European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.9, No.18, 2017


# An Analysis of the Effect of Consumer Dissatisfaction on Negative Word of Mouth

Portia Opoku Boadi[1*] Li Guoxin[1] Philip Antwi[2]
1.School of Management, Harbin Institute of Technology, 92 West Dazhi Street, Harbin, China
2.School of Municipal & Environmental Engineering, Harbin Institute of Technology, No. 202 Haihe Road, China

*The research is financed by National Natural Science Foundation of China (Grant No. 71490722/71272173)*

**Abstract**
Consumers engage in Word of mouth for due to satisfaction or dissatisfaction. Word of mouth is a very powerful tool that can make or break an organization. A satisfied consumer will spread positive word of mouth while a consumer who is dissatisfied will spread negative word of mouth about the products and services. In this paper we test empirically to see how Xiaomi customers in China and a few other countries such as United States of America, Australia and Africa, including South Africa express their dissatisfaction level through negative word of mouth using SPSS as a means of analysis. Main findings and conclusions are discussed.
**Keywords:** Dissatisfaction, word of mouth, xiaomi, no company feedback, consumer feedback

## 1. Introduction

Consumer dissatisfaction has become a very popular topic in recent literature as previous literature focused more on consumer satisfaction. However, all the discussions and research go in different directions. With the emergence of internet and online platforms, companies have become much aware of the effect of consumer dissatisfaction on their company profile and products and they try as much as possible to satisfy their consumers. This notwithstanding, consumer dissatisfaction is an unavoidable phenomenon since every consumer is different with different expectations towards a particular product and/or service. several research have confirmed that the more satisfied a consumer is, the more loyal he is to the company and its products [1, 2] and most companies are very much aware of this phenomenon. No matter how they try to satisfy their consumers, there are still consumers who are not satisfied. M Söderlund (1998) acknowledged the deficiencies in consumer satisfaction and dissatisfaction literature in that the data used tends to be bias towards only consumers who are highly satisfied or highly dissatisfied [3].

Dissatisfaction in the mobile phone industry is a very trending issue because of the influx of different kinds and brands of mobile phones which has led to a high competition in the industry. Sometimes companies have to come up with policies that can increase consumer satisfaction. According to Oliver (1997), when consumers are dissatisfied, it means the product or service did not meet predictions prior to purchase [4]. Dissatisfaction can represent service failure as a result of incapacitation [5] and most consumers base their satisfaction or dissatisfaction of a product or service on the experience they gain after using a product or service with the experience they had previously using the same product or service and this is examined by the "confirmation-disconfirmation" theory [6]. Which means that negative disconfirmation will lead to dissatisfaction since the customer expectation was not met in comparison with the basis of judgement [7]. Thus, it is the aim of every company to satisfy its customers so as to increase the profit margin.

## 2. REVIEW OF LITERATURE AND HYPOTHESES

In this session we provide an overview of pertinent literature on consumer dissatisfaction, feedback (consumer and company) and negative word of mouth.

### 2.1 Consumer dissatisfaction

More often than not consumers who are dissatisfied tend to let others become aware of their bad experience with a product or service. This is done easily since the introduction of online platforms and customer rating websites. Some researches mostly link consumer satisfaction to positive WOM (Anderson, 1998; Chevalier & Mayzlin, 2006; Zhang, Ye, Song, & Liu, 2015). This means that dissatisfaction can lead to negative WOM, albeit, research that links dissatisfaction to negative WOM is not very steady as affirmed by Zhu and co-workers (Zhu, Zhou, & Huang, 2008). Their research found discrepancies in literature because some studies hypothesized a kind of confident correlation while others confirmed a negative or no correlation whatsoever between dissatisfaction and negative WOM. They further proposed that dissatisfaction and negative WOM are positively correlated as this is controlled by "social ties" (Zhu et al., 2008).

### 2.2 Customer and company feedback

Feedback is a very important tool in marketing and management research. Consumers usually give feedback on their experience with a product or service and companies give feedback in order to address consumer concerns. Usually feedback is intended to be a two-way affair. However, not all companies respond to consumer feedback and in most cases such companies tend to lose their customers over time, thereby decreasing their sales and profit margin. Before the consumer will give feedback, there is usually a process (Figure 1) from the point where the consumer decides the need for a product or service until feedback after the experience encountered. In most cases consumers give feedback when their experience with a product or service is usually negative, or when they are dissatisfied. Consumer feedback can be in the form of reviews and or recommendations, questions, suggestions (Chen, Wu, & Yoon, 2004; Gerdes, Stringam, & Brookshire, 2008; Kesel, 2003). In the same manner, a consumer who gives feedback after an experience will require the company to give their feedback as a way of addressing their concerns. It has been proven that consumer feedback has a significant effect on sales and this means that companies should devote special attention to feedback from consumers (Chen et al., 2004)


Figure 1: The feedback process

2.3 Word Of Mouth (WOM)

Word of mouth (WOM) is a powerful tool in communication. M Söderlund (1998) defines WOM as "the extent to which a customer informs friends, relatives and colleagues about an event that has created a certain level of satisfaction" (Söderlund, 1998). Most consumers express their satisfaction and dissatisfaction through WOM. However, research has affirmed that dissatisfied consumers tell more people about their bad experience than those who are satisfied (Fisk, Brown, Cannizzaro, & Naftal, 1990; Hart, Heskett, & Sasser Jr, 1989). WOM have also been linked to consumer purchase decisions (Basri, Ahmad, Anuar, & Ismail, 2016) as it plays a very important role is a consumer's purchase decision. WOM can be positive or negative depending on what the consumer feels after the use of a product or service. WOM has a great influence on other non-users of a particular product or service as they rely on the information given out by others who have had prior experience on the same product or service. M Söderlund again made an assumption in his research that it is less likely for a satisfied customer to spread any news about the product or service (Söderlund, 1998) and this seems very logical. But based on the assumptions of Holmes and Lett (1977) he affirmed that when the outcome of the use of a product or service is very perfect then that customer is more likely to share the good news with others (Holmes & Lett, 1977). When consumers are dissatisfied with a product, they feel so much cheated to the extent that they would not want their families and friends to encounter or go through what they have been through thus they are tempted beyond all reasonable doubts to tell the bad experience. Through social media and platforms Electronic Word of mouth (eWOM) is more useful and tends spread faster than WOM (Chu & Kim, 2011).

From the above literature and conceptual model (figure 2), we postulate the following hypotheses:

H1 Consumer dissatisfaction has a positive influence on feedback

H2 Consumer dissatisfaction positively affects negative WOM

H3 Consumer feedback sometimes attracts no company feedback

H4 No company feedback has a positive influence on negative WOM

Figure 2. Conceptual model

## 3. Workforce Sizing Plan (WOZIP)

Job-shop production refers to a manufacturing environment that produces goods in small batches according to customer specifications. Usually, one or several types of products are deliverable, while the incoming orders may differ in the design, quantity, process flow, or urgency (Henrich 2005). Flexibility is allowed in terms of switching between machines, methods, and resolving problems in production. Depending on the nature of business, each of the workers hired may need to possess a certain range of skills to handle different tasks or machines, whereas the total number of workers may be adjusted in response to the varying demand. In practice, transferability of permanent workers and recruitment of temporary or contract workers will help make such adjustment feasible, thus admitting of the idea of WOZIP.

3.1 Required Data Input

The utilisation rate of machines in a period of time, $U_t$, can be calculated as the total processing time, $t_{pro}$, over the duration of periodical review, $t_{rev}$, and the number of machines, $N_M$, on the shop floor:

$$U_t = \frac{\sum_i t_{pro,i}}{t_{rev} N_M}\ _t \quad (1)$$

As mentioned earlier, absenteeism and turnover are identified as the two major problems leading to workforce disturbance. Each type of disturbance can be quantified by its frequency and intensity of occurrence. The frequency, $f$, ascribes to how often it occurs over a period of time (e.g. one turnover in a month), whereas the intensity, $\bar{t}$, refers to the average duration it has occupied (e.g. absent for two days). With the subscript *Abs* for absence and *Tnv* for turnover, the collective disturbance rate for a period of time, $\delta_t$, is hence computed as:

$$\delta_t = \left. \frac{f_{Abs}\,\bar{t}_{Abs} + f_{Tnv}\,\bar{t}_{Tnv}}{N_W} \right|_t \tag{2}$$

Where, $N_W$ represents the number of workers in total.

The other piece of information concerned is the idling time spent by worker $j$, $t_{Idl,j}$, which indicates the degree of underutilisation of human resources. The idling rate for a period of time, $\chi_t$, is shown below:

$$\chi_t = \left. \frac{\sum_j t_{Idl,j}}{t_{rev}\,N_W} \right|_t \tag{3}$$

3.2 Forecasting and Sizing

This section relates to the data output stage. In order to labour redundancy besides negating the adverse effects of turnover and absenteeism, WOZIP is meant to estimate the number of workers for a production period based on the utilisation, disturbance, and idling rates acquired from the past period *t-1* by the Equations (1) to (3). Exponential smoothing, a common forecasting technique in operations management, is used to find the $U_t$, $\delta_t$, and $\chi_t$ rates for the coming period. The general formula for exponential smoothing:

$$F_t = F_{t-1} + \alpha\,(Y_{t-1} - F_{t-1}) \tag{4}$$

Where, $F$ and $Y$ respectively denote the forecast value and the actual value of each variable considered, and the symbol $\alpha$ is the user-defined smoothing constant.

To compute the workforce size required in the coming period, the formula is composed of the number of working machines, the three parameters stated above, and the user-defined maximum utilisation, $U_{mac}$:

$$N_{W,t} = N_M \left( \frac{U_t + \delta_t}{U_{max}} - \chi_t \right) \tag{5}$$

On a monthly basis, a numerical example is given. Let the smoothing constant be 0.30, the forecast utilisation in January be 0.80, and its actual rate be 0.75. As a result, the forecast utilisation rate for February is $U_{Feb}$ = 0.80+0.30(0.75−0.80) = 0.79. The same calculation applies to the disturbance as well as the idling rate. In the case of $U_{mac}$ = 0.80, $N_M$ = 10, and the other variables showing $\delta_t$ = 0.05 and $\chi_t$ = 0.17, the Equation (5) will give $N_{W,Feb}$ = 8.84, approximate to integer 9. This means, the month of February requires nine operators, by estimate, to run the ten machines on the production floor.

3.3 Holonic Architecture

"Architecture" means the art and science of building. A system or functional structure built up with holons is known as "holarchy", wherein the basic rules for the cooperation and limited autonomy of holons are expressed. Van Brussel *et al.* (1998) made a reference architecture called Product-Resource-Order-Staff Architecture (PROSA), whereby the HMS building blocks were categorised into three basic types of holons, namely product holon, resource holon, and order holon. In their respective functions, an order holon represents the customer order or demand information; a resource holon offers the handling as well as production capacity to fulfil the order received; a product holon holds the process and knowledge to assure the correct making of the product or decision. With this end in view, a holon can be a machine tool, a robot, a human worker, or a planning unit. Every holon must consist of an information processing part in association with the physical processing part of its own or its counterparts under the same holarchy. According to Rodriguez (2005), every holarchy is a moderated group, in which the supra-holon is the representative or moderator of the group as well as a part of the vivid interface in coordination with the local environment; meanwhile, each of the sub-holons has to play at least one role to secure its status in the supra-holon composition.

For the architecture of WOZIP, a holarchy consisting of machinery holon (MH), operational holon (OH), forecasting holon (FH), and sizing holon (ZH) is delineated in Figure 1. The WOZIP is itself regarded as the supra-holon, which allows and coordinates the information transfer as well as the interactive computing between the four sub-holons. In the normal process flow, MH (i.e. the order holon) will supply the work information based on customer specifications for OH (i.e. the resource holon) to prepare the workforce that will handle the machines. At the threshold of workforce sizing, both the MH and OH, which compose the input holon, will generate their respective data items via Equations (1) to (3), for the use of FH (i.e. the intermediate product holon) to conduct the exponential smoothing. The forecast outcomes of Equation (4) of FH will be channelled into ZH (i.e. the final product holon), which completes the procedure using Equation (5) — adjust the workforce size of OH. Essentially, the FH and ZH belong to the output holon. Some negotiation might take place around the beginning and the end of the process flow, between the MH and the customer side (i.e. the external environment) as well as between the ZH and the human resources division (i.e. the internal environment). As the whole process will repeat for every production period, a database has to be integrated into each of the holons for efficient information storage and retrieval.

**5. Conclusion**

A functional structure made up of holons is called holarchy. The holons, in coordination with the local environment, function as autonomous wholes in supra-ordination to their parts, while as dependent parts in subordination to their higher level controllers. When setting up the WOZIP, holonic attributes such as autonomy and cooperation must have been integrated into its relevant components. The computational scheme for WOZIP is novel as it makes use of several manufacturing parameters: utilisation, disturbance, and idleness. These variables were at first separately forecasted by means of exponential smoothing, and then conjointly formulated with two constant parameters, namely the number of machines and their maximum utilisation. As validated through mock-up data analysis, the practicability of WOZIP is encouraging and promising.

Suggested future works include developing a software package to facilitate the WOZIP data input and conversion processes, exploring the use of WOZIP in the other forms of labour-intensive manufacturing (e.g. flow-line production and work-cell assembly), and attaching a costing framework to determine the specific cost of each resource or to help minimise the aggregate cost of production.

**References**

Arai, T., Aiyama, Y., Sugi, M. & Ota, J. (2001), "Holonic Assembly System with Plug and Produce", *Computers in Industry* 46, Elsevier, 289-299.

Bell, G.A., Cooper, M.A., Kennedy, M. & Warwick, J. (2000), "The Development of the Holon Planning and Costing Framework for Higher Education Management", Technical Report, SBU-CISM-11-00, South Bank University, 103 Borough Road, London, SE1 0AA.

Bongaerts, L. (1998), "Integration of Scheduling and Control in Holonic Manufacturing Systems", *PhD Thesis*, PMA Division, K.U.Leuven.

Deen, S.M. (1993), "Cooperation Issues in Holonic Manufacturing Systems", *Proceedings of DIISM'93 Conference*, 410-412.

Techawiboonwong, A., Yenradeea, P. & Das, S. (2006). A Master Scheduling Model with Skilled and Unskilled Temporary Workers", *Production Economics* 103, Elsevier, 798-809.

Valckenaers, P., Van Brussel, H., Bongaerts, L. & Wyns, J. (1997), "Holonic Manufacturing Systems", *Integrated Computer Aided Engineering* 4(3), 191-201.

Van Brussel, H., Wyns, J., Valckenaers, P., Bongaerts, L. & Peters, P. (1998), "Reference Architecture for Holonic Manufacturing Systems: PROSA", *Computers in Industry* 37(3), 255-274.