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Role of Product Characteristics on Buyer Trade Practices: Case of Small Business Firms

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Abstract: *This study deals with the effects of product characteristics (seasonality, age and shelf life) on buyers' trade approaches (cash, credit, and/or both) in developing countries using Eritrea as a case. It examines the trade approaches that the buyer firms use and evaluates if these approaches are influenced by the buyer's product characteristics. As a result, the role of product characteristics has been verified to a certain extent. The research has revealed that, seasonality and age of product matters in deciding trading practices. The findings sustain the concept that, seasonal and younger products are traded (sold and bought) more on credit compared to those that are not seasonal and older. The paper offers insights to executives of companies to govern their firms with due consideration to the role that these product characterisitcs play on buyer trade practice. Implications of these findings and future research directions are also discussed.*
Keywords: *Trade, cash, credit, product characteristics, buyer, Eritrea.*

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I. Introduction

There are three ways by which business firms can trade (sell and buy) their goods and services - using credit only, cash only and/or both with credit and cash. Trade credit can be classified depending on the nature of the debtor/creditor as well as purpose and time length of transaction. The debtor/creditor classification of credit includes business credit, individual credit, and government credit. Business credit among others includes trade credit, consumer credit, as well as short- medium- or long-term credit (McMilan& Woodruff, 1999).

Our concentration here is on the short-term trade credit, which arises when firms buy goods and services with the postponement of cash disbursement to the future. It is the exchange of goods or services on trust between a party which has the goods or services and another which needs them. Trade credit has potential benefit for the buyer (Macaulay 1963; Peel, Wilson &Howorth, 1999; Haley 1997; McMilan& Woodruff, 1999; Williamson, 1985; Bias, 1997). The buyer gets time to investigate the quality of goods before paying (quality control) and to increase its purchasing power without the need to pay cash immediately (cash management) (Pike, Cheng, Cravens, &Laminmaki, 2005; NG, Smith, & Smith, 1999; Coleman, 2003; Petersen &Rajan, 1994).

Short term investments such as inventories and receivables can be financed by retaining profits or taking short term bank loans and trade credit. As it is the case with most developing economies, the greatest short term financing problems that small firms face is lack of access to capital. Buyers face problems of access to public debt and equity markets when they are small and new firms. To solve this problem they rely on alternative sources financing such as trade credit. The buyer can also use trade credit as cash management tool (Scherr, 1996) and to bypass credit rationing by banks when it is difficult to find an alternative supplier of finance due to supplier network (Petersen &Rajan, 1994; McMillan &Woodrruf, 1999).

In this paper we argue that, the use of trade credit depends upon the prevailing characteristics of the product (such as seasonality, age and shelf life), the firm and the environment. Considerable research has been conducted to assess the determinants of trade credit. Yet, previous research has given little attention to the effect of product characteristics on business firms' trade practice in other developing countries. So far as the researchers' knowledge is concerned, there has been little research made with an objective to find out the influence of product characteristics on business firms trade practice in developing countries such as in Eritrea. Therefore, this study tries to fill in this gap by answering two questions using Eritrean firms as a case:

1. What are the trade approaches (cash, credit and/or both) used by buyer business firms in developing countries such as Eritrea in practice?
2. Do product characterisitcs (seasonality, age and shelf life) influence buyer trade approaches in the business firms?

II. Brief Literature Review

Whether a firm is to trade only on credit, on cash or both on credit and cash will depend partly upon the firm, the environment and product characteristics (Tewolde S. et al., 2015). Moreover, the main focus of this study is on the role of product characterisitcs (seasonality, age and shelf life) on buyer trade practice. Mariassunta G. (2005),argued thatthe most important product characteristic for explaining trade credit contracts is the ease with which the input can be diverted. Mariassunta G. (2005) finds that service suppliers offer as much trade credit as suppliers of differentiated goods and significantly more than suppliers of standardized products.

Furthermore, from a diversion point of view, Burkart M., et all (2005), classify goods into three categories; services, standardized goods, and differentiated goods. They argued that, services may be traded on credit because they have no collateral value but are almost impossible to divert. Standardized goods may not be traded on credit because they can easily be sold or diverted. Differentiated goods may be traded on credit because they are more often tailored to the needs of particular customers and are more difficult to divert.

This study focuses on the effect of product characterisitcs (seasonality, age and shelf life) on buyer trade practice (cash, credit and/or both). It specifically evaluates seasonality, age and shelf life of a product**.** Finally, it studies their effect on buyer's trade practice. Since it is the product which is being traded we need to understand the link between product characterisitcs and the buyers' trade approach from a finance management perspective.

In business trading an important form of credit is trade credit which in the period of a limited access to bank credit may become its substitute. Petersen, M.A. &Rajan, R.G. (1997) have found evidence suggesting that firms use more trade credit when credit from financial institutions is unavailable. They argue that suppliers lend to constrained firms because they have a comparative advantage (over banks) in getting information about buyers, they can liquidate assets more efficiently, and they have an implicit equity stake in the firms. Finally, they argue that firms with better access to credit offer more trade credit.

With respect to the demand for trade credit, research findings (Petersen &Rajan, 1997) suggest that bank credit constrained firms are more likely to resort to trade credit. Suppliers may be willing to provide trade credit to their customers (a) if they have better information about the business and the credit risk of their customers than banks and (b) if they have less problems to obtain external finance than their customers (Schwartz, 1974). According to Petersen &Rajan, 1997, Suppliers may be more willing to offer trade credit to the credit rationed firms, or they may price discriminate because they may have long-term interest in the survival of the business partner.

The financing advantage theory of trade credit asserts that suppliers may have advantages as compared to financial institutions, like banks, in offering credit (Schwartz, 1974, Petersen and Rajan, 1997). Three major sources for such advantages include: advantage in information acquisition, advantage in controlling the buyer, and advantage in salvaging value from existing buyer assets. In addition because of closer relationship with their customers, suppliers are able to gain information about their customers in a cheaper way than banks. Furthermore, suppliers use different sources of information than banks do and they are often able to seize delivered goods when customers do not pay. There is an advantage in salvaging if the supplier is able to restore the delivered good before the customer sells the goods. Another advantage is that a supplier can also stop delivering goods to its customer. If the customer has no alternative to get the goods or services, the supplier has the power to threaten its buyers.

According to price discrimination theory of trade credit, offering trade credit to specific customers may be considered as an alternative way to practice price discrimination. This is so becuase trade credit offered to specific buyers is equivalent to a reduction in input price for these buyers. Empirical evidence for the price discrimination theory of trade credit is reported by Pike, et al. (2005). There are two major reasons for using trade credit as a measure to price discriminate (Petersen &Rajan, 1997). First, in the short-run suppliers may provide trade credit as a form of price reduction to customers with a more elastic demand. Second, suppliers may have a long-run incentive to help customers which are in financial trouble because they may have an interest in the survival of customers to profit from an increase in customers' future demand.

Burkart M., et al (2005), distinguish four reasons (informational advantage, moral hazard, collateral liquidation and imperfect competition) why suppliers may be more willing than banks to finance customer purchases with trade credit. (1) Informational advantage refers to suppliers' advantage over banks to have access to superior information. (2) The moral hazard reason argues that, a supplier who is essential for the buyer's future business due to the lack of alternative producers may be willing to extend more credit than banks because the buyer is more likely to repay the supplier than to repay the bank. (3) Collateral liquidation refers to the case in defaults, where creditors are entitled to seize buyers' inventory and a repossessed input may be worth more to the supplier than to the bank because the supplier is in the business of trading that same good. (4) Under imperfect competition; supplier's opportunity cost (or forgone profits from denying a loan) is assumed to be less

than those of the bank. Burkart M., et al, 2005 and Nadiri, 1969) have also pointed out that when buyer has exhausted its bank credit limit, the supplier may find it profitable to make additional sales on credit.

The above arguments lead us to the idea that - it is the combined effect of Product characteristics and trade credit advantages that determine buyers' trade policy.

III. The Research Methodology

A cross-sectional survey research method is chosen as a preferred method for our research using descriptive approaches. Our survey generalizes the trade practice used by all business firms in Eritrea from a sample of 200 firms. We have preferred the survey approach due to its advantage over economy, speed of data collection and its advantage in identifying attributes of a population from a small group of individuals (Creswell, 1994).

For this study we have followed Bouma and Atkinson (1995) proposal. They propose an outline of three phases in the research process. The first phase requires a researcher to clarify the issues to be researched and select a research method. Based on this we selected, narrowed and formulated the problem to be studied, then we selected the research design, and devised measures for variable, set-up tables for analysis and selected the units of analysis. In the second phase we collected of data about our research question, summarized and organized the data. The third and final stage relates to our analysis and interpretation of data including relating data to the research question, drawing conclusions, assessing the limitations of the study and making suggestions for further research.

Measures

The practical implementation of our research started with the preparation of the questionnaire and execution of a pilot study on 10 respondents (firms' managers). A pilot study was done in order to test whether [a] the questionnaire would enable us to gather the desired data, and [b] the respondents understand the concepts and measurements. After conducting the pilot study and making all necessary adjustments, questionnaires were distributed to the respondents.

We distributed questionnaires to 200 firms (from the manufacturing, service and merchandising business sectors) of which 100 were sellers and 100 were buyers. Most questions provide a number of alternative answers and end-up with "others" so that the managers input their own reasoning. The 200 firms were randomly selected from the 2,205 firms of the Central Zone of Eritrea, provided by the Ministry of Industry and Trade (MoTI, 2010). The Central Zone is the most industrial region of the country. In addition to the questionnaires, data has also been collected from the firms' financial statements of five years (2004 to 2008). All respondents returned the questionnaires (100% response rate).

Managers were asked to give their opinions on their product characteristics and trade practice. They were asked (a) what trade approaches they use (cash or trade credit or both) and (b) how they apply their approaches or (c) why they do not apply otherwise. Then we studied if these approaches are influenced by product characteristics, such as sales seasonality, age in years since it was introdunced into the market and shelf life. Then we enquired if these product characteristics influence the use of trade credit in the business firms.

In administering questionnaire, data collectors were properly selected in that they all had a minimum of diploma in accounting with very good grade in working capital management. Second, they were given orientation on the objectives and data collection approaches. Third, they were given official letters introducing the researcher and themselves. Fourth, they contacted each respondent personally. On the appointment date the data collector hands over the official letters that identify the researcher and data collector. The data collector then explained the objective of the study and how the respondent can fill in and then submit the questionnaires. This may take around 30 minutes. At least one reminder call is made by the data collector a day before the date of the appointment. When collecting the questionnaire, about 15 minutes is taken to explain questions that the manager may have and appointment made for the conduct of interview. Upon collection, the questionnaire data is transferred to the data summary sheet and notes of inconsistencies or unfilled questionnaires taken.

Data that has been collected using questionnaires, interviews and archival records are summarized, described and analysed in the next section. The primary data collected using questionnaires and interviews are used to study the approaches of trade credit used by the firms. The secondary data collected from financial statements are used to study the implication of the managerial approaches particularly on liquidity and profitability.The empirical data collection is divided into (a) buyers' responses and (b) the effect of the responses on their trade approaches ("cash only", "credit only" or a combination of the two - "both on credit and cash"). Moreover, our findings clearly show that the "credit only" option is used by very insignificant number of respondent firms. So, we reframed the analysis to include a comparison between the "cash only" and the "both credit and cash".

IV. Findings

Product SeasonalityandBuyers' trade practices:-

On seasonality, we used the manager's opinion on the trend of sales of the firms' main product. Conceptually, we expected that buyers whose products are seasonal or cyclical use trade credit to minimize costs of inventory and changing production capacity and non-cyclical product firms will not have the urgency to enhance sales and purchases for seasonality purposes.

As indicated in table 1, on the basis of seasonality, 99 firms responded, of which 63% said that the purchases of their product is not seasonal and 37% said that it is seasonal. When the seasonality of the product is compared with trade practice, out of the 37 firms with seasonal product, 73% buy both on credit and cash and 27% on cash only. On the other hand from the 63 firms whose product is not seasonal 60% buy both on credit and cash, 33% buy on cash only and 2% on credit only. So, firms with seasonal products buy more on credit than cash compared to those with non-seasonal purchase.

Table 1: Seasonality and Buyers' trade practices

	Buyers' trade practice			
Product seasonality	No. of firms	**Cash**	**Credit**	**Both**
Seasonal	37(37%)	10(27%)	0	27(73%)
Not Seasonal	62(63%)	23(37%)	2(3%)	37(60%)
total	99(100%)	33(33%)	2(2%)	64(65%)

Product Ageand Buyers' trade practices:-

In order to know the age of the product, (years since introduced in market), we asked the managers "how many years it has been since their main product was introduced into the market?" On this basis the firm's main products were divided into three categories – young aged products with less than 10 years of age, average aged product with age ranging between 11 and 20 years and old/matured products the age of which is above 20 years. We expected that for old/matured products buyers may have to buy on cash because sellers of established products will not be motivated to enhance sales by trading on credit. However, for new products buyers may have fully or partially to trade on credit because sellers may be willing to sell on credit in order to introduce the product to the market and allow purchasers time to check the quality of the product before they pay for it.

As shown in table 2, on the basis of age, 57 firms responded, 37% of the buyers said that it is less than 10 years since their main product was introduced to the market, 30% said between 11 and 20 years, 33% said it was more than 20 years since their main product was introduced to the market. When the age of the product is compared with the trade practice, out of the 21 firms with youngest product, 62% buy both on credit and cash while 38% buy on cash only. On the other hand from the 17 firms whose product is average in age, 64% buy both on credit and cash and the 36% buy on cash only. From the 19 firms with old aged products, 47% buy on both credit and cash and 42% buy on cash only. So, firms with youngest products buy more on credit than cash compared to those with older products.

Table 2:Age of product vs Buyers' trade practices

	Buyers' trade practice			
Product age	No. of firms	**Cash**	**Credit**	**Both**
Young -Less than 10 Years	21(37%)	8(38%)	0	13(62%)
Average - B/n 11Years and 20 Years	17(30%)	6 (36%)	0	11(64%)
Old/Matured - More than 20 Years	19(33%)	8(42%)	2(11%)	9(47%)
Total	57(100%)	22(39%)	2(3%)	33(58%)

Product Shelf-lifeand Buyers' trade practices:-

On the issue of shelf life, perishable goods may easily be spoiled and become not marketable, so both sellers and buyers may prefer to trade on credit in order to increase sales and decrease cost of inventory. Product shelf life was divided into three categories – short shelf life or most perishable - shelf life less than 1 month, average shelf life - between 1 month and 12 months and long shelf life - more than 12 Months.

As revealed in table 3, on the basis of shelf life, 70 buyerfirms responded, 16% of them said that their main product's shelf life is less than 1 month, 14% said between 1 and 12 months, products of 70% had more than 12 months shelf life. When the shelf life of the product is compared with the trade practice, out of the 11 firms whose product has shortest shelf life, 55% buy both on credit and cash and 36% buy only cash. Furthermore from the 10 firms whose product has average shelf life, 40% buy on both credit and cash and the 60% buy on cash only. From the 49 firms with longest shelf life 66% buy on both credit and cash, and 32% buy on cash only. This means that Firms with products having shortest shelf life buy less on credit than cash compared to those products with longer shelf life.

Table 3:Shelf life of the Product vs Buyers' trade practices

	Buyers' trade practice			
Product shelf life	No. of firms	**Cash**	**Credit**	**Both**
Least shelf life - Most perishable - Less than 1 month	11(16%)	4(36%)	1(9%)	6(55%)
Average shelf life from 1 to 12 months	10(14%)	6(60%)	0	4(40%)
Long shelf life - shelf life more than 12 Months	49(70%)	16(32%)	1(2%)	32(66%)
Total	70(100%)	26(37%)	2(3%)	42(60%)

V. Discussion

When the use of trade credit is compared with the age of the product, firms with youngest products buy more on credit than cash compared to those with older products. We expected that, buyers of old/established product will trade less on credit and more on cash. As indicated in table 2 our findings support our conceptual expectations. So, our findings agree with our expectations comparatively, older products are traded less on credit compared to the youngest products.

Firms which deal with seasonal products trade (buy) more on credit compared to those products whose trade pattern is not seasonal. Comparatively, in buyer cases those that said "yes" for seasonality buy more on credit compared to those which buy on cash only. As we conceptually expected, seasonality is a possible influencing factor on the trading decisions for buyers and that firms with seasonal products buy more on credit than cash compared to those with non-seasonal purchase

When taking product shelf life as a proxy to measure trading practices, the study shows that, with buyers, the products with the longest shelf life are traded (bought) more on credit compared to the products with the shortest shelf life. Our findings with buyers do not support our conceptual expectation. We expected that products with the lowest shelf life to be traded (bought) more on credit compared to those with longest shelf life.

VI. Conclusion, Study Implications And Future Research Directions

This study has empirically examined the role of product characteristics (seasonality, age and shelf life) on buyer trade approaches in one developing country, Eritrea. Overall, our findings suggest that product seasonality and age is an important determinant of trade practice. The research has revealed that, seasonal products and younger products are traded (bought) more on credit compared to those that are not seasonal and older products. Products which are older and not seasonal are traded more on cash. The findings on product shelf life, comparatively, buyers of products with longest shelf life trade more on credit. Therefore, the findings with buyers were not expected and may need further research.

A direction for the future is to further research from a developing economy point of view, on other product characteristics, such as services, standardized goods, and differentiated goods and relate suppliers' and buyers' reasons for choosing a trade approach. Such research would then have more theoretical and practical implications on the relation among trade approaches as well as suppliers and buyer characteristics, which we have started to explore.

While this study is an important step forward in understanding the trade approaches firms use in developing countries like Eritrea, it has some limitations. First, this study was conducted in only one developing country (Eritrea) and that restricts the generalization of the findings to other developing countries. Thus, in order to generalize and validate the findings of this study, we suggest that a similar study be conducted in other developing countries. In spite of the above limitations, however, this study addresses several gaps [literature] in trade approaches that firms use in developing countries. First, this study is the first in its kind in that country. Second, this study has examined the extent to which different types of product characteristics affect the trade approaches firms use in Eritrea, which to our knowledge has not been studied. And thus, it can be seen as an important addition to the literature on the trade approaches firms use in developing countries.

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