Customer satisfaction in farmer-to-consumer direct marketing

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Abstract

The importance of direct marketing for high quality farm products has increased during the past few years. This paper analyzes the impact of customer satisfaction and its driving forces for farmer-to-consumer direct marketing and is based on a customer survey among 1,537 customers in 33 organic and conventional on-farm stores in Germany. The results emphasize the role of store atmosphere, customer service and product quality as the main factors which influence customer satisfaction.

Keywords: direct marketing, customer satisfaction, partial least square analysis, service quality, farm products

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Introduction

Farmers' direct marketing of food is a widely neglected branch of modern agribusiness marketing. It is certainly a niche market but plays a distinctive role for establishing high quality markets in the food business. Farmer-to-consumer marketing is of growing importance, not only in providing many farmers with greater net returns but also in retaining food traditions (Govindasamy et al., 1999; Kambara/Shelley, 2002). The direct contact between farmers and consumers enables both sides to boost special qualities like traditional agricultural products, organic food, denomination of origin etc. Consumer studies have revealed that purchasing at farms is typically connected with high involvement in nutrition and a more sophisticated food consumption style (Lüth, 2005). In many cases, direct marketing is also combined with farm tourism and regional developing strategies. Typically it is a small farm strategy (Govindasamy et al., 1998a). All in all, direct marketing by farmers is part of a quality oriented food culture.

This paper discusses the marketing challenge faced by farmers who work as producers as well as retailers. There are several types of farmer-to-consumer direct marketing, e. g. pick-your-own (PYO) farms, roadside stands, home delivery services, e-commerce, weekly farmers markets and community supported agriculture programs (Thilmany et al., 2006; Baer/Brown, 2006). The focus of this paper are direct farm markets, outlets located at the farm which farmers use to sell their own produce; This represent a growing segment especially in Germany (Recke/Wirthgen, 2004).

For a family farm business with high costs, low-price strategies are not suitable. In a premium market, it is important to act customer-oriented (Grunert et al., 1996) especially against the background that the strong competition in German food retailing requires a clear unique selling proposition. Thus, customer satisfaction is a necessary condition for success. Farmers typically sell to a small group of customers of which most are regular buyers. This close, personal contact with the customers provides an opportunity to build up sustainable loyalty. But often farmers have difficulties defining their own position in competition and analyzing their own strengths and weaknesses realistically.

In the retail industry customer satisfaction surveys are a standard tool for fulfilling this requirement. Nevertheless, to our knowledge the importance of customer satisfaction in the field of direct marketing has yet not been investigated in the marketing or agribusiness literature. Most small farmers do not use professional marketing tools. Therefore, this paper tries to adopt a highly developed management approach for farmers who work as retailers in direct selling. Only a few studies have dealt specifically with direct farm marketing by on-farm outlets.

Direct Marketing

In Germany, 60,000 agricultural enterprises sell their products without middlemen. Among them are approx. 14,000 professionally managed companies. For these farmers direct marketing represents the main channel of distribution. This is a portion of 3.68 % of all agricultural enterprises in Germany (approx. 380.000 enterprises). The business volume in this market is about 3-3.5 billion €. Direct farming grew considerably in the past few years (Recke/Wirthgen 2004). But with a market share of 4.4 % the importance of direct farming in the whole food retail sector in Germany is still relatively low (KPMG, 2006). In the organic food sector, direct farming is more important than in conventional retail (see Table 1). As can be seen in Table 1, farmers' share in total sales of organic food decreased from 19 to 11 % between 1997 and 2006. This indicates that, although farmer-to-consumer direct marketing is generally growing, competition is getting stronger.

Table 1. Distribution channels and market shares for organic food in Germany

Year	Sales Volume	Specialized organic shops	Conventional retailer[1]	Direct farming[2]	Health shops	Bakeries/ Butcher	Other[3]
1997	1.48 Bio. €	31 %	28 %	19 %	10 %	5 %	7 %
2006	4.60 Bio. €	23 %	49 %	11 %	5 %	5 %	7 %

1 including discounter, delicatess shop and food delivery services
2 Farmers including PYO, farmers markets and home delivery services
3 Drugstores, postage, and processing companies
Source: Kennerknecht et al., 2007; Hamm, 2007

The same trend can also be observed in other countries. For example, Thilmany and Watson (2004) describe direct marketing as an increasing segment in the US market. In 2002, 116,733 farms (from 2.1 million) were involved in direct marketing, representing 5.5 % of all farms. For a typical farm, the revenue from direct sales is very small however, the segment is fast growing (Roth, 1999). The greatest share of farms can be found in Oregon (15.9 %) and Washington (12.6 %), supported by strong institutions and involved consumers. An important segment is the growing number of farmers' markets with over 3,100 markets in the US, increasing by 79 % from 1994 to 2002 (Thilmany/Watson, 2004). In the UK, farmers markets are growing rapidly as well. From 1997 to 1999 the number of farmers markets increased from only two to a total of 120 markets. The markets open three times a week and both conventional and organic food are sold (La Trobe, 2001).

There are two main research streams dealing with farmer-to-consumer direct marketing. A first body of literature is on the supply side. This analyzes demographic characteristics of producers and the relationship between farm types and income mostly with econometric approaches (Govindasamy et al., 1999; Uva, 2002; Brown et al., 2007; Monson et al., 2007). A second research stream

investigates consumer characteristics and preferences on the basis of surveys (Gandee et al., 2003; Recke et al., 2004; Thilmany et al., 2006).

The correlation between farm characteristics and the share of farm income obtained from direct marketing channels is not very strong. Monson et al. (2007) reveal growing farm size and organic production (mainly without certification) as drivers of farmer-to-consumer marketing. High-value products, producer experience or gender have no significant impact. Uva (2002) identifies important barriers which constrain farmers' entrance in this market segment. The local competition from supermarkets, international trades, and other farmers markets as well as labor challenges (lack of labor, inadequate skills, etc.) and location are important barriers to success in direct marketing. Kambara and Shelley (2002) reveal that lack of available labor and capital in small farms is the most important obstacle to more success.

Most consumer surveys examine customers' preferences and willingness to pay (Govindasamy/Nayga, 1996; Govindasamy et al., 1998b; Henneberry/Agustini, 2004; Recke et al., 2004). Customers of on-farm markets are characterized as well educated, female, upper middle class and middle-aged. They expect high quality fresh produce; some also want to support local farms and businesses (Recke et al., 2004). On the basis of econometric analysis, Gandee et al. (2003) identify high per capita income, higher education (especially professional degrees) and farm agglomeration effects (percentage of land in farming) as determinants of an increase in direct farm marketing sales. Consumers prefer fresh, healthy, locally grown and often organic food; in addition the source of the products as well as the trust in the producers are of high relevance for consumers. Furthermore, the special social atmosphere and a warm and friendly relation between customer and farmer play an important role (La Trobe, 2001; Sommer et al., 1981). The preferred products are eggs, meat, fruits and vegetables, and potatoes (ZMP/CMA, 2002).

In Germany, 36 % of the customers of on-farm markets are intensive buyers who frequent the shops very often (more than 30 times per year) and cause 73.2 % of the sales volume. But with only €5.87 per purchasing act, these buyers only spend 12 % of their whole food expenditures in these shops. Occasional and rare buyers, each with approx. 30 %, spend more money per purchasing act but only cover a small percentage of their whole food requirements (ZMP/CMA, 2002).

To summarize: There is a considerable literature which analyzes farmers' and consumers' characteristics but only few authors pick up farmers' direct marketing from a management perspective. Besides simple checklists (for instance, Cottingham et al., 1994; Wirthgen/ Maurer, 2000) the role of farmers as retailers has rarely been analyzed. Uva (2002) shows that word of mouth communication and newspaper advertising are the most relevant marketing tools. Farmers should use different marketing channels as well, but opportunities to enhance the business are

often restricted by lack of marketing knowledge and an inconsistent market performance.

Farmer-to-consumer direct marketing is in lively competition with other store formats, e. g., supermarkets, specialized shops, and organic stores which have developed their own assortment of regional and high quality products. In Germany, most supermarkets have entered the organic marketing segment recently, introducing new articles positioned very near to traditional farm produce (Bolten et al., 2006). Small-scale producers who use direct marketing are not able to protect their market shares and the competition is getting stronger, e. g. in the organic market with more international supply (Grow/Greene, 2007). Thus, farmers should also improve their assortment and service quality. Nevertheless, little is known about the problems of farmers who also work as retailers.

Objectives

Customer satisfaction studies have been part of the standard repertoire of marketing for the past 20 years (Parasuraman et al., 1988). In the service sectors, especially the food retail industry, the high relevance of service quality for business success is recognized and examined by periodical studies, such as the American or the European Customer Satisfaction survey (Fornell et al., 1996; Juhl et al., 2002). The literature documents, in many cases, the effect of customer satisfaction on customer loyalty (Bion, 1993; Keaveney, 1995; Bloemer/de Ruyter, 1998). Furthermore, in the marketing literature the link between service quality and customer satisfaction is well discussed (Cronin/Taylor, 1992; Parasuraman et al., 1988; Olorunniwo et al., 2006). Some researchers state that customer satisfaction is an antecedent of service quality. Others treat service quality as an antecedent of customer satisfaction. Cronin and Taylor (1992) analyze the different relations and concluded that the higher the service quality the higher the customer satisfaction. All in all, authors agree that customer satisfaction has a strong impact on the success or failure of a firm. In addition, dissatisfied customers could also deter other potential customers by a negative word of mouth communication.

Different methods of measurement have been used. One commonly applied method, for example, is Silent Shopping, which is the hidden observation of sales staff by test persons. Among subjective procedures, complaint management and the explicit measurement of customer satisfaction through surveys play the largest role (Schütze, 1992).

There is a growing number of academic studies on customer satisfaction. In a recent publication, Szymanski and Henard (2001) conduct a meta-analysis. They reveal that, in general, fairness and disconfirmation are strongly related to customer satisfaction. Among the outcomes, the most relevant are preventing negative word of mouth communication and achieving repeated purchasing. The findings in

different surveys are, however, mixed. Customer satisfaction studies in food retailing are reported, for example, by Gail and Scott (1995), Bell et al. (1997), Hackl et al. (2000) and Juhl et al. (2002). The latter analyzed the relationship between customer loyalty, supermarket type and ownership structure based on the results of the European customer satisfaction study and especially Danish results. In a recent publication, Gómez et al. (2004) describe a comprehensive survey, measuring the relationships between store attributes, customer satisfaction and sales performance with data from 250 stores. They show three main antecedents of customer satisfaction in food retailing: customer service, quality of different products and value for money. Customer service is the most important determinant of overall satisfaction for US supermarkets. Bell et al. (1997) observed six dimensions of service quality in which the interpersonal and the processes dimensions have the highest impact on customer satisfaction, followed by food and physical environment. Non-core services and price only play a minor role.
A higher level of customer satisfaction is customer enthusiasm. Enthusiasm can result from emotions such as happiness or surprise. In this context quality, service and the interaction between client and staff are of special importance (Baaken, 1996; Oliver, 1997; Widlarz, 2005).

Numerous studies have specified relationships between satisfaction and positive indirect outcomes such as customer loyalty, positive word of mouth communication and repurchase intentions. Surveys which integrate direct economic benefits are less frequent. Customer satisfaction should cause profitability (Anderson et al., 1994; Berhardt et al., 2000). Homburg et al. (2005) reveal the existence of a strong, positive impact of customer satisfaction on the willingness to pay. Most empirical investigations on customer satisfaction in the food retailing industry do not address the impact of satisfaction on business performance. An important exception is the work of Gómez et al. (2004), who measured the relationship between satisfaction and sales performance with data from about 250 supermarkets of a publicly held company in the Eastern US. A regression analysis demonstrates that satisfaction explains about 13 % of sales performance.

Currently, the professional use of customer satisfaction research is limited to the global players in food retailing. The high price of professional satisfaction surveys deters most small enterprises. As far as we know, in Germany only a few independent food retailers use market research to evaluate customer satisfaction. This is problematic, considering the relevance of personal relationships for small outlets. Because of cost disadvantages, small shops can only survive by achieving high service standards. The withdrawal of small retailers from the food business, for example, butcheries or specialized cheese or fish shops, demonstrates that family-owned independent firms show substantial deficits in customer orientation. Thus, the objective of the following analysis is to reveal the driving forces of customer satisfaction as one important marketing tool. We try to determine the parameters of customer satisfaction and to investigate how various factors

contribute to customer loyalty. Customer satisfaction is of growing importance for direct farmers to withstand the increasing competition.

Study Design

The following survey represents an application of the seminal multi-item scale (SERVQUAL) developed by Parasuraman et al. (1988) for standardized surveys of service quality. SERVQUAL conceptually refers to an ex post evaluation of the perceived service elements. It is differentiated from attitude research by the actual purchase experience of the customers; thus, it builds on a comparison of customer expectations (conceptions of an ideal store) with customer experience of a specific retailer.

For measuring customer satisfaction we used the standard framework of satisfaction measurement and adopted it to the special business environment of small farm outlets and food retailing with a high degree of credence qualities. Essentially, the study is explorative in nature.

Our questionnaire consists of 13 question blocks including 53 items. The first question deals with overall customer satisfaction, followed by statements about the unique selling proposition and the respective store attributes quality of products, service quality, location, store atmosphere, etc. In most cases, the scale is a five-point Likert scale, ranging from -2 to +2. Some rating scales are also used. Altogether, 1,537 customers were questioned in 33 on-farm stores in various German regions. 10 of the farms produce organic food, and 23 sell conventional products. The average annual sales volume is about €130,500 (range €9,800-696,000). The number of employees lies between 0.5 and 11. The sales volume per square meter in average is about €3,183/m² (see Table 2). The stores which participated in the study were selected from a database, following their willingness to support the survey. Therefore, they are not representative for all farm outlets. However, the sample represents a broad spectrum of differently sized farms and various locations.

Table 2. Sample characteristics.

Characteristic	Minimum	Maximum	Average
Sales area in m²	20	1,000	107,13
Sales volume in Euro	9,800	696,000	130,500
Sales volume per m² in Euro	196	15,000	3,183
Number of articles	57	1,000	378
Number of employees	0.5	11	4.12
Customers per day	5	200	73
Advertising expenditures	0	12,600	3,000

The survey took place in the outlets with self-administered questionnaires. Answering the questionnaire took approximately 10 minutes. The clients could answer the questionnaire either at the store or at home. The completed questionnaires were collected in a box in order to keep the answers anonymous.

Methodology

The analysis is divided into two parts. First, an explorative factor analysis is used to determine the dimensions of customer satisfaction in direct marketing. Secondly, a combined measurement model is generated to measure the influence of the determined dimensions on customer satisfaction. This approach allows developing a highly valid, reliable and consistent model of measuring customer satisfaction. The second part of the analysis consists of a component-based structural equation modeling technique, the partial least squares (PLS) method. This is a combination of path analysis, principal components and regression analysis which examines the relationships between the six constructs within our research model in one single operation. PLS is especially applicable for model testing and exploratory studies (Chin, 1998b; Gefen et al., 2000). It is appropriate for complex structural models (Gefen et al., 2000) and is therefore used in this study. PLS is composed of a two-stage approach. First, the measurement model is evaluated in order to assess the reliability and validity of the measurement instruments used. Afterwards, the structural model of relationships between the constructs is tested. The statistical program used for the analyzes is SmartPLS version 2.0.M3.

Target Groups of Farmers' Direct Marketing

For direct marketing, knowledge about the customer' characteristics is necessary. There is a considerable body of literature analyzing consumer demographics for farmers markets (Govindasamy/Nayga, 1996; Kezis et al., 1998; Gandee et al., 2003; Recke et al., 2004; Thilmany et al., 2006). Typical consumers at farm outlets are well educated, female, upper middle class and middle aged.

The results of our sample confirm these trends, revealing a really outstanding target group of direct marketing. In comparison to the whole German population, customers of direct marketing are characterized by higher education and income. Nearly half of the customers are family households. Compared to conventional farms, producers of organic food have a more attractive target group with a higher income and better education. Conventional farms reach rather old customers with an average age of 51 years compared to organic stores (43 years).

Table 3. Customer profile

Characteristics	Organic farms (n=502)	Conventional farms (n=1,035)
Average Age	43 years	51 years
Share of customers with a net-household -income of more than 3.000 €	25 %	20 %
Share of customers with higher education	65 %	41 %
Share of regular customers (≥ 1x per week)	68 %	57 %
Share of customers in the neighborhood (< 5km)	42 %	46 %
Share of male customers	23 %	31 %
Share of customers with children in the household	49 %	40 %
Share of single households	13 %	9 %

Customer Satisfaction: Status Quo and Determinants

The main objective of the following section is to evaluate the status quo and the determinants of customer satisfaction for buying at an on-farm store. Generally, the degree of customer satisfaction is quite good (see Table 4). The mean of customer satisfaction on a scale from -2 (very dissatisfied) to 2 (very satisfied) is 1.66 over all involved stores; the best farm shop receives an average score of 1.88. 69 % are very satisfied, 29 % satisfied, and only 2 % are not convinced. Compared to other studies dealing with customer satisfaction in the food retail this is very high and might be explained by the high percentage of regular customers of about 60 % (see Table 3). In the conventional retail the mean of customer satisfaction is between 0.2 and 0.8 (Twardawa, 2004). To compensate the positive bias of the direct measurement of customer satisfaction an explorative factor analysis is used to determine a construct of customer satisfaction including more dimensions.

Table 4. Customer satisfaction

Variable	Mean	Standard Deviation	Minimum	Maximum
Customer satisfaction	1.66	0.537	1.18	1.88

Scale from – 2 (very dissatisfied) to + 2 (very satisfied)

Explorative Factor Analysis

The factor analysis is conducted to gain an overview of the various aspects and determinants of customer satisfaction. The explorative factor analysis is carried out by using principal component analysis and varimax rotation. Besides overall satisfaction, four further questions are integrated in the factor customer

satisfaction, explaining 59 % of the variance (KMO = 0.77; Alpha = 0.75). The customer satisfaction factor is the dependent variable in the following model.

Table 5. Factor analysis customer satisfaction

Factors	Factor loadings
This is one of the best farm outlets I have ever seen*	0.82
I feel very well in this store*	0.79
How satisfied are you with our performance?**	0.74
Shopping on this farm is an outstanding event**	0.72

*Scale from – 2 (disagree) to + 2 (agree); **scale from – 2 (very dissatisfied) to + 2 (very satisfied)
KMO = 0.77; CRA = 0.75; explained variance = 59 %

Table 6. Factor analysis determinants of customer satisfaction

Factor	Factor loadings
Evaluation of product quality (KMO = 0.81; CRA = 0.75; explained variance = 51 %)	
Quality of our products**	0,759
Freshness of the products**	0,757
Taste of the products**	0,698
Cleanliness and hygienic standard in the store**	0,696
The advice is especially competent*	0,654
Evaluation of the staff (KMO = 0.85; CRA = 0.86; explained variance = 64 %)	
Competence of the staff**	0,826
Friendliness of the staff**	0,823
Cleanliness of the staff**	0,814
Helpfulness of the staff**	0,810
Advice and service**	0,730
Evaluation of the store atmosphere (KMO = 0.67; CRA = 0.74; explained variance = 66 %)	
Interior decoration of the store**	0,851
Product presentation**	0,831
Atmosphere in the store**	0,755
Evaluation of the assortment (KMO = 0.71; CRA = 0.71; explained variance = 54 %)	
Promotion activities**	0,769
Product information**	0,738
Well-priced**	0,721
Variety**	0,716
Evaluation of the site (KMO = 0.73; CRA = 0.71; explained variance = 54 %)	
Location**	0,749
Parking places**	0,734
Sign posting**	0,730
Exterior decoration **	0,727

*Scale from – 2 (disagree) to + 2 (agree); **scale from – 2 (very dissatisfied) to + 2 (very satisfied)

The determinants of customer satisfaction are revealed via various Likert and rating scales. After some minor corrections for double loading, the second factor analysis produces five factors. All five are reliable, showing Cronbach's alpha values above 0.7.

Based on the results of the explorative factor analysis, a measurement model is developed to analyze the factors which influence customer satisfaction (see Figure 1). The model consists of the relationships between the respective constructs, the factors and the observed items (see Table 6). We assume that all observed factors of the explorative factor analysis have a positive impact on customer satisfaction. Therefore, following hypotheses were formulated.

H1   The higher the evaluation of the product quality the higher the customer satisfaction.
H2   The higher the evaluation of the staff the higher the customer satisfaction.
H3   The higher the evaluation of the store atmosphere the higher the customer satisfaction.
H4   The higher the evaluation of the assortment the higher the customer satisfaction.
H5   The higher the evaluation of the site the higher the customer satisfaction.

Besides direct effects on customer satisfaction, indirect relationships should be taken into account. The construct "staff" deals with the competence and the service orientation of the staff. The literature highlights the meaning of the interaction between the staff and the clients (see above). Due to the observed items in the other latent constructs (e.g. advice (product quality), interior and exterior decoration (atmosphere and site), and product information (assortment) an influence of the perceived customer service on the other latent constructs could be suggested.

H6a   The better the evaluation of the staff the better the evaluation of the product quality.
H6b   The better the evaluation of the staff the better the evaluation of the assortment.

H6c   The better the evaluation of the staff the better the evaluation of the site.
H6d   The better the evaluation of the staff the better the evaluation of the atmosphere.

Furthermore, the perceived atmosphere also has a positive impact on the perceived product quality and the perceived assortment.

H7a   The better the evaluation of the atmosphere the better the evaluation of the product quality.

H7b The better the evaluation of the atmosphere the better the evaluation of the assortment.

The assortment is, among others, characterized by the variety and the product information. Thus, we assume that there is a positive impact of the evaluation of the assortment on the perceived product quality.

H8 The better the evaluation of the assortment the better the evaluation of the product quality.

The site criteria construct is characterized by the external physical environment. We suggest that the perception of these criteria influences the perception of the interior physical environment.

H9 The better the evaluation of the site the better the evaluation of the atmosphere.

The marketing literature point out that satisfied customers recommend more often the shop and also buy more frequently. Therefore, we assumed a direct effect of customer satisfaction on the shopping frequency and on the word of mouth communication.

H10a The higher the customer satisfaction the higher the shopping frequency.
H10b The higher the customer satisfaction the higher the positive word of mouth communication.

Testing the Measurement Model

The fit of the measurement model is evaluated by examining the individual-item reliabilities and the internal consistency and by assessing the discriminant validity of the measurements. Individual-item reliabilities are evaluated by examining the factor loadings of the items on their respective constructs. Only items with factor loadings of at least 0.50 are considered significant and are retained in the measurement model (Hair et al., 1998). All observed items demonstrate a good level of reliability, i. e. loadings higher than 0.67 (see Appendix 1). The measurement model is presented in Table 7. The internal consistency of the different constructs is observed by calculating the composite reliabilities (CR). In this study the composite reliability of every construct in the final measurement model is higher than 0.8 (see Table 7), which is the suggested value for measures to be considered reliable (Fornell/Larcker, 1981) (similar to Cronbach's alpha (Nunnally, 1978)). Another indication of internal consistency is provided by the Cronbach's alpha value (CRA). All the constructs reveal reliability, i. e. an α higher than 0.70 (see Table 7). According to measurement theory (Fornell/Larcker, 1981), this is altogether an acceptable statistical solution for internal consistency. Also satisfactory values can

be observed for the discriminant validity (see Table 7). The AVE (average variance extracted) of all constructs in the measurement model is above 0.5. AVE is the average variance shared between a construct and its items. AVE should be higher than 0.5, meaning that at least 50 percent of measurement variance is captured by the construct (Chin, 1998a). Further, the AVE is also used for the Fornell-Larcker Criteria (Fornell/Larcker, 1981). Discriminant validity is given when the shared variance among any two constructs (i. e. the square of their intercorrelation) is less than the AVE of each construct (Fornell/Larcker, 1981). In this data analysis, there is no correlation between any two latent constructs larger than or even equal to the square root AVE of these two constructs (see Appendix 2). Consequently, discriminant validity is supported and evidence is gained that all constructs in the research model are indeed measuring different concepts.

Table 7: Assessment of the Measurement Model

Latent construct	NOI	CRA	CR	AVE
Product Quality	5	0.763	0.840	0.513
Staff	5	0.871	0.905	0.657
Atmosphere	4	0.777	0.857	0.601
Assortment	4	0.702	0.815	0.525
Site	4	0.728	0.827	0.545
Customer satisfaction	4	0.762	0.849	0.586
Word of mouth communication	1	1.000	1.000	1.000
Shopping frequency	1	1.000	1.000	1.000

NOI = Number of items; CRA = Cronbach's alpha; CR = Composite Reliability; AVE = Average variance extracted from the constructs

Testing the Structural Model

The structural model is tested to evaluate the hypothesised relationships in the proposed research model and the effects of the latent variables on customer satisfaction (see Figure 1). We use the partial least squares (PLS) method as an extension of the multiple linear regression model. The PLS estimation procedure allows explorative structural equation modeling and is especially important for customer satisfaction analysis because of the formative character of the respective factors and its ability to cope with complex models (Jacobowicz/Derquenne, 2007). The R^2 and the sign and significance of path coefficients are applied to assess the structural model. Path coefficients in PLS are analogous to the standardized beta weights in regression analysis. The corresponding t-values are assessed using the Jack-Knife method. Good structural model fits exist, when there are a sufficiently high explanatory relative power (R^2) and statistically significant t-values. A

bootstrapping method with 100 resamples is applied to evaluate the statistical significance of the path estimates.

In this model, the variance explained (R^2) for each of the endogenous variables is as follows: customer satisfaction 0.630, product quality 0.600, assortment 0.427, atmosphere 0.452, location site 0.142, word of mouth communication 0.105, and shopping frequency 0.039. Taking into account the complexity of the research model, this result is quite satisfactory (except for the last three items, i.e. location site, word of mouth communication, and shopping frequency). All together, the model explains 63 % of the total customer satisfaction.

As suggested, most of the latent constructs have a causal effect on customer satisfaction. The most important direct effect, that of atmosphere on customer satisfaction, is 0.361*** (H3). Furthermore, the perceived customer service affects the customer satisfaction more than perceived product quality and perceived assortment (H2, H1, H4). Together these constructs explain 63 % of the variance of the customer satisfaction. Site criteria do not have a direct significant effect on customer satisfaction (0.022). H5 must, therefore, be rejected.

The product quality construct is the endogenous variable of a couple of different hypotheses (H6a, H7a, H8). The results show that perceived customer service, the perceived assortment, and the perceived atmosphere have a significant influence on the perceived product quality and together explain about 60 % of the variance. The perceived customer service has with 0.404*** the highest impact on the perceived product quality.

Furthermore, the perceived customer service as an exogenous variable has a significant positive impact on the perceived assortment (0.291***), the perceived site criteria (0.377***), and the perceived atmosphere in the shop (0.416***). Hence, the hypotheses H6b, H6c, and H6d can be confirmed.

The hypothesis H7b proposed that the perceived atmosphere has a positive effect on the perceived assortment. This is supported since the model shows that the relationship is highly significant (0.444***). Together with the significant effect of the perceived customer service (H6b), 42.7 % of the perceived assortment variance could be explained.
The perceived site criteria has a significant impact on the perceived atmosphere (0.395***) (H9) and together with the customer service the variables explain about 45.2 % of the variance of the atmosphere construct.

The hypotheses H10a and H10b also can be supported through the model. Thus, customer satisfaction has a positive impact on the shopping frequency (0.196**), as well on the positive recommendation (0.324**).
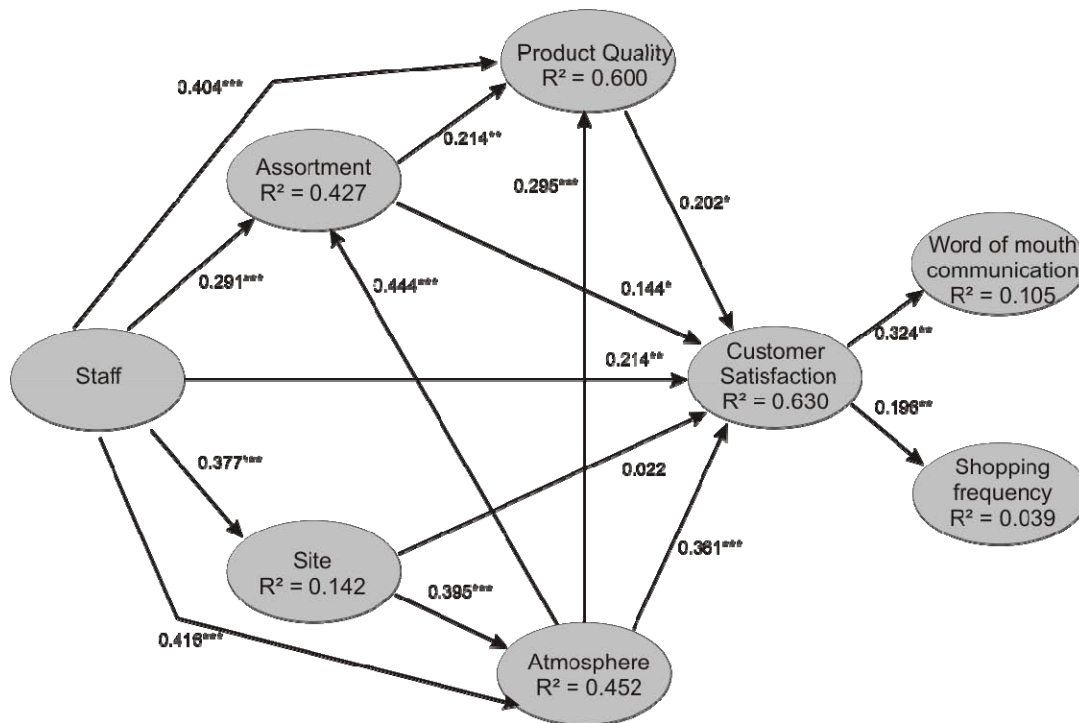
Figure 1. Structural Model
*** Significant at 0.001 level (2 t-tailed test – t > 3.291); ** Significant at 0.01 level (2 t-tailed test – t > 2.576);
* Significant at 0.05 level (2 t-tailed test – t > 1.960)

Discussion

Contrary to the literature on customer satisfaction measurement in food retailing, the results reveal the important role of the store atmosphere in the farm outlets, which is determined by the store interior and the presentation of the products (see Table 6). In several other studies which deal with service quality and customer satisfaction in the food retail as well as in the foodservice industry product quality and interaction between the staff and the customers are more important than the atmosphere (Bell et al., 1997; Gilmore/Dolezal, 2000; Gómez et al., 2004; Wall/Berry, 2007). For farm outlets, however, the latent variable "atmosphere" has the highest influence on customer satisfaction followed by the latent constructs "staff", "product quality", and "assortment". Surprisingly, site criteria do not have a significant influence in the path analysis but due to its impact on the perceived atmosphere the meaning of the site criteria should not be neglected. Furthermore, the meaning of the atmosphere for farm outlets is highlighted through its causal effect on the perceived assortment and the perceived product quality. Apparently, an attractive product presentation and interior decoration of the store lead to a better assessment of the product quality which is on the one hand influenced by sensory aspects like freshness and taste, on the other hand it is determined by the

hygienic standard in the store and the competent advice. All in all, store atmosphere stands in the core of the model.

Furthermore, customer service plays an important role, i.e. the competence and the service orientation of the staff. In addition to its direct effects on customer satisfaction the staff's work also influences overall satisfaction indirectly: namely by its impact on the judgment about food (incl. assortment and product quality) and the interior and exterior atmosphere. Direct and indirect effects all together emphasize the importance of qualified sales staff for direct marketing. Customers evaluate the farmers' assortment through four different criteria: promotion activities, price, information, and a wide choice of products. As shown in this model, price is not as relevant as it is for supermarkets (KPMG, 2006). Consumers, who prefer farm outlets, typically know that prices have to be higher compared to large scale stores (Lüth, 2005). But due to the impact of price determinants on evaluating food quality, some promotion activities and lower prices for sensitive products with high price elasticity could support the store image. The variety of articles is also a significant variable and mirrors the trend towards broader assortments in German farm outlets. Comprehensive information about product quality and origin is necessary to highlight the differences between farm produce and articles in supermarkets.

In addition to the identification of the main determinants of customer satisfaction the study demonstrates the significance of customer satisfaction for stable relationships and a long-term business success. Customer satisfaction is closely connected to word of mouth communication as the main marketing tool for farm outlets (Uva, 2002) and weakly linked to shopping frequency as an indicator of customer loyalty (Bion, 1993; Fornell et al., 1996). Satisfied customers often recommend the farm to other consumers. However, the influence of satisfaction on buying frequency is rather low. One explanation might be that some farms mainly reach tourists as customers which do not have the opportunity for regular buying.

Conclusion and Limitations

The survey has indicated that the target group of direct farming presents a good opportunity for selling high quality food. Farm customers in Germany are characterized by a high income and a clearly above average education level. From other food consumer surveys it is known that these customers are willing to pay more for special high quality products (Lüth, 2005). Therefore, direct selling can be a starting point for developing a new food culture in Germany besides the dominating discount stores.

The results provide insights into the determinants of customer satisfaction in a small business environment. Farmer-to-consumer direct marketing is a discrete business segment with its own factors of success. For successful direct marketing, it

is crucial to offer an outstanding shopping atmosphere for customers. Most of the clients are highly involved in nutrition (Recke et al., 2004). By buying farm products they fulfill their longing for an alternative to the standardized qualities in supermarkets. Farmer-to-consumer direct marketing has to respond to these expectations and the store atmosphere should demonstrate a responsible handling of food. The second most important point is competent service provided by helpful and friendly staff. Therefore, regular training in customer orientation and product knowledge could be important for employees in on-farm stores.

In contrast to the retail industry, farm outlets are not standardized but stamped with the owner's personality. Store atmosphere as well as individual service must reflect the farmer's unique approach. The store manager should create a special atmosphere that offers a positive alternative to the often cold, sterile design of modern supermarkets. The results of the survey demonstrate that most farmers are quite successful in establishing differentiating store interiors. Nevertheless, there is obvious room for improvement.

The survey is quite comprehensive concerning the amount of consumers involved but the number of stores was limited due to the ongoing status of the research project. Another limitation results from the interview situation. Self-administered questionnaires allow only a small number of questions. In particular, the integration of attitude and food-related lifestyle items would yield more opportunities to cluster the respondents. Another consequence of this procedure is that the share of regular buyers in this survey is higher with approx. 60 % of regular buyers compared to 36 % (see above). Thus, the results of the survey might be biased.

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Appendix A. Factor Loadings

Item	Statement/Question	Factor loadings
Product quality 1	Quality of our products**	0.739
Product quality 2	Freshness of the products**	0.700
Product quality 3	Taste of the products**	0.694
Product quality 4	Cleanliness and hygienic standard in the store**	0.764
Product quality 5	The advice is especially competent*	0.686
Staff 1	Competence of the staff**	0.855
Staff 2	Friendliness of the staff**	0.780
Staff 3	Cleanliness of the staff**	0.828
Staff 4	Helpfulness of the staff**	0.795
Staff 5	Advice and service**	0.797
Atmosphere 1	Interior decoration of the store**	0.850
Atmosphere 2	Product presentation**	0.813
Atmosphere 3	Atmosphere in the store**	0.737
Site 1	Location**	0.714
Site 2	Parking places**	0.714
Site 3	Sign posting**	0.702
Site 4	Exterior decoration **	0.818
Assortment 1	Promotion activities**	0.717
Assortment 2	Product information**	0.797
Assortment 3	Well-priced**	0.672
Assortment 4	Variety**	0.705
Customer Satisfaction 1	This is one of the best farm outlets I have ever seen*	0.823
Customer Satisfaction 1	I feel very well in this store*	0.816
Customer Satisfaction 1	How satisfied are you with our performance?**	0.687
Customer Satisfaction 1	Shopping on this farm is an outstanding Event**	0.728
WOM	Did you recommend shopping on our farm to friends?***	1.000
Shopping Frequency	How often do you buy foodstuff in our shop?****	1.000

*Scale from – 2 (disagree) to + 2 (agree); **scale from – 2 (very dissatisfied) to + 2 (very satisfied); *** scale from – 2 (no, I wouldn´t) to + 2 (yes, frequently); ****scale from 1 (Today, it is my first time) to 5 (several times per week); WOM = word of mouth communication

Appendix B. Discriminant Validity

	Ass	Atm	Cs	PQ	SF	Site	Staff	Woc
Ass	0.723							
Atm	0.607	0.775						
CS	0.612	0.713	0.767					
PQ	0.611	0.651	0.681	0.716				
SF	0.051	0.141	0.196	0.082	1.000			
Site	0.427	0.551	0.457	0.466	0.157	0.738		
Staff	0.541	0.564	0.642	0.685	0.141	0.377	0.811	
WOC	0.253	0.259	0.324	0.311	0.305	0.198	0.236	1.000

Ass = Assortment; Atm = Atmosphere; CS = Customer satisfaction;
PQ = Product quality; SF = Shopping frequency;
WOC = Word of mouth communication