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QUALITY DISCLOSURE

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Abstract

Information plays a prominent role in socio-economic systems and it can have a strategic value in relation to the decision-making process of economic agents. Due to asymmetric information, the true quality could be hidden in the market. Prices usually do not convey full information; thus, other forms of information dissemination are needed. The quality of information strongly depends on the credibility of its contents and on the reliability of the source. These problems could be mitigated by quality disclosure practices, which can be defined as the effort of an organization to systemically measure and report quality, provided that the disclosed information can be independently verified by third-party certifiers. Quality disclosure can be voluntary or mandatory and it takes many forms. Certifying firms are usually independent from the individual firms they assess, but a conflict of interest may arise when certifiers are private organizations in a competitive market, where firms pay a fee for certification services.

1. Introduction

Information plays a prominent role in socio-economic systems, but its relevance has not always been fully recognized in economic models. In 1961, George Stigler argued that «one should hardly have to tell academicians that information is a valuable resource: knowledge is power. And yet it occupies a slum dwelling in the town of economics». Although well-known, the implications of imperfect information have been ignored and have not been incorporated in economic models for a long time.

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Most of traditional settings are based on the assumption of perfect information, which means that economic operators have all information to observe the true quality and make the optimal choice. If they are also rational, they will choose the best products, and markets will reward those who make the best products with higher sales. The competitive general equilibrium model (Arrow and Debreu, 1954) is built on this setting.

A first attempt to remove the assumption of perfect information was carried out by Stigler (1961) and the Chicago School. The limit of their approach was to consider the problem only in terms of transaction costs, while holding substantially valid the results of classical theory.

The innovative work of George Akerlof (1970) brought to the attention the implications of asymmetric information in terms of **market efficiency**. He showed that imperfect information might lead to incomplete markets or, at worst, to their collapse. When quality is lacking, some participants in market are unable to make the best choice, i.e. to select the options, which best match their preferences and meet their needs. The link between quality and price breaks: they can no longer be considered the two sides of a coin. Price does not convey all information required by market. Actions and expectations become crucial.

The original results of Akerlof's research have greatly influenced the economic theory of the last 40 years and they contributed significantly to the so-called "economics of information", i.e. the strand of the economic literature, which studies how information (and information systems) may affect economic decisions.

The attention is paid not only to the amount, but also to the quality of information, which determines also its value. Quality of information may differ in consideration of some key characteristics, and notably reliability, topicality and significance. Reliability affects the confidence level of an individual in fairness and accuracy of information and it strongly depends on the credibility and reputation of the issuer. Significance deals with the perceived, pragmatic utility of information in satisfying a desire for understanding. It depends on the content of information and on the ability to influence the decision-making process of economic agents. Topicality concerns the

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synchronic availability of information in relation to the occurrence of receiver's needs: information should be available when required.

2. Asymmetric information, adverse selection and moral Hazard

Asymmetric information is generally approached through the principal-agent model, where the agent has more information, which could be partially or totally unknown to the principal. This represents a key element, which may cause two important effects: the **adverse selection** and the **moral hazard**, which can undermine market efficiency. They usually arise when agents and principals' incentives are not aligned. In particular, adverse selection can be defined as the situation in which one party in a transaction (the agent) knows some crucial elements, which the other party (the principal) ignores. These elements exist prior to the transaction and are beyond the control of the agent.

Moral hazard is a situation in which, after the conclusion of the contract, the party with more information behaves inappropriately from the perspective of the party with less information (the principal) who is not able to prevent or control the detrimental intentions and actions of the agent.

As a consequence of adverse selection and moral hazard, the average quality level in the market may fall and/or the prices increase, so that the perfect combination of quality and price breaks. Price does not convey full information and less informed individuals - who are supposed to be rational and are aware of their limited information and of the negative consequences from agents' opportunistic behaviour – may decide to exit the market.

The information problem that markets have to solve is twofold: on one hand, they need to increase the amount of available, significant information; on the other hand, they need to reach equally distributed information.

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3. Information process

But, what is information and how can we define it? The origin of the word comes from the Latin *informare*, which means to shape/model something. Therefore, information can be assumed as the representation of facts based on an abstract code, which can be understood by one or more receivers to which it is addressed. The representation shapes an idea, a concept or a notion, which are intended to manifest themselves, through the information, as hallmarks of the facts which characterize the observed object.

The basic communications model, suggested in 1949 by Shannon and Weaver, is represented by the following sequence: source → message → channel → receiver (SMCR).

The information flow starts from the source, who encodes the message and transmits it to the receiver through a channel. The message is the "logical box" or the package of meaning intended from the source. In other words, it represents what the source wants the receiver to hear and understand in a particular way. The channel identifies the means through which the message is transmitted. The receiver is the person who is at the other end of the communication and to whom the information is addressed.

The message needs to be encoded by the source and decoded by the receivers, who deduce their own meaning. The same information can be derived from multiple sources (producers, regulatory and supervisory authorities, associations, consumer and business groups, retailers, experts and individuals). It generally gets transmitted to more receivers through personal or impersonal channels.

With regard to the first type, the information flow is direct from the source to the receiver: it can be conveyed through the product[2] or the attached/connected elements

[2] We define product as the good or service produced by a public or private (or private-public) organization. It is the bundle of attributes and services that are exchanged with the good/service itself, e.g. the warranty or the post-selling assistance.

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(e.g. price, brand, warranty, guarantee, balance sheet, institutional communications).
In impersonal channels, communications are mediated by the interposition of other players (the intermediaries). They promote the dissemination and distribution of information, so that it can reach parties not directly connected to the source (e.g. television, newspaper, web, word of mouth). It must be stressed that the intermediaries could modify, filter and change the content (and thus the meaning) of the message. It must also be taken into account that the content of the information may be (and usually is) subject to regulatory constraints.
Information impacts on consumer perception, by influencing the decision-making criteria and modifying consumers' values and habits, and thus their willingness to pay. The information process is generally unidirectional, from the source to the receiver[3], but quality and marketing models clearly indicate the usefulness and the need to implement tools to listen to the market response: the information flow becomes thus bidirectional. Organizations take into account customers' needs and expectations in designing business processes and products. In addition, regulators may be influenced by market feedback in designing rules and standards too.

4. Definition and forms of quality disclosure

A special case of information transmission is represented by quality disclosure. It can be defined as the effort by an organization to systematically measure and report quality for a nontrivial percentage of products in a market (Dranove and Jin, 2010). Generally, this activity is carried out by third-party quality certification agencies, but we can also include direct quality disclosure by sellers in the definition above, provided that the disclosed information can be independently verified. This is a key point that allows to distinguish quality disclosure from broader marketing efforts by

[3] Some authors make a difference between information and communication on the basis of information flows direction. In the information process, the flow is unidirectional (from the source to the receiver), while in communication process it is bidirectional, as it also includes feedback from receivers.

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sellers or other organizations to disseminate information which cannot be assessed by a third-party certifier.

In this regard, quality ratings based on consumer feedback (see, for example, TripAdvisor) cannot be considered a mechanism of quality disclosure, essentially because ratings may be noisy or biased and consumer feedback is unverifiable. Different consumers may use different criteria to measure quality and these criteria are often implicit and unstable. In addition, those who report quality may not represent all consumers (some of them may be reluctant to leave feedback).

From disclosers' point of view, quality disclosure performs two crucial functions: (i) informing and (ii) influencing individuals to whom the information is addressed. The term "informing" underlies the effort of the issuer in transferring information about a specific fact so that receiver has access to it. The term "influencing" means the willingness to change values and behaviors of receivers.

Quality disclosure modifies the information environment of market players. Its role is especially significant when information is related to "credence" attributes, i.e. the quality attributes which the buyer cannot evaluate even after purchase and use[4]. Disclosure may be crucial in transforming attributes from "credence" to "search"[5], and in reducing information costs when attributes are of "search" type (Caswell and Anders, 2011). But, it must be stressed that not all the tools of quality disclosure are suitable for transforming the attributes in the sense indicated above, at least not with equal effectiveness. Some information can only be verified by having access to production methods or organizational models (Albersmeier *et al.*, 2009): in these cases, the use of third-party certification appears inevitable, provided that it is allowed to observe and assess the internal processes .

Quality disclosure can take many forms, which present some common characteristics (Dranove and Jin, 2010): «First, disclosure systematically measures and dis-

[4] Recalling Lancaster's approach to demand characterization and the classification of goods by Nelson (1970) and Darbi and Karni (1973), a difference could be made between search, experience and credence attributes: search attributes are those where quality can be evaluated prior to purchase, while experience attributes are those where the buyer can evaluate quality after purchase and use.

[5] Search attributes are ones that can be verified prior to purchase, through direct inspection or readily available sources. Experience attributes are ones that can be verified only after using the product.

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seminates information about product quality, which makes it attractive when other mechanisms for quality assurance are inadequate and the value of quality information when aggregated across all consumers is large relative to the costs of information collection. Second, disclosure is usually conducted via third-party certifier(s) that identify themselves separately from manufacturers. This may give consumers an impression that the disclosed information is trustworthier than seller advertising. Third, disclosure standardizes quality assessment so that results are readily comparable across sellers. Instead of granting the power of licensing to government officials, disclosure empowers consumer with information with the expectation that consumer choice will provide sufficient incentives to assure quality».

Some authors point out the conceptual differences between quality disclosure (through a credible direct claim) and quality signaling/assurance (via producer actions that influence buyers' beliefs about quality) on the basis of the marginal costs of quality information: disclosure usually does not imply significant production and issuance costs; when they exist, they are independent of quality. On the contrary, quality signaling and assurance generally assume that products of different quality are not equally expensive and that the cost of the signal is higher for low-quality producers than for the high-quality ones. But, non-disclosure firms must not be necessary seen as low-quality firms.

In the context of this analysis, we are assuming that signaling is one of the available forms of quality disclosure. This may be mandatory or voluntary. The first case occurs when a regulator authority requires market players to provide certain information about one or several specific product attributes, in a standard format, usually verified by a designated agency (a public inspection body or a private third-party organization to which public authority is given).

As regards to public services, an example of mandatory quality disclosure is given by the "quality service charters", which represent written statements of the commitment of an organization to provide its customers with a quality public service. Quality charters inform the public about the services that are available and how they can be accessed, and set the quality standards that customers can expect to find in those

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services. Reference may also be made to the reports of a government agency (the Anvur in Italy), which sets quality standards for universities and research bodies, assesses their performances and provides indication for the allocation of public funds.
With regards to food products, an example of mandatory disclosure is given by the nutritional information which producers must report on the product label.
Voluntary disclosure means that market players arbitrarily reveal information on the quality of their supply. Also in this case, the intervention of a third-party may be required, notably when disclosure is related to the compliance with private or public standards. Examples are given by the EU Protected Designation of Origin (PDO) and the Protected Geographical Indication (PGI) for agricultural products and foodstuffs; the EU EMAS quality and environment regulations for the improvement of environmental performances of organizations; the ISO process and product certification schemes. In financial markets, reference can be made to the rating report released by a credit rating agency to attest the financial sustainability and the creditworthiness of an organization.
Sellers usually decide to disclose in order to distinguish themselves from low-quality producers, assuming that consumers will infer non-disclosure as having lower quality. But, they have interest in disclosing only the information about one or some attributes, and in particular that information which may strongly influence demand. Consumers, for their part, might not be interested in all the information, especially if they bear a cost or a disadvantage from collecting, processing and storing it, but they would know some specific attributes.
Thus, it may happen that some information is hidden from the market, even though it is needed. In this case, regulatory authority could intervene to compel sellers to disclose information about selected quality dimensions, e.g. safety, health, financial sustainability...
However, finding an economic rational to mandatory disclosure is not so easy. A wide strand of literature has extensively explored this issue, but the arguments do not converge. Information efficiency and a higher social utility are the most common theoretical justifications to mandatory disclosure. However, regulatory authorities of-

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ten make use of it as an alternative type of regulation[6], in order to ensure that public policy objectives are more effectively reached. Caswell (2006) identifies four government approaches in market information[7]:

(i) "need to know": governments may judge that the public needs to know some information (e.g. safety requirements, credit rating …) in the decision-making process. In this case, information disclosure is usually mandatory;

(ii) "right to know": government may judge that the public has a right to know other information. In this case, quality disclosure is usually mandatory, by defining the minimum level of information that must be provided;

(iii) "want to know": governments may judge that the public wants to know other information. In this case, regulatory authorities may actively oversee the provision of this information when they believe that doing so will increase market efficiency. Generally, this implies the definition of standards or of minimum requirements, as the basis for voluntary disclosure;

(iv) "fraud protection": governments are responsible for protecting consumers against market deception and fraud in firms' disclosure. They may decide to monitor voluntary disclosure or enforce mandatory disclosure.

5. The role of third-party certifiers

When a third-party certifier is involved, not only should the incentives for firms to voluntary disclose quality information be taken into account, but also those for certifiers to provide an unbiased and accurate assessment.

Recent events have put a spotlight on the potential conflict of interest in certifiers. In particular, reference may be made to the controversial role of impartial arbiter played

[6] There are different approaches on the definition of regulation. A large part of literature tends to embrace a broad concept of regulation, which includes laws, formal and informal rules issued at different levels of government, private standards issued by non-governmental bodies to whom governments have given regulatory and supervisory powers.

[7] The paper refers to quality information disclosure in food markets, but the fundamental intuitions may be generalized.

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by credit rating agencies in releasing bond ratings[8]. As known, the global financial crises of 2007-2009 (**Subprime crisis**) was fuelled by subprime mortgage lending, encouraged by the **securitization** of the subprime mortgage loans, and crucial for the securitization were the favorable ratings that were bestowed on these **mortgage**-related securities by the main credit rating agencies. The debacle has been discussed extensively in several works, and notably in Acharya and Richardson (2009) and Brunnermeier (2009). In general, a conflict of interest may arise when the assessed organization selects the certification agency and pays a fee for its services. This may motivate the certifier to give excessively generous ratings in order to secure future business with customers.

Some authors stressed the role of market competition in enhancing quality ratings; others come to the conclusion that competition may even worsen the problem, because the presence of multiple certifiers encourages firms to exercise a fee pressure on certifiers.

Also, reputation may have a controversial role in solving conflicts of interest. When certifiers are numerous and certification fees tend to be the same for all of them, firms could be attracted by other attributes, such as credibility and reputation, in selecting their auditors. Reputation requires a long time to be built, but a single negative event could be sufficient to considerably damage the positive image perceived by customers. If the expected reputation costs are lower, moral hazard from certifiers prevails. It also should be underlined that, even if customers can evaluate disclosed information, they could never realize honesty and accuracy of certifiers. In addition, it should be considered that it may take a long time to distinguish errors in assessment from the intentional (strategic) manipulation, which leads to an equilibrium where certifiers take advantage of their reputation and adopt undesirable behaviors towards firms.

Sometimes reputation concerns may even drive certifiers to report biased information (Dranove and Jin, 2010). This is the case of some prudential negative ratings

[8] See Masera (2012).

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assigned to Italian public debt in the last two years by the main international credit agencies.

The business strategy of unraveling quality is usually driven by the availability of credible and low-cost mechanisms of disclosure in markets. Economic theory shows that firms are more likely to disclose if disclosure cost is lower, product quality is higher, or the expected benefits from disclosure are conditioned by quality and disclosure cost. But experience suggests that unraveling may fail to occur even at zero-cost.

6. Concluding remarks

To sum up, quality disclosure is an important tool for facilitating decision-making processes when other forms of quality signaling (for example price) are not adequate. Two fundamental conditions are required for its proper functioning: (i) the quality of information transmitted and (ii) the credibility of the source. Third-party certification may support the process, but it may face relevant complications with reference to information selection and measurement errors, consumer misunderstanding and inspector bias. There is no evidence that quality disclosure increases the quality of supply in markets, but – when the incentives are correctly addressed – it may mitigate the deleterious effects of asymmetric information.

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