

## The factors of digital shadow consumption

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Received 13 November 2015; accepted 2 February 2016

Available online 16 February 2016

### Abstract

Increasing volumes of e-trade contribute to motivation of consumers to obtain commodities and services in electronic space. At the same time, upsurge of e-trade determines rising scopes of shadow economy in respect of favourable conditions for traders and service providers to operate in e-space evading tax paying. The purpose of the article is to identify the factors of digital shadow consumption. In order to fulfil the defined purpose, the empirical research – survey of consumers (e-trade participants) – was performed. The research of the scientific literature has revealed that thus far the problem of consumers' participation in digital shadow economy has been basically analysed focusing on the impact of e-payment systems on shadow economy. Nevertheless, the rapid spread of e-services determines the changes in the concept of shadow economy itself. It remains indistinct which features indicate whether economic activities performed in e-space should be accounted or not. Widely exploited e-spaces such as social network platforms, alternative future currencies, e-trade systems, cyber computer games or online gambling terminals generate turnover of real money (or its electronic equivalent), which is not officially accounted.

The problem raised in this article is highly topical for Lithuania, where online networks as well as mobile connection systems are comparatively advanced (with reference to the data of Lithuanian Department of Statistics, the number of households possessing a computer and the Internet access made over 65% in 2013). Intense exploitation of advanced IT technologies and online networks is considered as a breeding ground for generation of digital economy, a part of which is presumed to be digital shadow. The results of the research have revealed that the most significant factors of digital shadow consumption include lower prices of products and services in digital black markets, unfavourable economic situation in the country, technological advancement, IT advantages, time saving obtaining a product/service in the local market and lack of opportunities to obtain a desired product in the local market. The majority of the consumers neither verify the status of a trader nor request (or not always request) purchase confirmation documents, which highly contributes to motivation of an illegal trader to maintain e-activities unregistered, this way escaping revenue taxation.

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*JEL classification:* E26

*Keywords:* Digital shadow economy; Digital shadow consumption; Snowball method; Factors of digital shadow consumption.

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<http://dx.doi.org/10.1016/j.intele.2016.02.002>

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## 1. Introduction

Customers' illegal activities in e-space (i.e. getting particular products or services online without paying for them or paying only a part of the decent amount) are treated as a part of digital shadow economy since this way consumers deprive a legal seller or service provider from the revenues that could have been legally earned, accounted and declared (Gaspareniene & Remeikiene, 2015). In fact, consumers' participation in digital shadow economy may determine negative consequences for different economic subjects, including legally operating companies, which experience higher operational costs due to competition with successful illegally operating traders, thus losing a significant share of potential profits, and other consumers, who lose their benefits obtaining more expensive items or services, offered on the basis of an officially registered business. Moreover, the spread of digital shadow consumption may undermine the general level of public morale and reduce society's self-consciousness.

In order to design the appropriate measures, aimed at reduction of the scopes of digital shadow consumption, first of all, it is purposeful to research the factors that determine consumers' involvement in it. The previous scientific research on the topic of consumers' participation in digital shadow economy is basically limited with the studies on e-fraud (Amasiatu & Shah, 2014; Mello, 2013; Vlachos, Minou, Assimakopoulos, & Toska, 2011; Yip, Shadbolt, Tiropanis, & Webber, 2012) and the motives of digital piracy (Amasiatu & Shah, 2014; Arli, Tjiptono, & Porto, 2015; Camarero, Anton, & Rodriguez, 2014; Sirkeci & Magnusdottir, 2011; Taylor, 2012; Vida, Koklic, Kukar-Kinney, & Penz, 2012; Williams, Nicholas, & Rowlands, 2010; Yu, Young, & Ju, 2015 and others). However, the factors of digital shadow economy have never been comprehensively researched either in national or in international levels. Identification of the factors of digital shadow consumption would not only provide the clear view of what this phenomenon refers to, but would also contribute to purposeful establishment of the measures aimed at prevention of digital shadow economy. With reference to Fullerton and Punj (2004), "an investigation of the darker side of consumers is worth in view of the considerable financial and non-financial consequences emerging as a result of their behaviors" (p. 1239). Considering the reasons explicated above, this article **is aimed** at identification of the factors of digital shadow consumption. For the fulfilment of the defined aim, the following **objectives** have been raised: (1) to analyse the theoretical literature on possible derivers of digital shadow consumption; (2) to select and present the methodology of the research; and (3) to introduce the results of the empirical research. **The methods** of the research include systematic and comparative analysis of the scientific literature, and consumer survey, carried out engaging the method of "snowball" for data collection.

## 2. Drivers of digital shadow consumption: theoretical background

Although scientific literature does not contain a precise definition of digital shadow consumption, closely related concepts such as consumer misbehaviour (Fullerton, Punj; Amasiatu, Shah, 2014), aberrant consumer behaviour (Harris, Daunt, 2011; King, Dennis, & McHendry, 2007), deviant consumer behaviour (Moschis, Cox, 1989; Siegel, 1993) or dysfunctional consumer behaviour (Harris, Daunt, 2013; Harris, Reynolds, 2003) are proposed. According to Amasiatu and Shah (2014), consumer misbehaviour may be defined as "consumer actions which violate the generally accepted norms of conduct" (p. 807), which, with reference to Moschis and Cox (1989), are formed on the basis of customs, regulations, rules, laws or social norms. Reynolds and Harris (2009) note that following their personnel benefits, consumers often behave negatively, consciously ignoring regulations of legality and disrupting functional interests of other transaction participants. Hence, it can be stated that, in its general sense, digital shadow consumption refers to benefit-driven and legal or social norms violating consumers' activities online, basically related to acquisition of products and services.

The analysis of the scientific literature has enabled to systematize theoretical drivers of digital shadow consumption (see Table 1).

As it can be seen from the data presented in Table 1, the drivers of digital shadow consumption fall into economic (market), source, social, risk, moral, technology, institutional and situational groups. Economic (or market) drivers, covering price, cost reduction and consumer benefit, have been acknowledged as the most influential. Considering price as a driver of digital shadow consumption, two different aspects must be considered. At first, online traders may offer lower prices due to lower digital business costs (absence of premise rent, staff maintenance costs, etc.). On the other hand, a substantial number of the authors established that price difference between the authentic and pirated products traded online positively influences consumers' willingness to purchase a product

Table 1  
Theoretical drivers of digital shadow consumption.

Drivers and driver groups	Research results	Scientific sources
<b>Economic (market) drivers</b>		
Price	Having the variety of options, consumers are likely to select the cheapest one	Amasiatu, Shah, 2014; Ho, Weinberg, 2011; Mikalajunas, Pebedinskaite, 2010; Vida et al., 2012; Williams et al., 2010
Cost reduction	Consumers are inclined to save money obtaining cheaper items and reduce time costs of searching and travelling to a traditional shop	Amasiatu, Shah, 2014; Ho, Weinberg, 2011; Yu et al., 2015
Consumer benefit	Convenient delivery time, after sales service, easy and simple availability of information contribute to consumers' participation in digital shadow trade	Mikalajunas, Pebedinskaite, 2010; Sirkeci, Magnusdottir, 2011; Vida et al., 2012
<b>Source drivers</b>		
Product availability	Consumers are driven by the access to particular product or service and information about it available round-the-clock	Amasiatu, Shah, 2014; Ho, Weinberg, 2011
Variety of available items	Consumers give preference to the variety of available products and services, ensured by having an access to a large number of trade sources	Sirkeci, Magnusdottir, 2011
Convenience of an acquisition channel	Simple acquisition, immediate delivery and perceived security of the source derive higher consumer utility	Ho, Weinberg, 2011; McLeod, Schell, 2007
<b>Social drivers</b>		
The contrast between personal and corporate	Doubtful copyrights of product or service seller promote digital shadow consumption	Calluzzo, Cante, 2004; Shang et al., 2008; Williams et al., 2010
Low level of public self-consciousness	Social acceptability of illegal activities online within particular social circle or society promote digital shadow consumption	Amasiatu, Shah, 2014
Social bonding	Exchanges of available resources within a community promotes delinquent consumers' behaviour	Higgins et al., 2008; Yu et al., 2015
Relativism	Interpretation of moral, cultural and social norms as non-absolute serves as an excusable factor for digital shadow consumption	Arli et al., 2015
<b>Risk drivers</b>		
Minimal investment at risk	Consumers are inclined to buy particular goods or services at lower prices online even realizing that the legality of supplier's business is doubtful	Ho, Weinberg, 2011; Waterman et al., 2007
Low fear of punishment	Low fear of punishment, determined by doubtful suppliers' copyrights and society's positive attitudes towards illegal activities online, serves as a driver to participate in digital shadow consumption	Amasiatu, Shah, 2014; Lysonski, Durvasula, 2008; Vida et al., 2012
Anonymity (deindividuation)	Anonymous connection to the sales or service provision platforms reduces the fear of punishment	Ingram, Hinduja, 2008; Williams et al., 2010
<b>Moral drivers</b>		
The apparent lack of victims	Illusion that digital shadow consumption does not cause any damage to an obvious subject makes it seem legal	Ingram, Hinduja, 2008; Wall, 2005; Williams et al., 2010
Hardly perceived magnitude of consequences	Hardly perceived damage, caused to legal sellers or service providers and the budget of the state, makes digital shadow consumption seem justifiable	Amasiatu, Shah, 2014; Chiou et al., 2005
<b>Technological drivers</b>		
Presence of opportunities	Access to IT and Internet access in consumers' environment makes digital shadow consumption an appealing and attractive option	Amasiatu, Shah, 2014; Ingram, Hinduja, 2008
<b>Institutional drivers</b>		
Poor measures of illegality discouragement	Lack of appropriate control and punitive measures in comparison to that in traditional shadow economy encourages consumers to buy illegally traded goods and services online	Levin et al., 2007

(including clothing, knitwear, DVDs, computer software) (Amasiatu, Shah, 2014; Ho, Weinberg, 2011; Mikalajunas, Pabedinskaite, 2010; Vida et al., 2012; Williams et al., 2010; Yu, Young, & Ju, 2015). For instance, Ho and Weinberg (2011), who analysed the motives of e-piracy, found that market demand is a dominant factor, driving consumers to use pirated software, i.e. even in case consumers might choose or afford either software originals or copies, they are likely to select the cheaper option of pirated software. This discloses the significance of price as a driver of digital shadow consumption. Cost reduction is basically related to consumers saving the time, which would have been spent searching for a particular item in the number of traditional shops, and the money, which would have been wasted obtaining the selected item at higher price (Amasiatu, Shah, 2014; Ho, Weinberg, 2011; Williams et al., 2010; Yu et al., 2015 and others). The drivers of consumer benefit refer to convenient delivery time, after sales service, easy and simple availability of information (Sirkeci, Magnusdottir, 2011; Vida et al., 2012) and e-communication with a supplier (Mikalajunas, Pabedinskaite, 2010).

Product availability alongside with variety of available items and convenience of an acquisition channel are considered the key source-related drivers of consumers' involvement in digital shadow economy (Amasiatu, Shah, 2014; Ho, Weinberg, 2011; Mikalajunas, Pabedinskaite, 2010; Sirkeci, Magnusdottir, 2011). Product availability usually means an opportunity for a consumer to obtain a product or service online round-the-clock. What is more, consumers have access to information about a particular product, which can be looked and evaluated at any given time. Having access to a large number of trade sources (e.g. online shops, e-forums, e-auctions, etc.), consumers are ensured a variety of the items or services available for trade. Convenience of an acquisition channel indicates acquisition simplicity (i.e. clear and understandable order, payment and delivery system) (Amasiatu, Shah, 2014; McLeod, Schell, 2007), delivery immediacy (it is hypothesized that consumers derive higher utility from a higher level of immediacy (Ho, Weinberg, 2011; Sirkeci, Magnusdottir, 2011)) and perceived security of the source (i.e. properly functioning supply website, delivery assurance, recommendations of other people in consumers' surrounding) (Sirkeci, Magnusdottir, 2011).

In the group of social drivers, scientific literature highlights the contrast between personal and corporate, low level of public self-consciousness, social bonding and relativism. The literature contains much evidence that there is a stark difference between how people behave towards individual and corporate property (Calluzzo, Cante, 2004; Shang, Chen, & Chen, 2008; Williams et al., 2010). As it was confirmed by the results of previous research (Calluzzo, Cante, 2004; Williams et al., 2010), interpretation of any property as being corporate creates the illusion that the property, actually, belongs to nobody. Such attitudes are typical of the participants, operating in digital space, where the copyrights of the sellers of digital objects are, in many cases, doubtful (Shang et al., 2008). Absence of an evident property or copyright holder, in turn, determines preconditions to believe that an object or an environment might be freely exploited without violation of anybody's rights. Low level of public self-consciousness refers to social acceptability of illegal activities online within particular social circle or society (Amasiatu & Shah, 2014). Contribution of society's positive or neutral attitudes towards undeclared purchases, downloads and e-piracy was established by Amasiatu & Shah (2014), Arli et al. (2015), Calluzzo, Cante (2004), Taylor (2012), Williams et al. (2010) and others. The drive of social bonding, highlighted by Higgins, Wolfe, and Markum (2008) and Yu et al. (2015), signifies the principle of social exchange in the community, following which community members exchange available resources with each other, i.e. selling a new or second-hand item cheaper in comparison to its price in official market (especially in case of an agreement in social forums) is considered to be a resource exchange rather than a manifestation of shadow activity. With reference to the results of their study, Higgins et al. (2008) state that delinquent consumers' behaviour is, to a large extent, determined by their social attachments and commitments. Finally, relativism is interpreted as the doctrine that knowledge as well as morality, both existing in relation to culture or society, are not absolute, thus, violation of their norms might be considered excusable (Arli et al., 2015).

The group of risk drivers covers minimal investment at risk, low fear of punishment and anonymity (deindividuation). Minimal investment at risk means that consumers are inclined to buy particular goods or services at lower prices even realizing that the legality of supplier's business is doubtful. In this case, a consumer is risking only a small amount of investment in case transaction is not completed or delivery fails (Ho & Weinberg, 2011; Waterman, Ji, & Rochet, 2007). What is more, the combination of doubtful copyrights and society's positive attitudes towards illegal activities online determines low fear of punishment, which serves as

an additional driver to participate in digital shadow consumption (Amasiatu & Shah, 2014; Lysonski & Durvasula, 2008; Vida et al., 2012). Anonymity of the participants (connection to sales or service provision platforms by engaging invented users names) decreases the perceived risk even further (Ingram & Hinduja, 2008; Williams et al., 2010).

The apparent lack of victims and hardly perceived magnitude of consequences compose the group of moral drivers of digital shadow consumption. Anonymity of suppliers alongside with difference between personal and corporate create the illusion that the act does not make damage to any obvious subject (Ingram & Hinduja, 2008; Wall, 2005; Williams et al., 2010). Consequently, consumers hardly perceive the magnitude of their actions (Amasiatu & Shah, 2014; Chiou, Huang, & Lee, 2005), for instance, deprivation of legal service providers and sellers from the revenues, which could have been legally earned, accounted and declared, or tax losses in the budget of the state.

In the group of technological drivers, the scientists highlight presence of opportunities, basically referring to availability (use and control) of technologies in consumers' environment (e.g. university, work, home) (Amasiatu, Shah, 2014; Ingram, Hinduja, 2008). Having an access at hand, no additional efforts are required to obtain a desired item or service.

Finally, poor measures of illegality discouragement, i.e. meager risk of prosecution for illegal activities, determined by the lack of clearly established appropriate control and punitive measures in comparison to that in traditional shadow economy, serves as an institutional driver of digital shadow consumption (Levin, Dato-on, & Manolis, 2007).

Summarizing, it should be noted that digital shadow consumption is typically driven by higher customer satisfaction, generated by acquisition of a desired product or service at lower costs, wide variety of e-stock, quicker and convenient delivery, social acceptability of illegal activities online, minimal investment at risk and low fear of punishment, the apparent lack of action victims and easy access to IT and the Internet in consumers' environment. Considering the impact of macroeconomic factors, such as economic situation in the country (high rate of unemployment, low wages), accessibility of economic activities for physical and juridical entities, technological advancement and spread of financial innovations, on the overall demand (including the demand for products and services traded online), these factors will also be proposed for consumers' evaluation in the empirical research.

### 3. The methodology of the research

Although the analysed field of digital shadow economy shows the tendencies of rapid expansion, consumers' behaviour while obtaining products and services in e-space still earns insufficient scientific consideration, and remains a comparatively new topic of economic studies. With a purpose to research the phenomenon of digital shadow consumption from consumers' point of view, the following objectives have been raised: (1) to identify the factors of digital shadow consumption; and (2) to establish the distribution channels, most commonly engaged for digital shadow consumption.

In the first stage of the empirical research, the questionnaire for consumer survey was prepared, leaning on the results of the scientific literature analysis. The questionnaire was composed of three structural parts: information on respondents' demographic characteristics, the factors that determine the demand to obtain products and services from digital shadow market (evaluation of the proposed factors in Likert scale, where rank 1 stands for the lowest (I completely disagree), and rank 5 – for the highest (I completely agree) possible evaluation), and establishment of the most commonly engaged distribution channels. The questionnaire was designed in e-space, thus it was available to potential respondents by the Internet and smart phones. The results of the survey were processed engaging SSPS (Statistical Package for Social Sciences) and Microsoft Excel software.

Estimating the size of the sample, it was presumed that there are 3000000\*0,66~2000000 Internet users in Lithuania. To ensure 5% error rate, approximately 400 (384) respondents have to be surveyed (Internet survey system calculator, available at the address <http://www.surveysystem.com/sscalc.htm>, was engaged). Since 260 of the respondents were available for the survey, the error rate increased by 6.08%.

The survey was carried out during the period of August – November, 2015, following the principles of “snow-ball” data collection method. It was established (Duncan, White, & Nicholson, 2003; Vershinina & Rodionova, 2011) that performing the surveys of hidden populations (including participants of traditional or digital shadow

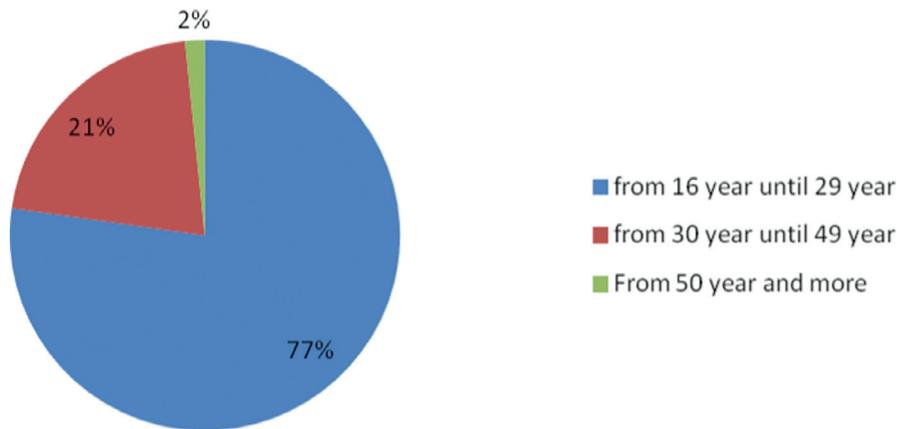


Fig. 1. Distribution of the respondents by age groups, percent.

economies), the basic problems faced by researchers cover accessibility of the target population and the size of the survey sample. Having performed the comparative analysis of traditional data collection methods, [Duncan et al. \(2003\)](#), [Vershinina, Barrett, and Meyer \(2009\)](#), and [Vershinina and Rodionova \(2011\)](#) found that engagement of such methods as personal interviews, online and phone interviews, and (e-)mailing of questionnaires does not ensure an appropriate formation of the target sample since only the respondents, who are accessible to a researcher during the period of the research, are surveyed optimising the research costs. However, these respondents not necessarily represent the ones disposing the most qualitative data on the researched phenomenon.

“Snowball” data sampling method was first applied by [Cohen \(1989\)](#) for the research of the hidden population group - cocaine addicts in Amsterdam. This method of data sampling was derived with a purpose to deal with problems of access and to increase the sample size available to a researcher. The snowballing, or chain-referral, technique was developed by asking known subjects (respondents) to nominate new subjects, who, in turn, nominate the other potential participants of the survey ([Duncan et al.](#); [Vershinina & Rodionova, 2011](#)). This method is recommended for surveying hidden population groups since it enables to form an appropriate target sample and increase it – the respondents, reached following personal recommendations, usually dispose abundant knowledge and/or experience relevant to the researched phenomenon. What is more, it provides access to wider population circles ([Jones, Ram, & Edwards, 2006](#); [Ram, Theodorakopoulos, & Jones, 2008](#); [Vershinina et al., 2009](#)). It should be noted that despite its increased size, the sample formed applying the method of snowballing cannot be treated as random. Nevertheless, this method of data sampling is recommended for surveying hidden population groups due to high quality of the obtained data.

#### 4. The results of the empirical research

In order to fulfil the aim of the research – to identify the determinants of digital shadow consumption, first of all, demographic characteristics of the respondents, who participated in the survey, were disclosed. The total number of the respondents made 260 people, who were surveyed distributing the e-questionnaire, developed engaging Google questionnaire creation tools. Respondents’ were grouped by such demographic characteristics as age, gender, education, marital status, income and occupation.

The data, presented in [Fig. 1](#) shows that 77% of the respondents fall into group of young people, aged from 16 to 29; 21% of the respondents made the group of middle age people, aged from 30 to 49; finally, the smallest group – 2% of the respondents - was composed of the elderly, aged 50 and over.

Grouping the respondents by their gender, it was established that the survey involved 33.5% of male, and 59.6% of female. Calculations also revealed almost equal distribution of the respondents for all income groups: 11% of survey participants indicated earning up to 100 EUR per month, 18% – from 101 to 300 EUR per month, 20% – from 301 to 500 EUR per month, 15% – from 501 to 1000 EUR per month, and 9% - 1001 EUR and over. Nevertheless, 27% of the respondents pointed out not earning any income. The obtained results propose that pupils and students, composing the core of young people’s group and 60% of the survey participants by

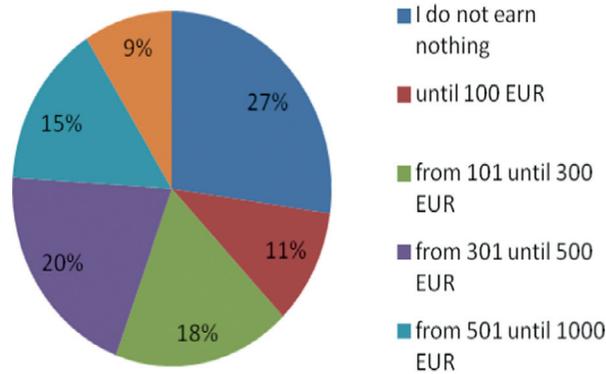


Fig. 2. Distribution of the respondents by income, percent.

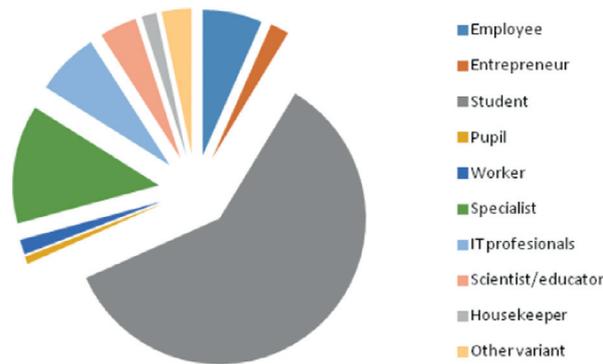


Fig. 3. Distribution of the respondents by occupation, percent.

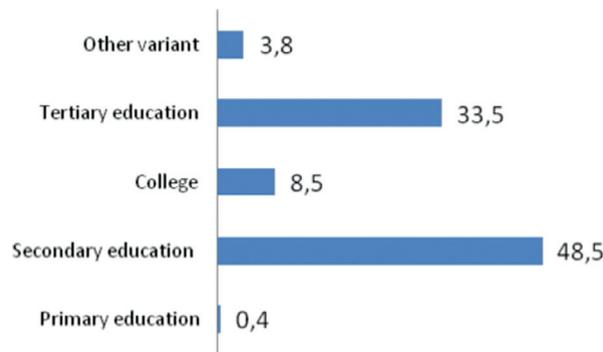


Fig. 4. Distribution of the respondents by education, percent.

their occupation, may make the majority of the respondents without any income. 13% of the respondents work as experts, 7% – as IT professionals, and the last 6% – as employees. Distribution of the respondents by their income and occupation has been depicted in Figs. 2 and 3.

48.5% of the survey participants indicated having secondary, 33.5% – higher education. The substantial number (49.6%) of the respondents live with their parents or are married and bring up children (15.8%), which confirms the previously introduced findings, revealing that consumers, who obtain products and services in e-space, basically include jobless students (aged 16–29) with secondary/higher education. Thus, this part of population can be considered a potential demand in digital trade, especially with respect to the distinctive features typical of Y generation such as involvement in technologies, the Internet and e-games. Distribution of the respondents by their education and marital status has been depicted in Figs. 4 and 5.

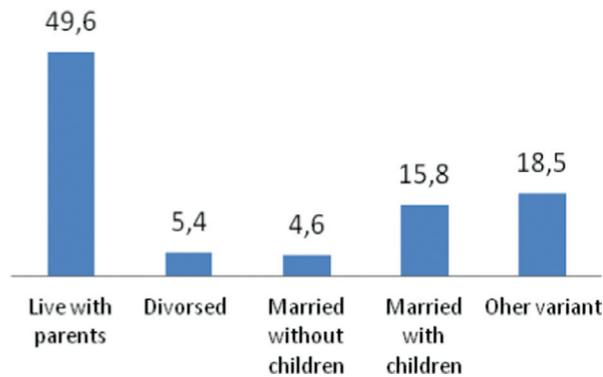


Fig. 5. Distribution of the respondents by marital status percent.

Table 2  
Mean ranks for the factors of digital shadow consumption.

Determinants	Mean rank
<u>Economic:</u>	
Lack of accessibility of economic activities	2.96
Unfavourable economic situation in the country (high rate of unemployment, low wages)	3.64
Technological advancement (simple access to the Internet, quality of software and hardware, bearable costs of mobile and Internet connection)	3.61
Low costs of digital data storage	3.42
<i>Lower price</i>	4.02
Spread of financial innovations (e.g. accessibility of a short-term credit online)	3.22
<u>Social:</u>	
Low level of tax morale	3.40
Stereotypical negative attitude towards public authorities	3.38
<u>Legal:</u>	
Low probability of detection of a fact of a purchase obtained from unregistered juridical or unofficially performing physical entity without paying VAT	3.26
Weak legal framework with the lack of regulations preventing cybercrime	3.24
Lack of professionals with cybercrime detection abilities, which determines low fear of punishment	3.31
Poorly regulated and controlled legal framework of IT sector	3.35
<u>Miscellaneous:</u>	
<i>IT advantages (convenience, opportunity to make purchases round-the-clock without leaving home, anonymity)</i>	4.02
<i>Lack of opportunities to obtain a desired product in the local market</i>	3.82
<i>Time saving obtaining a product/service in the local market</i>	3.95

Processing the data obtained from the second part of the questionnaire, titled “The determinants of digital shadow consumption”, *Cronbach alpha* coefficient equal to 0.820 was calculated. The value of *Cronbach alpha* coefficient proposes that the survey questions reflect the researched dimension with appropriate accuracy. *Kendall’s coefficient of concordance* was estimated to be equal to 0.147, and value *p* equal to 0.000, which indicates meager, but statistically significant compatibility of the respondents’ opinions. Divergence of the answers can be justified considering the differences in respondents’ personal experience and knowledge on digital shadow economy, the unified concept of which has neither been comprehensively researched nor officially accepted by scholars.

The factors of digital shadow consumption by the mean ranks estimated following the results of the empirical research have been illustrated in Table 2.

The factors with mean ranks equal to 3.5 and higher are treated as significant for digital shadow consumption. The factors with mean ranks lower than 3.49, are treated as less significant, i.e. not making a significant impact on consumers’ decision to obtain products or services in digital shadow market.

The data, presented in Table 2, reveals that *lower price* is the most significant factor (mean rank 4.02) of digital shadow consumption in the group of economic determinants. The other significant factors in this group, although with lower mean ranks, include *unfavourable economic situation in the country* (mean rank 3.64) and

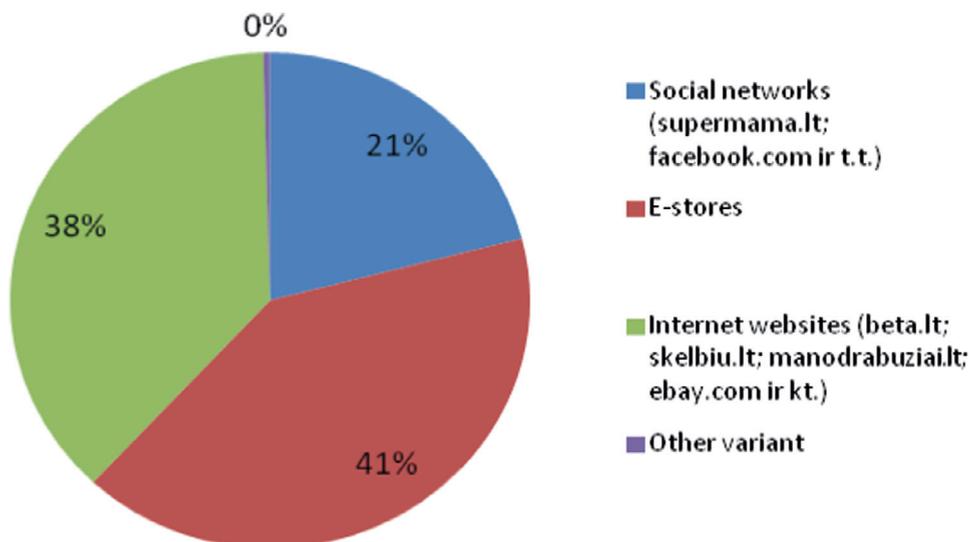


Fig. 6. The channels of digital shadow consumption, percent.

**technological advancement** such as simple access to the Internet, quality of software and hardware, bearable costs of mobile and Internet connection (mean rank 3.61).

Having exceeded the mean rank of 3.5 points, **IT advantages (convenience, opportunity to make purchases round-the-clock without leaving home, anonymity)** (mean rank 4.02), **time saving obtaining a product/service in the local market (mean rank 3.95)** and **lack of opportunities to obtain a desired product in the local market** (mean rank 3.82) can be treated as significant for digital shadow consumption in the group of miscellaneous determinants. The three factors mentioned above might, undoubtedly, be attributed to the drivers of general e-trade. Nevertheless, according to the consumers, they serve as extra motives to obtain products or services from an illegal trader, exploiting the advantages provided by e-space.

The other groups – social and legal factors – have been found non-motivating and hence, not having a significant impact on digital shadow consumption.

In order to identify the distribution channels, most commonly engaged for digital shadow consumption, the respondents were asked to specify the networks by which products or services are ordered in digital shadow market (see Fig. 6).

The data, presented in Fig. 6, discloses that the majority of the consumers, who operate in e-space, are inclined to purchase products/services from e-shops (as it was pointed out by 41% of the respondents); 38% of consumers engage the websites such as *beta.lt*, *skelbiu.lt*, *manodrabuziai.lt*, *ebay.com*, etc. A significant number of the consumers (21% of the respondents) admit purchasing products/services from suppliers or physical entities in social networks. The results of the survey have also revealed that illegal traders or service providers may exploit a wide variety of distribution channels since the consumers do not give any evident priorities to one particular distribution channel.

It is important to note that 35% of the respondents do not request any purchase confirmation documents (e.g., invoices, bills, checks, etc.); 41% of survey participants occasionally request purchase confirmation documents; and only 24% of the respondents always request purchase confirmation documents (see Fig. 7), which, to high extent, contributes to motivation of illegal traders to maintain e-activities unregistered, this way escaping revenue taxation.

Following the processed data of the survey, 58.8% (more than a half) of the respondents, who purchase products/services in e-space, do not verify the status of a trader, i.e. do not check whether a trader performs on the basis of officially registered activities. 37% of survey participants admit verifying the status of a trader as a result of having had negative experiences in black economy. The reasons that determine verification of e-trader's status include the need of reliability and guarantees (as it was pointed out by 30.8% of the respondents), evasion of the risk to obtain a low quality product (marked by 24% of the respondents), friends and acquaintances'

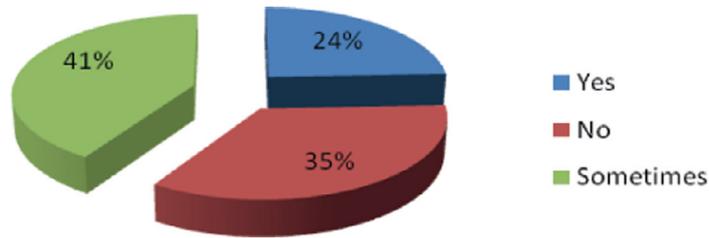


Fig. 7. Frequency of consumers' request for purchase confirmation documents, percent.

recommendations (15.4% of the respondents), and precaution caused by previous negative experience (9.9% of the respondents).

The empirical research has enabled to achieve the following original results:

- (1) To develop the profile of a potential consumer in digital shadow economy – a young jobless or middle-income student, occupied in IT field as an expert or employee, married with children or living with parents.
- (2) To identify the most significant factors of digital shadow economy, which include lower prices of products and services in digital black markets, unfavourable economic situation in the country, technological advancement, IT advantages, time saving obtaining a product/service in the local market and lack of opportunities to obtain a desired product in the local market. The other groups – social and legal factors – have been found non-motivating and hence, not having a significant impact on digital shadow consumption.
- (3) To establish that the majority of consumers, operating in digital shadow economy, neither verify the status of a trader nor request (or not always request) purchase confirmation documents, which partly contributes to motivation of an illegal trader to maintain e-activities unregistered, this way escaping revenue taxation.
- (4) To disclose consumers' indifference to distribution channels, which explains unrestricted exploitation of a wide variety of e-shops, social networks and websites for the supply of products and services in digital shadow economy.

## 5. Conclusions

- (1) The theoretical analysis of the scientific literature has revealed that digital shadow consumption is typically driven by higher customer satisfaction, generated by acquisition of a desired product or service at lower costs, wide variety of e-stock, quicker and convenient delivery, social acceptability of illegal activities online, minimal investment at risk and low fear of punishment, the apparent lack of action victims and easy access to IT and Internet access in consumers' environment.
- (2) Despite the increased size of the sample, "snowball" data sampling method does not ensure a random sample formation, although this method is recommended for surveying hidden population groups due to high quality of the obtained data.
- (3) The results of the empirical research have revealed that the most significant factors of digital shadow economy include lower prices of products and services in digital shadow markets, unfavourable economic situation in the country, technological advancement, IT advantages, time saving obtaining a product/service in the local market and lack of opportunities to obtain a desired product in the local market.
- (4) The consumers, operating in digital shadow economy, neither verify the status of a trader nor request (or not always request) purchase confirmation documents, which highly contributes to motivation of an illegal trader to maintain e-activities unregistered, this way escaping revenue taxation.
- (5) Consumers' indifference to distribution channels explains unrestricted exploitation of a wide variety of e-shops, social networks and websites for the supply of products and services in digital shadow economy.

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