GLOBAL QUALITY AS DETERMINANT OF CONSUMER BEHAVIOUR

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Abstract

In recent years, the analysis of consumer behaviour has become one of the central aspects of marketing strategies for every organisation. Knowing the consumer means to study in depth his habits, the social dynamics with which he is involved, his relational lifestyles and the decision-making models that lead the individual to purchase a particular product or service.

What consumption patterns can we expect to emerge in the future? Until recently, freedom of choice was mainly based on a comparison between prices and rewarding the cheaper offer paying growing attention to the functional and qualitative aspects. Yet, in the last 20 years a wide range of movements have become active in the diffusion of concepts that attribute an environmental and ethical potential to consumption.

The purpose of this paper is to demonstrate how responsible consumption has become a key factor for the choices of consumers. The dependence between overall quality and purchase intention has been tested using the method of Multiple Linear Regression for paper handkerchiefs "Viviverde" produced and distributed by a leading Italian retailer. The results of the statistical analysis confirm that "Global quality" can now be considered a determinant of the consumers purchasing behaviour.

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Riassunto

Negli ultimi anni, l'analisi del comportamento del consumatore è diventato uno degli aspetti centrali delle strategie di marketing per ogni organizzazione. Conoscere il consumatore significa studiare in profondità le sue abitudini, le dinamiche sociali con cui egli è coinvolto, i suoi stili di vita relazionale e i modelli decisionali che portano l'individuo ad acquistare un particolare prodotto o servizio.

Quali modelli di consumo possono emergere in futuro? Fino a poco tempo fà, la libertà di scelta si basava principalmente su un confronto tra i prezzi per poi premiare l'offerta più conveniente ma prestando crescente attenzione agli aspetti funzionali e qualitativi.

Eppure, negli ultimi 20 anni una vasta gamma di movimenti si sono attivati per la diffusione di concetti che attribuiscono al consumatore una capacità decisionale per gli aspetti ambientale ed etici dei prodotti e dei processi.

Lo scopo di questo lavoro è di dimostrare come il consumo responsabile è diventato un fattore chiave per le scelte dei consumatori. La dipendenza tra la qualità complessiva e l'intenzione di acquisto è stato testato con il metodo della regressione lineare multipla per i fazzoletti di carta "Viviverde" che sono prodotti e distribuiti da un importante rivenditore italiano.

I risultati delle analisi statistiche confermano che la "qualità globale" può ora considerarsi un fattore determinante del comportamento di acquisto dei consumatori.

Keywords: Global quality, Social Responsibility, Consumer behaviour, Environmental management.

Introduction

A significant change of behaviour and paradigms both of consumers and organisations, assuring more quality, transparency and “sustainable” management practices has progressively taken place. This approach derives from the knowledge that production methods can make a difference within a context of depletion for environmental, social and economic resources.

The company's top priority i.e., the essential condition for its survival is no longer determined solely by profit but also by the “client” whose conditioning factor for its next purchase is the quality of what previously purchased. For this reason it is necessary to make forecasts on the purchasing intention of customers.

"Consumer behaviour" requires a multidisciplinary approach merging different points of view of behavioural sciences amongst which: marketing, sociology, psychology, economics and social anthropology (1). It depends on five different categories of variables: *personal variables*, *economic variables, social variables, psychological variables and ethical variables* that involve moral principles combined with more traditional needs of distinction, belonging and status, which make consumption patterns one of the fertile grounds of identity construction (2).

Ethical variables are assuming great relevance because individual choices are increasingly directed to fair-trade and biological products, to informal supply networks while there is a manifest and noticeable expansion of new social movements such as *Critical consumption* and *Responsible consumption*.

Simultaneously, it is evident an ongoing change in the organisations vision since they have to satisfy the legitimate social and environmental expectations, as well as economics, of the various internal and external stakeholders. For this reason many of them have already internalised management systems and publish on a regular basis their social, environmental and sustainability reports. Other factors, such as greater awareness about consumer protection, health and environmental issues and global competition have created the need to differentiate their products, processes and services.

From this ongoing evolution, it can be deduced that currently, the quality of the product/service no longer lies only in performance but also in its responsiveness to changing customer expectations, in its environmental impact and respect for fundamental human rights throughout the life cycle of the product (3).

Aspects related to the quality of the product/service, to the effectiveness and efficiency of the internal organisation, to environmental performance, to health and safety at work and to the social responsibility of the firm, can no longer be managed in an unrelated way (4).

For this reason a new variable, belonging to the ethical class, is proposed and named *Global Quality* i.e. a "quality that satisfies a wider array of needs of the whole society, ranging from the satisfaction of needs and aspirations, respect for the environment, for workers and for the whole community, including future generations". We therefore wish to argue that this variable can influence the purchasing behaviour of consumers and it is characterised by multiple aspects that could be represented as the columns of a temple (Figure 1).

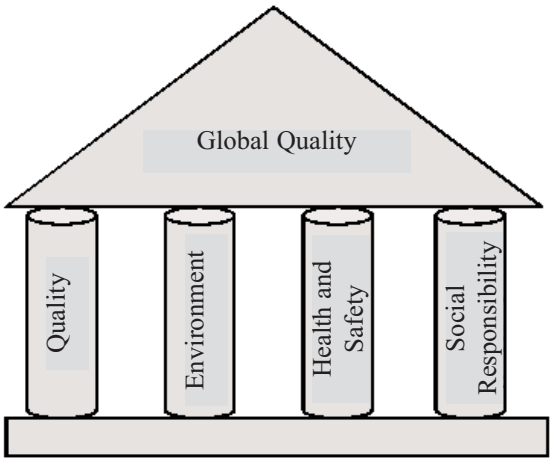

Fig. 1 - Global quality representation.

• QUALITY, meaning extrinsic or functional quality (5), which represents the set of features that make it capable of fulfilling the use as required by the market, thus satisfying needs and aspirations (6).

• ENVIRONMENT, representing environmental quality (7), which is the set of characteristics that make the product or service compatible with the environment in terms of pollution, waste disposal and hazards, in conformity with appropriate standards (8).

• HEALTH AND SAFETY understood as intrinsic or planned quality i.e., the set of features that result in product units in compliance with particular safety standards.

• SOCIAL RESPONSIBILITY or social quality, which is the set of elements that make a product/service socially responsible, respectful of the community and future generations (9).

The basic condition to achieve social excellence from organisations and consumers is the implementation of integration models for different management systems. This implies conceiving quality as a system whose constituent parts are: the quality management system, the environmental management system, the occupational health and safety management system and the social management system supported by the new standard ISO 26000 (10).

Furthermore, it is necessary that certification bodies acquire the knowledge to support this process and provide the appropriate information

to the public as to the meaning of the implementation of integrated management systems and its related guidelines.

Pursuing social excellence confers organisations several benefits both external and internal, such as image improvement and the subsequent recognition of a superior quality, with positive effects for their market share (11). This because integrated management systems represent an opportunity to differentiate themselves within the market, increasing customer satisfaction and of all involved stakeholders but also improving operational efficiency, reducing costs, promoting innovation and achieving continuous improvement (12).

Research Objective And Instrument Used

A study case was analysed to confirm the existence of this new variable and its relation to the consumers purchasing intention. This market analysis has the objective of understanding which are the elements or the characteristics that affect consumer behaviour and therefore provide confirmation of the hypothesis that Global quality, as previously defined, can be considered a determinant of sales or of its proxy that is the intention of purchase.

The case study has been analysed thanks to the collaboration of a leading Italian retailer: COOP that has always shown a good accountability for its branded products (Figure 2). In fact, it has published for many years a sustainability report that describes the impacts generated taking into account the economic, environmental and social dimensions.

Fig. 2 - Paper handkerchiefs ViviVerde COOP.

In particular, the line of products *Viviverde Coop* was created to meet the needs of Italian consumers always more attentive to health and environmental issues. Within this line, the selected product, to analyse and formulate the forecasting for the consumers purchasing intention, is a packet of paper handkerchiefs having obtained the European ecolabel.

This certifies a reduced water and atmospheric pollution, reduced greenhouse gases emissions, low electrical consumption.

After having defined the problem and the objectives of the research, the next step was to delineate the variables under study. Considering the numerous variables that influence consumer behaviour, this research focused in particular on eight variables to which, customers pay more attention when purchasing products: quality, price, ecolabels, health and safety, social responsibility, packaging, advertising and loyalty to the brand (13).

The instrument chosen is the individual survey by interview with a standard questionnaire to collect information (14).

The questionnaire distributed to individual consumers is divided in two parts: an introduction to present the person that prepared the questionnaire, to expose the research objectives, the privacy of the questionnaire and the instructions for its completion, and the second part where information is collected.

The central part of the questionnaire includes the eight items representing each one of the eight variables considered previously, where customers are invited to express their views by a degree of agreement or disagreement checking with a cross ☒ on the appropriate scale of 1 to 10 (1 being strongly disagreement while 10 is equivalent to full agreement). The questionnaire also had an open question with the number of paper handkerchiefs packets purchased in the last two months. Others sections contain socio-demographic information, glossary and a brief farewell and thanks.

Data Collection And Analysis

The survey was conducted in three points of the COOP sales network located in the towns of Lodi, Pavia and Piazzale Lodi (Milano) and on-line using the site SiS Survey. It involved a sample of 100 customers without any kind of sampling and given the typicality of the survey based on their availability.

The survey was carried out on Wednesday 17, Thursday 18 and Friday 19 of November 2010, and lasted approximately three minutes for each questionnaire completed.

After having memorised on Excel and on R[4] the gathered information, a first analysis using univariate analysis of descriptive statistics shows a clear dominance of women as consumers representing 57% of the sample against 43% for men.

The age of those questioned is mainly comprised between 66 and 85 years (37%) and the majority has completed only secondary school (59%).

This last specificity depends largely on the fact that the survey was performed during weekdays when the presence of old age individuals, that traditionally hold low level degrees, is quite large. For the same reason, 46% of those that completed the questionnaire are retired.

The second phase of the analysis was carried out using the linear regression statistical approach, which allows once identified the factors/causes (regressors X_1,X_2,…X_8) that act on a certain phenomenon (Y=response variable), specifying and measuring the relationship expressing such phenomenon (15).

The expression of the population model is:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \varepsilon$$

where: Y = average consumption or purchasing intention, x_1 = price, x_2 = functional quality, x_3 = ecolabels, x_4 = health and safety, x_5 = social responsibility, x_6 = packaging, x_7 = advertising, x_8 = loyalty to the brand.

The underlying assumptions of the model are a number of hypotheses that should be verified in order to judge its goodness and meaningfulness:
1) x_1, x_2…x_m must be known, deterministic and observed for at least m+1 values.
2) There must be a linear relationship between the dependent variable and the regressors
3) E[εi]=0.
4) Var [εi] = σ^2
5) There must be no link between the error components for different units: (ε_i,ε_j) must be uncorrelated for $i \neq j$ and thus also Cov(ε_i,ε_j) must be equal to 0.

The hypothesis assumed are somehow weak, therefore it is advisable to use the deterministic part for the forecasting because the error tends to zero.

[4] A language and environment for statistical computing and graphics

If in addition the errors are distributed as a normal with zero mean and constant variance-to-mean ratio, also the dependent variable Yi is a random variable.

Then for each x_1, x_2…xm, $\beta_0+\beta_1X_{1i}+\beta_2X_{2i}+\beta_3X_{3i}+$ ...β_mX_m is a constant. Y is a random variable that conditionally to the regressors has also normal distribution with an expected value given by our function: $E(Y|X_1,\ldots X_m)= \beta_0+\beta_1X_{1i}+\beta_2X_{2i}+\beta_3X_{3i}+\ldots\beta_mX_m$ and variance-to-mean ratio independent from regressors.

Subsequently, it is necessary to represent the data graphically by means of a matrix of scatter diagrams or scatterplot matrix. Figure 3 shows that exists a negative association between X_1 (named Q.1 in the graph) and Y i.e., individuals that assign high scores to quality present a low consumption. Instead, X_3 and Y are positively associated, which means that subjects who value as influential the presence of environmental labels, have a high average consumption and vice versa. At first sight the relationship between these variables is linear and does not show any multicollinearity.

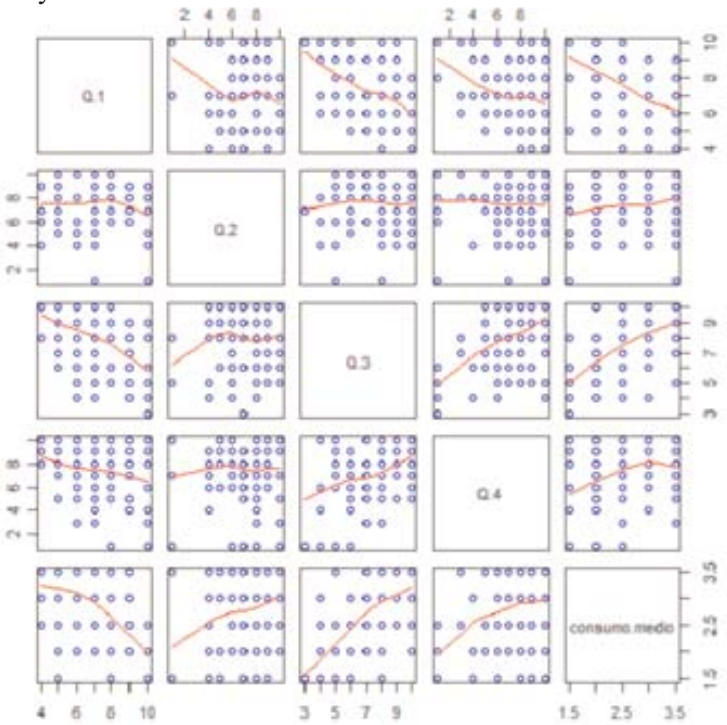

Fig. 3 - Scatterplot matrix.

Figure 4 shows the relationship between variables x_5, x_6, x_7, x_8 and average consumption; it is visible the positive association between X_5 (social responsibility) and Y (average consumption) and between X_8 (brand loyalty) and average consumption. However, the use of this graph is not suitable to investigate whether and how two or more explanatory (or independent) variables may jointly affect the response (or dependent) variable.

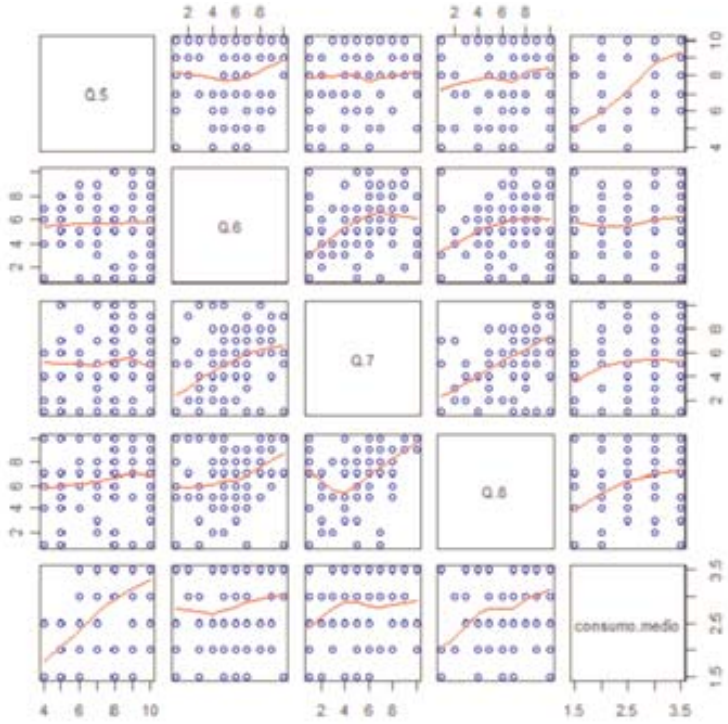

Fig. 4 - Scatterplot matrix.

The Correlation matrix quantifies the relationship between variables by using the linear correlation coefficients ρ (rho) between couples of variables. The highest linear association is that existing between average consumption and X_5 or Social responsibility with a correlation value equal to $\rho(x_9; x_5)=0.61$; follows the ecolabel $\rho(x_9;x_3) = 0.57$ while quality, as previously mentioned, has a high negative association as well as the brand loyalty showing a correlation index $\rho(x_9; x_8) = 0.33$. However, the existence of a high correlation does not imply a cause-effect relationship between two variables (16).

After analyzing the association between the variables, we have identified the Multiple regression equation with eight explanatory variables. Since, in practice, the parameters of the population are never known, the values are estimated from a finite number of sample observations. The equation is the following:

$$\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_{1,i} + \hat{\beta}_2 x_{2,i} + \hat{\beta}_3 x_{3,i} + \hat{\beta}_4 x_{4,i} + \hat{\beta}_5 x_{5,i} + \hat{\beta}_6 x_{6,i} + \hat{\beta}_7 x_{7,i} + \hat{\beta}_8 x_{8,i}$$

Where: $\hat{Y}_i$ = represents the forecast of Y for the i-th observation;
$\hat{\beta}_0$ is the constant that represents the ordinate at the origin (intercept) and indicates the point at which the straight line cuts the Y axis, namely the number of Y constants regardless of the explanatory variables. In this specific case is the number of paper handkerchiefs packets purchased per month without the influence of the explanatory variables;
β_1= slope of Y with respect to variable x_1 keeping constant variables x_2, x_3, x_4, x_5, x_6, x_7, x_8.
It represents the variation of Y for each unitary change of the variable X_1, although also takes into account the effects of other variables even if constant and ε_i=error corresponding to the i-th observation.

The technique for estimating the values of the regression coefficients (β) is called ordinary least square criterion OLS. The output of the "coefficients estimate" in R is shown in Figure 5.

The slope of consumption in relation to quality (= −0.08) reveals that given a certain amount of expenditure for all other variables (except the one under consideration) there should be 0.08% less of paper handkerchiefs packets sold for each unit increase in quality. The negative sign of the coefficient denotes an inverse relationship.

The slope of consumption in relation to corporate social responsibility ($\hat{\beta}_5$= 0.139) implies that for a given value of all other variables there should be an extra 0.139 paper handkerchiefs packets sold for each unit increase of the social responsibility factor.

```
Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.231527   0.486771   2.530   0.0131 *
Q.1         -0.087097   0.033150  -2.627   0.0101 *
Q.2          0.044876   0.024326   1.845   0.0683 .
Q.3          0.079098   0.031746   2.492   0.0145 *
Q.4         -0.024965   0.024630  -1.014   0.3135
Q.5          0.139111   0.032863   4.233  5.5e-05 ***
Q.6         -0.005082   0.021499  -0.236   0.8136
Q.7          0.004758   0.021881   0.217   0.8283
Q.8          0.049557   0.020551   2.411   0.0179 *
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4521 on 91 degrees of freedom
Multiple R-squared: 0.5637,     Adjusted R-squared: 0.5253
F-statistic:  14.7 on 8 and 91 DF,  p-value: 1.371e-13
```

Fig. 5 - Output of the "Coefficients estimate".

The positive sign of the coefficient indicates that their covariance has the same directional trend. Therefore, the forecasting equation is:

$\hat{Y}_i = 1.23 - 0.08X_{1i} + 0.04X_{2i} + +0.07X_3 - 0.02X_4 + 0.139X_5 - 0.005X_6 - 0.004X_7 + 0.04X_8$

The next step is the evaluation of the *goodness-of-fit*, which measures the ability of the model to improve the forecasting of the variable Y, considering as reference the value estimated by the regression model (alternative hypothesis H_1) rather than the mean value of Y (null hypothesis H_0). The model *fit* is evaluated by using Multiple R-squared and the estimated value is equal to 0.5637, which confirms that 57% of the variability found for paper handkerchiefs packets trade is explained by its linear relationship with the other explanatory variables.

Furthermore, a modest correlation between the dependent variable and the set of independent variables can be interpreted as a satisfactory *goodness-of-fit* degree of the model to data.

The adjusted R^2 show that 52% of consumption variability can be explained by the proposed model, taking into account the number of regressors and the sample size.

The Significance of the model is verified by means of the F-test that uses the F-statistics. The hypothesis under verification (null hypothesis H_0) is that the explained variance is equal to the residual variance, which means that the regression model does not improve the forecasted error of the dependent variable.

In other words, the null hypothesis assumes that all the β parameters are equal to zero:

$$H_0: \beta_1 = \beta_2 = \beta_3 = ... = \beta_8 = 0$$

against the alternative of having at least one of the coefficients different from zero:

$$H_1: \beta_1 = \beta_2 = \beta_3 = ... = \beta_8 \neq 0.$$

In this particular case F is equal to 14.7 and, analysing the results it can be observed that the probability value associated with the F-statistics (its p-value) is less than α (0.05), and thus rejecting the hypothesis H_0 that the model should be entirely rejected at significance level 0.05, at least one predictor variable has a value of β different from 0.

From this analysis we can deduce that the model is significant in explaining the variability of the dependent variable. Since the F-statistic is significant, it means that the contribution of the independent variables taken into account is consistent, and hence there is a linear relationship between at least one explanatory variable (functional quality, price, environment, ecolabels, health and safety, social responsibility, packaging, advertising, loyalty to the brand) and average consumption.

Finally, the ANOVA table (Analysis of Variance) shows that the variance explained by the model is greater than the variance of error. The main contribution is given by quality.

The contribution of each predictor taken individually helps to analyse whether there is a significant linear relationship between the explanatory variables and Y with a T and performing a t-test.

Therefore, if we want to determine if the variable X_1 (quality) has a significant effect on consumption, taking into account price, environment, ecolabels, safety, social responsibility, advertising and loyalty to the brand of handkerchiefs Viviverde, the null hypothesis and the alternative one are: $H_0: \beta_1 = 0$ and $H_1: \beta_1 \neq 0$.

In particular, the last column shows the values of the test statistic and the corresponding p-values, if the value of the p-value is less than α (0.05) we reject H_0 and conclude that there is a significant relationship between the variable and consumption and so for X_1, intercepts X_3, X_5, X_8, all are significant in explaining consumption.

When, instead the value of the p-value is greater than α as for X_2, X_4, X_6, X_7, then we accept H_0 and we can ratify that there is no significant

relationship between the variable and consumption. The non significant coefficients could be removed from the model, but to do that, it is necessary to estimate a reduced model, in which the explanatory variables are eliminated, and compared with the full model using the F test. The regression coefficients found for the explanatory variables: price, health and safety, packaging, and advertising were not significantly different from zero. Therefore, it is necessary to estimate the reduced model without these factors. The regression equation is:

$$\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_{1,i} + \hat{\beta}_3 x_{3,i} + \hat{\beta}_5 x_{5,i} + \hat{\beta}_8 x_{8,i}$$

and then repeating the previously performed steps. First, it is necessary to estimate the coefficients and the forecasting equation that becomes:

$$\hat{Y}_i = 1.60 - 0.09x_{1,i} + 0.07x_{3,i} + 0.12x_{5,i} + 0.06x_{8,i}$$

In the reduced model the Residual standard error obtained is 0.4543 that will be evaluated using the F test. The multiple R-squared is equal to 0.540, which proves that 54% of the sales variability for the handkerchiefs under study is explained by its linear relationship with the other explanatory variables. The Adjusted R-squared value show that 52% of the consumption variability could be explained by the reduced model, taking into account the number of regressors and the sample size.

The p-value is < 0.05 but also < 0.01 and hence the *model is significant* in explaining the variability of the dependent variable. Therefore, refusing the hypothesis H_0 that the model is not useful as a whole to explain the dependent variable, it is instead accepted the alternative hypothesis H_1 where the model explained variance is greater than the variance of error (Figure 6).

```
Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.60792    0.42898   3.748 0.000306 ***
Q.1         -0.09821    0.03270  -3.004 0.003411 **
Q.3          0.07292    0.03050   2.391 0.018770 *
Q.5          0.11985    0.02931   4.089 9.08e-05 ***
Q.8          0.05676    0.01904   2.981 0.003650 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4543 on 95 degrees of freedom
Multiple R-squared: 0.5401,     Adjusted R-squared: 0.5207
F-statistic: 27.89 on 4 and 95 DF,  p-value: 2.526e-15
```

Fig. 6 - Output of the second regression.

The F-statistic is significant, and running further calculations it is possible to assert that the variables can be excluded from the regression model and therefore the reduced model is preferable to the complete model.

The t-test shows that there is a significant relationship between the variable and consumption: intercept, X_1, X_3, X_5, X_8, are all significant in explaining consumption since we reject H.

Finally the tool to check the goodness of a regression model is the residue analysis. To test the hypothesis different graphs have been evaluated.

The residual plot in Figure 7 (scatterplot of pairs ε_i $\hat{Y}_i$) against $\hat{Y}_i$ shows how the points are distributed at random above and below the median. It can be inferred that the errors are independent and that besides the variance is constant, i.e. the residuals are homoscedastic.

In the normal probability plot the error distribution is a normal since the residual line approximates the diagonal representing this line and hence also the variable y, as previously assumed.

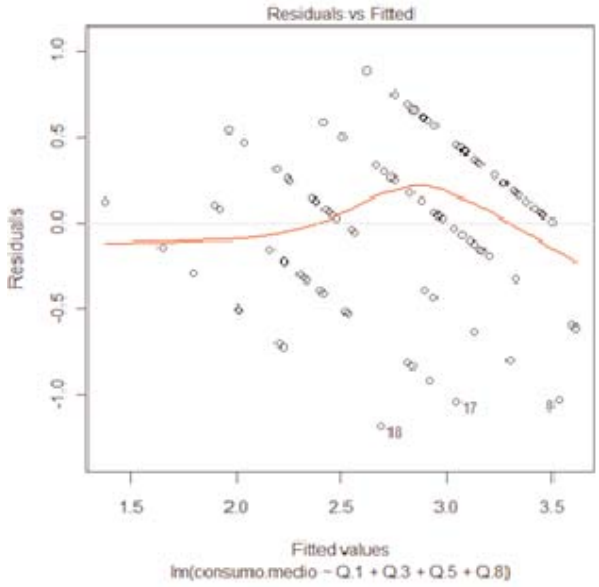

Fig. 7 - Residual plot.

The residual plot against X_{1i} (quality vs. estimated residuals), X_{3i} (eco-labelling vs. estimated residuals), X_{5i} (social responsibility vs. estimated residuals) and X_{6i} (brand loyalty vs. estimated residuals) is the

scatterplot of the pairs (Figure 8). In this case there is not a line representing them, the points are thus randomly placed while the variability of the regressor is nearly constant and the variance of the errors remains constant when changing x.

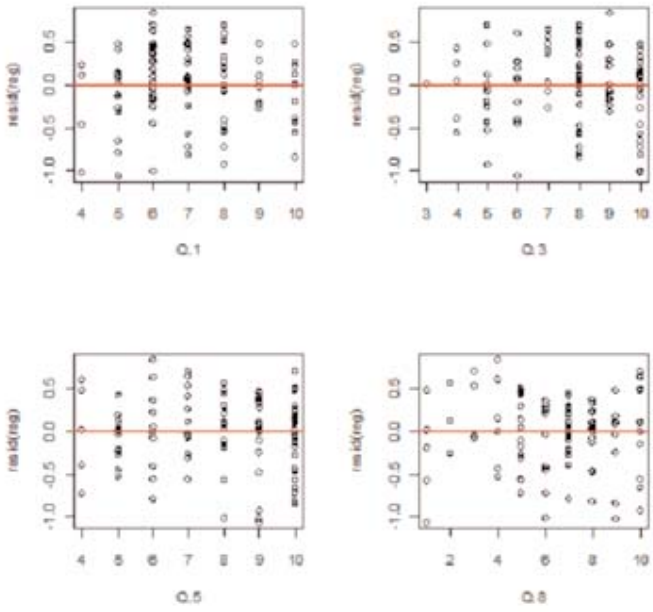

Fig. 8 - Scatterplot of the pairs.

Conclusions

The economic crisis has been the subject of various analyses on its causes, duration, possible exit mode and the ethical behaviour of organisations and managers.

In this context, although the value creation for shareholders is not in question, it becomes essential rethinking the modalities on how to create that value and the configurations that it should take in relation to the different stakeholders of the company, first of all customers. And it is precisely with them and with society that organisations communicate by means of consumption (17).

It is consumers who do the shopping and choose a product discarding another; using their "purchasing power" they can then shift the

market towards a production mode friendly towards working conditions, environment and health (18).

Purchasing in the spirit of sustainable development means considering not only the classic ratio "quality/price" but thinking of the consequences that such purchase can have on society and on he environment.

Satisfaction depends on several factors, first and foremost the quality of the product or service and influences the customers overall purchasing attitude.

The objective of this work was to demonstrate empirically the whether there is a direct or indirect link between overall quality (in its wider conception) and sales (or purchase intent). This dependence has been tested using the method of Multiple Linear Regression.

The product chosen is typically used for personal hygiene: paper handkerchiefs “Viviverde” produced and distributed by the Italian retailer COOP. The results of the statistical analysis showed that the variables that have been chosen to represent the purchasing intention were effectively correct. The most significant are quality, although through a negative relationship, the presence of environmental labels, social responsibility and brand loyalty; the less significant are price, packaging, health and safety and advertising.

The regression model was useful for forecasting (19), so that it can be used it to predict the average amount of paper handkerchiefs packets Viviverde that will be purchased the following year by assuming different scenarios:

1st scenario: a one point increase of the judgement for quality, which according to the survey has obtained an average score of 7.1, predicts for the purchasing intention:

$\hat{Y}_i$ = 1.60792 - 0.09821 (8.1) + 0.07292 (7.78)+ 0.11985(7.84) + 0.05676(6.41) = 268319

2nd scenario: a one point increase of the judgement for ecolabels, which according to the survey has obtained an average score of 7.78, predicts for the purchasing intention a value $\hat{Y}_i$ = 2.85432

3rd scenario: a one point increase of the judgement for social responsibility, which according to the survey has obtained an average score of 7.84, predicts for the purchasing intention a value $\hat{Y}_i$ = 2.90125

4th scenario: a one point increase of the judgement for brand loyalty, which according to the survey has obtained an average score of 6.41, predicts for the purchasing intention a value $\hat{Y}_i$ = 2.83816

5th scenario: a one point increase of the judgement simultaneously for both ecolabels and social responsibility, predicts for the purchasing intention a value $\hat{Y}_i$= 2.97417

From these results, it becomes evident that if organisations decide investing more in quality, would decrease the purchasing intention to 2.6 packets or a decrease of 9%.

If opting for the second scenario in which prefers to invest a larger amount of financial resources in environmental labels (e.g. extending the range of Eco-labelled products) would get a 7% increase in sales of Viviverde handkerchiefs.

If the organisation favours the 3rd scenario, i.e. increase by one point the feedback on social responsibility by allocating part of the revenues to charity projects would have an increase in sales by almost 12%. If it favours the 4th scenario, increasing the customers' loyalty with initiatives that increase brand awareness, the company would have a sales increase of 6%. The best scenario would be the 5th where the company will achieve a sales increase of 19%.

These results confirm that there is a new variable, Global quality, which can be considered a determinant of the consumers purchasing behaviour (20). This means that responsibility towards society and the environment increasingly represents a key element of *corporate governance* and in the future should become the principle to stimulate innovation in every business.

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REFERENCES

(1) Zamagni S., Georgescu-Roegen, *I fondamenti della teoria del consumatore*, Etas Libris, coll. Gli economisti, n° 9, Milano, 1979.

(2) Buacca B., *L'analisi del consumatore. Sviluppi concettuali e implicazioni di marketing*, E.G.E.A., Milano, pp. 15-60, 1990.

(3) Tedeschi M., *Il processo decisionale del consumatore, effetti di contesto e implicazioni di marketing*, Franco Angeli, Milano, pp. 50-75, 2000.

(4) Cerruti C., *La gestione globale del fattore qualità*, Pirola, Milano, pp. 19-35, 1988.

(5) Grisot D., *La gestione della qualità. Capire e applicare la norma ISO 9000*, Tecniche Nuove ed, Milano, 2006.

(6) Andreini P., *Qualità certificazione competitività, la norma iso 9001 (vision 2000) e la guida ISO 9004: la nuova frontiera della qualità*, Hoepli, Milano 2004.

(7) Gervasoni S., *Sistemi di gestione ambientale. ISO14001:96 guida pratica alla progettazione, attuazione e certificazione di un SGA*, Hoepli, Milano, 2000.

(8) D'Incognito V., *Guida allo sviluppo dei sistemi di gestione ambientale. Norma ISO 14001 ed. 2004*, Franco Angeli, Milano, 2005.

(9) Mariano L., *Responsabilità etica d'impresa. Teoria e buone pratiche*, Liguori Editore, Napoli, pp. 70-150, 2007.

(10) ISO - International Organization for Standardization, *ISO 26000:2010 - Guidance on social responsibility*, 2010

(11) Bettanti A., *Gestione della qualità. I sistemi di gestione integrati*, MG Editori, pp. 5-45, Milano, 2003

(12) Storti S., *Tecniche di audit per governare l'impresa. Sistemi di gestione per la qualità, l'ambiente la sicurezza e la responsabilità sociale*, Franco Angeli, Milano, 2006.

(13) Kotler P., Keller K. L., *Marketing management*, 12 edizione italiana a cura di Walter Scott, Paravia, pp. 300-450, Milano, 2007.

(14) Huguette Dautriat, *Il questionario. Guida per la preparazione e l'impiego dei questionari nelle ricerche sociali, di psicologia e di mercato*, Franco Angeli, Milano, 1970,

(15) Borra S., Di Ciaccio A., *Statistica. Metodologie per le scienze economiche e sociali*, McGraw Hill, Milano, 2008.

(16) Bassi F., *Analisi di mercato. Strumenti statistici per le decisioni di marketing*, Carocci, Roma, 2008

(17) Peter J. P., Donnelly J. H., *Marketing* (II ed.), McGraw-Hill, pp. 80-120, Milano, 2003.

(18) Brasini S. ET AL., *Statistica aziendale e analisi di mercato*, Mulino, Bologna, 2002.

(19) Mrbach G. ET AL., *Le previsioni. Fondamenti logici e basi statistiche*, Etaslibri, Milano 1991.

(20) East R. ET AL., *Comportamento del consumatore. Applicazioni per il marketing*, Milano, Apogeo, pp. 30-75, 2009.