter, telegramas e entrevistas com 10 gerentes de bancos da província do Curdistão. A compilação dos primeiros tópicos foi feita durante o processo de codificação e as categorias

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foram obtidas. Então, na etapa de codificação da base, foi determinada a ligação entre os paradigmas de codificação; Na etapa de codificação seletiva, todos os paradigmas de codificação são explicados. Comparado com pesquisas anteriores, pode-se constatar que o modelo atual elimina defeitos do modelo anterior e oferece um quadro completo de termos efetivos sobre o comportamento do cliente bancário e, finalmente, oferece um modelo de comportamento do cliente em bancos privados e governamentais.

Introduction

According to economy theories in renovation era, customer' behavior is logical. Information was calculated in decision process and it is based on maximization of results, as well, logical customer follows select investment in order to obtain more efficiency in time and money against future accidents (Knight[1], 1921). Using technology information can be regarded as key decisions for start point in order to offer narration in investment for banking and financial markets (Bekro Rickardi[1], 2014). In this regard, qualitative information for banking customers are regarded as important resource in social media because of interactions and banking customers are converted into generator and behavioral data (Ereveles et al., 2015).

In Iranian banks, analysis is based on questionnaire. Whereas, today, great database consists of digital process, words, images, video and non-numerical outputs from volume, speed and variety which causes ambiguity to analysis data as if, in marketing, interest in great data was marketed in order to marketing decisions and perform marketing campaigns which converted it to successful marketing method (Everless et al., 2015). And also, Marker Company reported that during 2013, 85% of senior marketers used great data in order to increase their insight about customers in United States.

In this research, firstly, customer' behavior was discussed in great database also in social media by interview with customers on product, service or banks and social data are extracted. Then, banking marketing based on customer was discussed in terms of data mining and finally, paradigm model pertains to customer' behavior was offered in financial situation of Iran.

Research Background

Great data is the most important subject in present marketing. It is a solution to end all future marketing problems (Monika et al., 2011). Even, some claim that by great data, we can find when and why of marketing (Mayer and Kiuker, 2013). Discussion of great data can recognize landscape of banking customers in great scales for social media (Bud and Crawford, 2011). And at present qualitative research of consumers shall be discussed in YouTube and shall be investigated.

Monize and Ugin 2001 stated that great data for banking customers offer information on comprehension, commitment and shared discourse.

In qualitative research of marketing, meaningful activities of online customers and cooperation between customers in order to share knowledge (Hendelemn, 1998), world consumer (Rocka and Mosander, 2009), mental interaction of customers (Dewalk, 2007) which make narrations and meanings (Golding, 2005, p 298).

Combination of great data is in online analysis in order to comprehend all different means. Many other types of online social medias like you Tube, twitter, Facebook and others have access to social media for banking customers and brands and advertisements and share many information and web estimations tools are regarded as solution for ranking and classifying data from social media and comprehend in networks and direct them for consumer information (Candeson and Keljard, 2014).

Mouri and Hable 2009 stated that great data are inputs help buyers to select products and are on share filter as if purchasing of product is due to other purchase.

Hou et al., 2012, stated that great data in classifying banking products means mass media provide opportunities to theory, insight and social theories which caused managers to offer products and services as for customer' privacy.

Bayes 2013, stated that the banks can use different resources which belong to customers like address, types of services and they are effective to develop and promote products.

King et al, 2014, in their research stated that social mental mechanism was checked after purchasing and it is due to likes, images and films and digital loyalty.

Kalapder 2015, stated that great data of customers is on replacing products, searching, recording and click on different products and to restore behavior.

Volini and Tiffert 2015, stated that the customers use online network as if selfie images for customers are sent to Facebook daily and estimation life and self-quantitative techniques are used to register behaviors.

Anderson et al., 2015 stated that other theories, insights are expressed as interior behavior by recognition of behavior and it is considered by capacity, volume and variance as insight.

Normand 2015, in his research discussed role of great data in customer' behavior and stated that the customers are following to social media and problem, evaluate purchasing behavior, evaluate after purchase and interaction after it which make many opportunities. In this research, role of great data is offered in banking customers by searching technical words (recognition of problem), electronically transmission (purchase behavior), upload films and images (consumption), number of consumption and exit from social network.

Research Methodology

This research is to following new method for banking customers by great data. It is regarded as fundamental research from manner of collecting data and it is on descriptive (non-empirical) one.

The statistical population consists of 15 customers of banks who registered by social network like twitter, telegram and also 10 banking managers who experienced social media. In order to sample method, theoretical method has been used. In this method, sampling continues when model reaches in saturation. In performing model, it needs simultaneously and consequent data selection. mean of theoretical sampling is that the researcher selects data and can compile images and texts by NVIO10 software and this method is intentional not probable and concentrates upon theory.

Findings

The effective internal activities consist of content, control of behavior on others by customer revision and user and effective external activities like marketing activities, catalogue by bank.

Table 1. contents pertain to casual conditions

Main category	Sub-item	Contents
Casual items	Emotional factors	Enjoying
		Not-satisfy anticipations
		Satisfy anticipation
	Cognitive factors	Confirmation of consent (mental experience)
		Non-confirmation
		Mental comprehension derived from services
	Behavioral factors	Loyalty
		More inclination to purchase
		More experiences

Table 2. concepts and items pertain to background

Main item	Sub-item	Concepts
Background conditions	Effective internal activities	Make content
		Control behavior by customer revision
		Suggest to user
	Effective external activities	Insight by bank staff
		Send catalogue
		Product specifications by bank

Interventional conditions consist of general conditions like space and culture which are facilitator or limiter for strategies. Mental specifications which cannot searched in customer' evaluations are controlled and are pointed as personal needs which are on banking services.

Outcomes are same as results which are mass advertisements, searching words, technical words, electronic negotiations, upload films and images and exit from social network (evaluation after purchase) and purchase revision.

Table 3. concepts and items pertain to interventional contents

Main item	Sub-item	Concepts
Interventional conditions	Mental specifications	Participation
		Innovation
		Control resource
		Personality factors
		Needing to know

Table 4. concepts and items pertain to outcomes

Main item	Sub-item	Concepts
Outcomes	Stop or restore developments	Mass advertisements
		Searching technical words
		Electronic negotiation
		Electronic transmission of knowledge
		Upload films and photos
		Exit from social networks (evaluate after purchase)
		Advise to others by customer

Analytic algorithm is on social media by marketing in three data levels and method and results. In data level from customer' point of view, type of social media, customer' clicks and like and evaluation is considered. From combination of products, rank of product (electronic and traditional) is considered. From progressing sales and evaluation of data, traction and price evaluation are important and from place, three factors like twitter, telegram are evaluated.

In method which combined with clustering and classifying methods, clustering and high level models are used to progress sales and society patterns and shared filtering and RFM and regression.

In results and applied level for customers, customer profiles is resulted to ontology and production and analysis market and systems which is analyzed product and rivals and resulted to dynamic analysis.

Table 5. concepts and items pertain to analysis in terms of marketing combination

Main item	Sub-item	Concepts
Analysis in terms of marketing	Data	Population specifications
		Social data
		Data for customer revision
		Click data and like
		Data evaluation
		Data in terms of products and service
		Traditional data
		Data evaluation pertain to progression
		Data traction
		Price evaluation
		Social media places like twitter, telegram
		Data evaluation pertain to social media
	Method	Clustering method
		Classifying method
		Social pattern
		Regression
		Shared filtering
		Time period algorithm, money and sales, RFM
	RESULTS	Customer clustering
		Customer profile
		Product ontology
		Production
		Sales progression
		Sales progression to systems
		Price analysis
		Rivals analysis
		Advertisement in terms of place

Theoretical Model

Interventional conditions for customer' behavior in social media
- Mental specifications
- Participation
- Innovation
- Control resource
- Personality factors
- Needing to know

Behavior analysis in terms of marketing combination in social media:

Data
Population data
Data for social media
Customer' data
Click data
Evaluate data
Data for product and service
Products data
Progressing data
Evaluation of data pertain to progressing
Data traction
Price evaluation
Place of social media like twitter, telegram
Method:
Clustering method
Classifying method
Social patterns
Regression
Shared filtering
RFM algorithm
Results:
Customer clustering
Customer profile
Product ontology
Production
Promotion result to marketing
Promotion and systems
Analysis of price
Analysis of Competitor
Advertisement based on place
Dynamic Communication Analysis

Casual conditions for customer' behavior in social network:
Emotional factors:
Enjoying
Not satisfy anticipations
Satisfy anticipations
Cognitive factors:
Confirmation of satisfaction (mental experience)
Not confirmation of satisfaction
Mental comprehension derived from values
Behavioral factors
Loyalty
More inclination to purchase
More experiences

Outcomes of customers in social media:
Stop or restore behavior
Deceptive ads
Searching technical words
Electronic negotiation
Electronic transmission
Upload films and photos
Exit from social networks
Purchase product revised
Creative advice to others

Background conditions for customer' behavior in social media
Effective internal factors
Making content
Control other' behavior by customer revision
Suggest to user
Effective external factors
 Send insight by bank staff
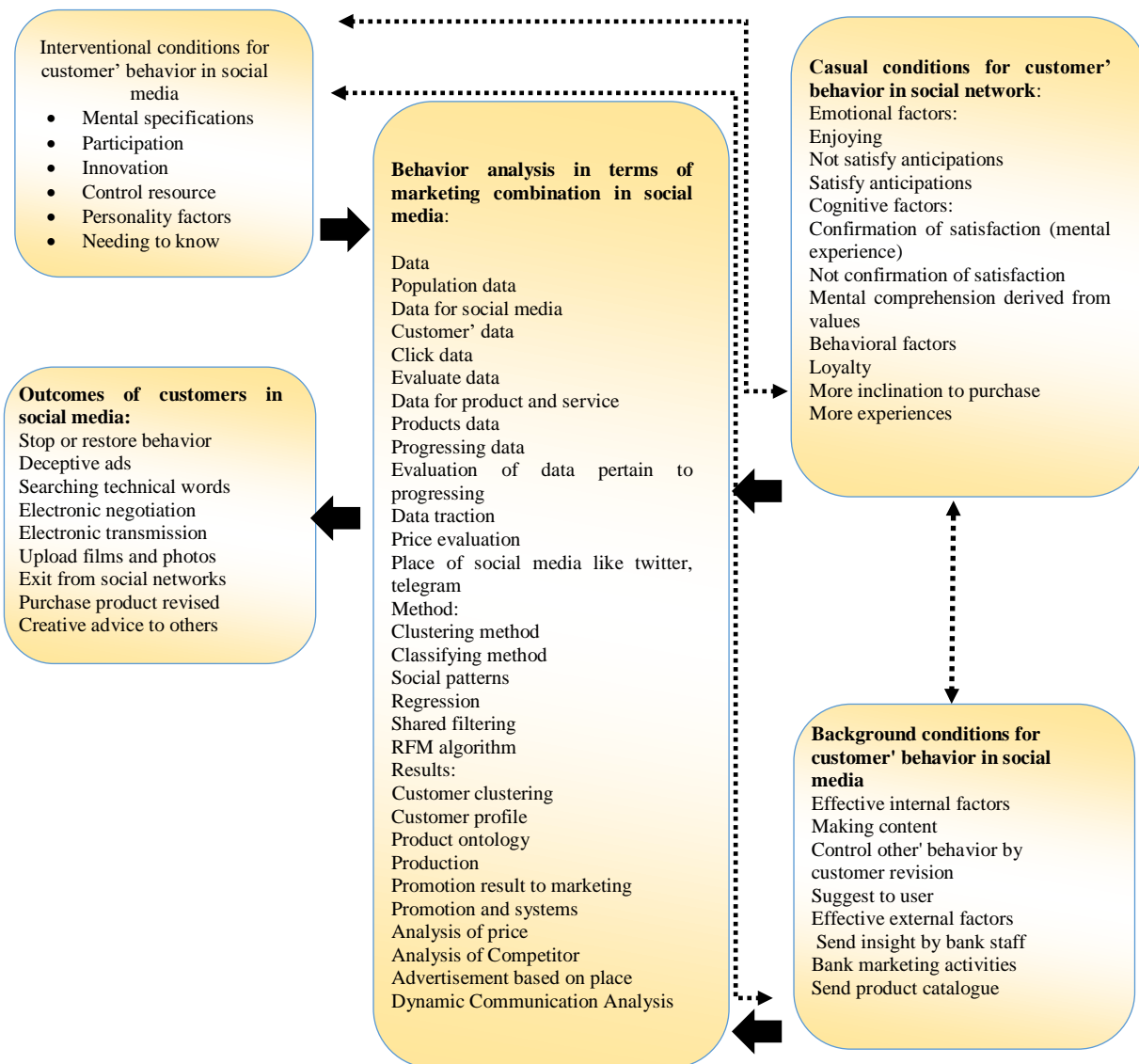Bank marketing activities
Send product catalogue

Figure 1: behavior model of banking customers in social network in terms of theory mining and great data

In model obtained, it is so important to identify focal model (a category which is pertinent with other concepts). After revision items, it seems that what is on banking customers is deceptive ads, knowledge and systems as if casual, background and interventional conditions are designed in terms of them.

Conclusion and Suggestions

In this article, we combined great data in analysis of banking customers in order to comprehend online interactions and different means and it was tried to discuss insights, feelings and mental and emotional specifications and financial data from qualitative and quantitative in combination of great data. The aim is to obtain qualitative and quantitative landscape for online

customers. By reviewing previous researches on customer' behavior in social network, it was recognized that in first step, customer' behavior conform with researches of Wall et al 2005, Bigel et al., 2008, King et al., 2014 and Anderson et al., 2015. And in second step, background conditions of customer' behavior conform with researches of Haus 2007, Bayes 2013, King et al., 2014, Klapder 2015 and Volini et al., 2015.

In third step, interventional conditions by mental specifications conform with researches of Black and Wall et al., 2005, King et al., 2014 which factors pertain to five factors like personality, internal and external control resource and need to know are complicated factors which are identified difficulty. In fourth step, persons, products, price, sales progression and place of media and results are discussed and conform to researches of Negay et al., 2009. Mouri et al., 209, Abesli et al., 2013, Anderson et al., 2015. Chan et al., 2015, Velini and Tiffert 2015. In outcome step, we confront with two behaviors which are stop and restoration and positive ads can increase negotiation in terms of online space and three knowledge are used. The customers are following knowledge about others by profile and send texts and photos and try to stimulate others and compare products and it conforms to researches of King et al., 2014, Kandson and Keljard 2014, Normand 2015, Chan et al., 2015.

It is suggested that it is provided a biography from customers in order to analyze customer' culture with values, customs, means of Iranian to promote data and as well, manner of correct data and information are limitations of research which shall be considered in future research.

It is suggested that in order to study the effect of social media on banking purchase behavior, combination of data and traction of background is used.

It is suggested that banks consider products and services in online space before commercialization them based on focal groups to compare products and services and as well, they consider investment in commercial intelligent in terms of marketing to make competitive advantage for customer' behavior to plan their products.

References

Abbasolu, M. A., Gedik, B., and Ferhatosmanolu, H. "Aggregate profile clustering for telco analytics,"Proceedings of the VLDB Endowment (6:12) 2013, pp 1234-1237.

And emotions on behavioral intentions", Journal of Services Marketing, 22 (4), pp. 303-315.

Andrews, M., Luo, X., Fang, Z. and Ghose, A. (2015), "Mobile ad effectiveness: hyper-contextual targeting with crowdedness", Marketing Science

Baker. A, Ricciardi.k The Psychology of Financial Planning and Investing.wiley. p23

Bayus, B.L. (2013), "Crowdsourcing new product ideas over time: an analysis of the Dell IdeaStorm community", Management Science, Vol. 59 No. 1, pp. 226-244.

Bigne, J. E., Mattila, A. S. & Andreu, L. (2008). "The impact of experiential consumption cognitions

Blackwell, R.D., Miniard, P.W. and Engel, J.F. (2005), Consumer Behavior, 10th ed., South-Western College Publications.

Chan, K.W., Li, S.Y. and Zhu, J.J. (2015), "Fostering customer ideation in crowdsourcing community: the role of peer-to-peer and peer-to-firm interactions", Journal of Interactive Marketing, Vol. 31, pp. 42-62.

Creswell, J. W. & Miller, D. L. (2000). Determining Validity in Qualitative Inquiry,Theory into Practice, 39(3): 124-131.

De Valck, K. (2007). The war of the eTribes: Online conflicts and communal consumption. In B. Cova, R. Kozinets, & A. Shankar (Eds.), Consumer tribes (pp. 260_274). Oxford: Butterworth-Heinemann

Erevelles, S., Fukawa, N. and Swayne, L. (2015), "Bid data consumer analytics and the transformation of marketing",

Goulding, C. (2005). Grounded theory, ethnography and phenomenology: A comparative analysis of three qualitative strategies for marketing research. European Journal of Marketing, 39(3), 294_308.

Handelman, J. (1998). Ensouling consumption: A netnographic exploration of the meaning of boycotting behavior. Advances in Consumer Research, 25(1),475_480.

King, R.A., Racherla, P. Bush, V.D. (2014), "What we know and don't know about online word-of-mouth: a review and synthesis of the literature", Journal of Interactive Marketing, Vol. 28 No. 3, pp. 167-183

Klapdor, S., Anderl, E.A., von Wangenheim, F. and Schumann, J.H. (2014), "Finding the right words: the influence of keyword characteristics on performance of paid search campaigns", Journal of Interactive Marketing, Vol. 28 No. 4, pp. 285-301.

Knight, Frank H. 1921. Risk, Uncertainty, and Profit. Boston, MA: Houghton Mifflin.

Knudsen and Kjeldgaard (2014), ONLINE RECEPTION ANALYSIS: BIG DATA IN QUALITATIVE MARKETING RESEARCH, Research in Consumer Behavior, Volume 16, 217_242

Kozinets, R. V. (2009). Netnography: Doing ethnographic research online. Los Angeles, CA:Sage.

Malthouse, E.C. (2007), "Mining for trigger events with survival analysis", Data Mining and Knowledge Discovery, Vol. 15 No. 3, pp. 383-402.

Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., & Byers, A. H.(2011). Big data: The next frontier for innovation, competition, and productivity. Sydney: McKinsey Global Institute.

Mayer-Scho¨nberger, V., & Cukier, K. (2013). Big data. Boston, MA: Houghton Mifflin Harcourt.

Muniz, A. M., Jr., & O'Guinn, T. C. (2001). Brand community. Journal of Consumer Research, 27(4), 412_432.

Murray, K.B. and Häubl, G. (2009), "Personalization without interrogation: towards more effective interactions between

Ngai, E. W., Xiu, L., and Chau, D. C. (2009)"Application of data mining techniques in customer relationship management: A literature review and classification," Expert systems with applications (36:2) pp 2592-2602.

Normandeau, K. (2013), "Beyond volume, variety and velocity is the issue of big data veracity", Inside BigData, available at: http://insidebigdata.com/2013/09/12/beyondvolume- variety-velocity-issue-big-data-veracity/ (accessed 15 April 2015).

Rokka, J., & Moisander, J. (2009). Environmental dialogue in online communities: Negotiating ecological citizenship among global travelers. International Journal of Consumer Studies, 33(2), 199_205. doi:10.1111/j.1470-6431.2009.00759.x