Factors Affecting Intention to Control Quality Safety: Evidence Food Supply Chain Firms

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ABSTRACT

Purpose: The purpose of this study was to examine the impact of food certification, commitment and reputation on intention to control quality and safety in food supply chain firms of Pakistan. Consumers are now well aware about quality and safety measures for their better health through social media. Therefore, for the survival the food supply chain firms should have study the key variables which can build the confidence among consumers.

Design/Methodology/Approach: For obtaining the research objectives of present the primary data collected through adopted questionnaire and survey method is applied. In this study 190 employees from food supply chain firms including the middle level and lower-level employees’ voluntary filled the self-administrative questionnaire. For the analysis of gathered data the confirmatory factor analysis and multiple regression analysis were performed in AMOS version 25.

Findings: Results, of this study confirmed positive and significant impact of food certification and commitment impact on intention to control quality and safety. However, reputation did not find to have significant impact of reputation on intention to control quality and safety in food supply chain firms. In addition, the commitment is the key factor which has more significant and positive impact on intention to control quality and safety in food supply chain firm’s due higher beta and p-value.

Implications/Originality/Value: Based on limited knowledge of authors this is first study which gives insights from food supply chain firms related to intention to control quality safety.

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Introduction
The food supply chain has been facing challenges in regard of supply chain risk and quality management in the field of supply chain management (Doug, 2013; Leat and Revoredo-Giha, 2013; Whipple et al., 2009). There is concern for global food supply chain is reputation and product recall for all food supply chain related firms (Roth et al., 2008). The expired products cannot be easily traced in labs setting due to complex nature of food supply chain (Schoenherr et al., 2015). Most of times consumers are cannot detect the quality issue of food before consumption (Cho and Hooker, 2004; Malik et al., 2020). For this reason, many unexpected events happen in food supply chain and this can take place from raw material purchase to food processing as an end results quality remain question marks in that situation (Antle and Capalbo, 2001). These phenomena become more complex when the businesses are expanded at international level and uncertainty in food supply (Roth et al., 2008). Furthermore, as per discussion these issues are serious in nature in food supply chain but it has been practically observed that the a few studies have been conducted from the food quality and safety related in the academia (Poniman et al., 2015; Mena et al., 2009).

The key stakeholders’ consumers react with dissatisfaction due to this food quality and safety in food supply chain management (Roosen, 2003; Grunert, 2005). In this regard, this study will give insights from developing country Pakistan in order to address to this issue to some extent. Furthermore, the food certification and reputation are key factors for ensuring the food quality and safety in food supply chain (Hammoudi et al., 2009; Van Woerkum and van Lieshout, 2007). Therefore, a research gap will fill up through this study from in context of food supply chain in developing country, Pakistan.

Rest of paper sections are: Section 2, elaborate the theoretical framework and literature review, Section 3, discuss the methodology, Section 4 explore the results and discussion and finally Section, 5 concluding remarks and future research direction.

Theoretical Framework and Literature Review
Theoretical Framework
The present study applied the social network theory, which recommends that the all-supply chain members get benefits through mutual relationship among industry (Odongo et al., 2016). Similarly, another study by Williams and Durrance (2008), they enforced that they should be studied separately. This is how the all-supply chain members together bring the mutual benefits with result of a competitive advantage cannot be ignored (Molnár et al., 2010; Noemi, 2012). Moreover, a competitive advantage is possible through commitment, reputation and get international standards certification. In the present study all these variables are taken from this SNT theory.

Literature review and Hypothesis Development
Commitment
Commitment can be defined as getting desired objectives through mutual relationship (Moorman et al., 1993). There a few studies highlighted the importance of commitment in entire supply chain network including (Prahinski and Benton, 2004; Krause et al., 2007). In the same way, a study confirmed the positive relationship for commitment and supply chain members for better quality control and this would also decrease the costs and time involved in this rigorous process. A recent study by Odongo et al., (2016), findings revealed that the commitment is key factor for achieve control quality with mutual benefits in all perishable products likewise food supply chain. Based on this discussion, hence following alternative hypothesis have been developed:
**H1:** Commitment is positively related to intention to control quality safety in food supply chain.

**Reputation**
The word reputation can be saying as the company’s ownership for caring the end-customers (Doney and Cannon, 1997). The responsible firms usually put all efforts by developing internal policies and procedures in order to getting reputation among consumers and this reputation will force firms to maintain their intention to control quality safety in all business operations on continuous basis (Kabadayi et al., 2011; Adnan et al., 2021). A reputation is a goodwill which helps to firms for gaining the trust level from their customers and future offerings easily to be accepted by the customers due to this reputation among industry (Davies and Prince, 2005). A study by Eltantawy et al., (2009), the reputation also has positive impact on overall performance of company and similar results confirmed by Molnar et al., (2010). Thus, this hypothesis has been suggested:

**H2:** Reputation is positively related to intention to control quality safety in food supply chain.

**Food Certification**
For the better quality of products and services firms must have to adopt the strategies which reflect the safety in their operations (Michael and Louis, 2006). The food companies mostly same in nature for all them the food safety and food quality certification help them gain a competitive advantage among a competitive environment (Hammoudi et al., 2009). This food certification also makes easy job of firms in order to satisfy and meet the expectations of end-consumer on timely basis (Lutz et al., 2000). Similarly, customer can easily differentiate food quality in the food industry (Dickinson and Bailey, 2002). The firms which put efforts to get food certification usually charge the premium price of their goods and services (Roosen et al., 2003; Grunert, 2005). Therefore, the following hypothesis is suggested based above literature review:

**H3:** Food certification is positively related to intention to control quality safety in food supply chain.

**Methodology**
**Data and Sampling Method**
In this study quantitative research approach is conducted and it can be defined as the testing the relationship between variables in order to know the cause and effect among two variables (Vishnevsky & Beanlands, 2004). In order to achieve research objectives in this study primary data is gathered. Primary data can define as the information collected from the researchers related to factors to be studied (Sekaran and Bougie, 2009). The population of is those employees who are working food supply chain firm in both middle level and upper level are targeted for data collection. It is not possible for the researchers to gather the data from all respondents due to time and resource constraints (LoBiondo-Wood and Haber, 1998). Therefore, for the present thumb of rule is applied for calculation of sample size. According to rule of thumb for sample size Total number = (No of items in questionnaire x 10), so 16x10=160. However, in order to get better and reliable results the 190 respondents are considered in this study.

**Measurement of Scale**
The primary data collected through an adopted questionnaire from past studies. Questionnaire is the instrument that helps to gather the first-hand data easily from population of study. The factor food certification is measured with help 4 research items are taken from the study of (Lin et al., 2011). Items are “The government establishes strict regulations for food quality safety supervision, the government enforces severe punishments for food quality safety accidents, the government pays great attention to food quality safety supervision, the government implements the supervision of food quality safety standardization”.
The variable intention to control quality safety is adopted from the study of Lin et al., (2011) and Fouayazi et al., (2006). Research items are “The food firm intends to control food quality safety, The food firm will strongly recommend that supply chain partners control food quality safety, The food firm has a good food quality safety management system & The food firm provides high-quality food”.

The factor reputation is taken from the study Bonaiuto et al., (2017). Items are “they remain well preserved with time, they are produced in a way that respects the environment, they are subjected to food safety inspection& they contribute positively to physical health”.

Lastly, the variable commitment is adopted from the research of Daily and Huang (2001). Research items given as “Our senior managers support our efforts to improve the productivity of operations, our senior managers allocate adequate resources to environmental programs ,our senior managers support the efforts of shop-floor employees in order to reduce harmful environmental wastes & our senior managers motivate shop-floor employees to put forward suggestions which help reduce rework”.

Results and Discussion
Reliability and Validity Analysis
You can notice in Table 1 the reliability and validity analysis for the present study is concluded of all research items adopted from the previous study. For the ensuring the reliability of this study the value of Cronbach and value of composite reliability are given below. Based on these values it can be suggested that a data is reliable or not then the hypothesis can be performed in order to research objectives of this study. The highest Cronbach alpha value is .882 (food certification) and lowest Cronbach alpha value is .738 (commitment). In addition, the highest composite reliability value is .89 (food certification) and lowest composite reliability value is .74 (commitment). Therefore, the reliability of present study is obtained because the suggested value of both should be equal or greater than .70 (Hair et al., 2011).

| Table 1: Summary of Reliability Statistics |
|------------------------------------------|
| **Factor**                              | **Coding of Item** | **Research Items loading** | **Cronbach’s Alpha Value** | **Composite Reliability** | **Variance Inflation Factor (VIF)** |
|------------------------------------------|--------------------|-----------------------------|----------------------------|---------------------------|-------------------------------------|
| Food Certification                       | CF1                | .722                        |                            | .882                      | .89                                 | .66                                 |
|                                          | CF2                | .851                        |                            |                           |                                     |                                     |
|                                          | CF3                | .839                        |                            |                           |                                     |                                     |
|                                          | CF4                | .840                        |                            |                           |                                     |                                     |
| Commitment                               | C1                 | .549                        |                            | .738                      | .74                                 | .50                                 |
|                                          | C2                 | .722                        |                            |                           |                                     |                                     |
|                                          | C3                 | .570                        |                            |                           |                                     |                                     |
|                                          | C4                 | .734                        |                            |                           |                                     |                                     |
| Reputation                               | R1                 | .747                        |                            | .854                      | .86                                 | .60                                 |
|                                          | R2                 | .812                        |                            |                           |                                     |                                     |
|                                          | R3                 | .798                        |                            |                           |                                     |                                     |
|                                          | R4                 | .730                        |                            |                           |                                     |                                     |
| Intention to control quality safety      | ICQS1              | .704                        |                            | .829                      | .83                                 | .55                                 |
|                                          | ICQS2              | .792                        |                            |                           |                                     |                                     |
|                                          | ICQS3              | .819                        |                            |                           |                                     |                                     |
|                                          | ICQS4              | .647                        |                            |                           |                                     |                                     |
Hypothesis Testing
The objective of this study was to examine the impact of independent variables including food certification, commitment and reputation on dependent variable intention to control quality safety. For this purpose, the multiple regression is applied due more than 2 independent variables are taken in this study. Two important values cannot be ignored in case multiple regression analysis the beta value (determine the relationship among variables) and p-value (determine the significant impact among variables). Table 2 represents the multiple regression analysis results. Findings revealed that the food certification (Beta= 0.227, p-value= 0.020) and commitment (Beta= 0.401, p-value= 0.000) have a positive and significant impact on intention to control quality safety whereas reputation (= -0.005, p-value=.956) have a negative and insignificant impact on intention to control quality and safety.

| Dependent variable | Independent variables | Value of Beta (Standard coefficient) | Significance Value | Remarks |
|--------------------|-----------------------|--------------------------------------|--------------------|---------|
| Intention to control quality safety | Food Certification | .227 | .020 | Supported |
| | Commitment | .401 | .000 | Supported |
| | Reputation | -.005 | .956 | Not supported |
Discussion
The food certification is the in-surety to end consumer that the firm is providing the quality of products from raw material to manufacturing (Anelich & Swoffer, 2014). Furthermore, the food processing firms also ensure and design the food safety and quality in the business operations and as results consumer confidence developed for better market shares operations (Trienekens & Zuurbier, 2008; Valder, 2009). The food supply chain firms implementing the food quality and safety and gain competitive advantage into specific industry (Swoffer, 2009). The commitment from top management and employee can help to shaping the intention to quality and safety (Tachizawa et al. 2015; Chan et al., 2012). Similarly, studied conducted Green et al., (2012) also emphasized the motivation of employees and top management can make possible the intention to quality and safety within organization for building confidence among consumers. Top management can introduce this internal quality mechanism and serve as the organizational activities (Defee et al., 2009). In addition, this attitude from both employees and top management plays vital role for implementing the intention to quality and safety within firm (Defee et al., 2009). The reputation is important for social acceptance from consumers within competitive market (Bonaiuto et al., 2017; Ahmed et al., 2021). This is only possible when firms carry the all operation through continues approach for better quality and safety (Devine, 2005). The reputation may directly or indirectly push the consumers for better consumption of food (Bonaiuto et al., 2012).

Conclusion and Future Research Direction
The purpose of this to identified the impact of factors including food certification, commitment and reputation on intention to control quality and safety in food supply chain firms of Pakistan. Results, of this study confirmed positive and significant impact of food certification and commitment impact on intention to control quality and safety. However, reputation did not find to have significant impact of reputation on intention to control quality and safety in food supply chain firms. In addition, the commitment is the key factor which has more significant and positive impact on intention to control quality and safety in food supply chain firms due to higher beta and p-value.

This study’s insight will help to food supply chain firms and academia in order to understand the key factors such as food certification, commitment and reputation for intention to control the quality and safety within firms. However, the unique findings of this study reputation did not impact on intention to control the quality and safety in food supply chain firms of Pakistan. There is need of proper marketing of all environmental measure to be taken and properly educated to customers regarding environmentally friendly process to be conducted within firm.
There is always limitation in research due to time and resources constraints. First, an important variable should be added such corporate social responsibility and information sharing so on. Second, qualitative research method or mixed method to adopted in order to verify the existing findings of this study. Third, a mediation effect can be checked by more complex research model in order to add in the field of knowledge.

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