

# The Role of Knowledge-based Consumption in the Consumers' Purchase Decisions of Heating Products

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## Abstract

The increasing role of the Internet enables the spread of knowledge-based consumption; consumers are turning to their social environment to exchange information and experiences with products either through personal contacts or by contacting others on the Internet. Several former studies analyzed the influencing role of experience-based communication on a variety of products but in the case of heating appliances the scientific literature is lacking. The goal of the study is to reveal the influence of experience in the various stages of the purchase process and to identify the credible information sources that consumers consult while making a decision. A two-step exploratory research was conducted in 2013 with homeowners in Hungary on the residential heat market. Consumers were found to be active decision-makers and deliberately planned the purchase of heating products. The influencing role of experience prevails not only in the consumers' personal experience but also in the experience of other users they interact with and in the experience of professionals they consult. Personal experience starts at the early age as respondents' recall childhood memories with heating, which influences the consumers' expectations in the early stage of the purchase process. The experience of other users prevails along the whole purchase process through credible sources and the experience of professionals influences mainly the information search and validation phase of the purchase process. Consumers consult other users (strong and weak social sources) personally or via online sources by the final decision rather than turning to the installer.

## Keywords

experience, decision-making, credible information sources, heating products, consumer buying behaviour

## 1 Introduction

The digital revolution has had a significant impact on consumers' decision-making of today. The Internet enables knowledge-based consumption; experiences with products (purchase and use) are exchanged between individuals on multiple online platforms such as blogs, forums and a variety of social networks (from families to the whole society)<sup>1</sup>.

Social ties - defined as the "set of social interactions between two or more individuals" – depending on its strength have a different impact on individuals' decision making (Arndt, 1967) or. Strong ties, e.g. with family members and friends, have more influence on consumer's decision making than weak ties, e.g. acquaintances that consumers don't know well (Arndt, 1967). The influence of strong ties is more relevant in the case of investment

<sup>1</sup> A social network is an "interconnected structure, made by individuals or organizations, which involves forming social groups by one or more specific types of relationships." (Tokarčíková, 2011)

intensive products, where the decision-making is perceived to be difficult (Duan et al., 2008).

Morris et al. (2010) found that individuals are conducting social searches, which means they are searching for information (online) with the assistance of social sources (e.g., family, friends or other unknown persons) as they are looking for product specific information (Park and Lee, 2008). The personal conversations prevail through social influence, either face-to-face, or word-of mouth communication (WOM) channels in which the participants are familiar with each other; or through online WOM (eWOM) where the participants are strangers to each other and their identity and credibility is not acknowledged. (Kim and Gupta, 2012). By sharing experiences informants are looking for additional user-oriented information (product information and recommendation for purchase) and recommenders provide a positive or negative signal of product popularity

(Park and Lee., 2008). The exchange of product experiences (e.g., online product reviews) influences the consumers' expectations of the product, the final decision and the post purchase attitude. (Jalilvand et al., 2011) In this sense, highly credible information sources are essential communication channels, where trustworthiness and expertise are a degree of how individuals perceive the source and its capability to deliver correct and valid information. (Hovland et al., 1954)

Early studies have already researched the direction and influence of WOM on product sales. Katz and Lazarfeld (1956) and Engel et al. (1969) found that WOM has an influence on consumers' choice; furthermore, they are found to be more effective than advertising or personal selling. Yang and Mai (2010) found that consumers take negative information into account rather than positive ones; moreover, negative WOM has a stronger influence on consumers' evaluation than positive ones (Arndt, 1967). However, other studies stated the opposite and found positive information more influencing (Skowronski et al., 1989). The most recent studies have researched the role of previous personal experience and WOM across several contexts in case of different products: information search and processing (Jalilvand et al., 2011; Gupta and Harris, 2010), product judgement (Bone, 1995; Heckathorne, 2010), the impact of WOM on purchase intention and sales volume (Huang and Chen, 2006; Pookulangara and Koesler, 2011; Duan et al., 2008; Wang and Chang, 2013; Gupta and Harris, 2010; Park and Lee, 2009) and post purchase experience (Bone, 1995). None of these studied the role of experience and its credible information sources regarding technology intensive products, such as heating appliances and in its purchase decisions.

The aim of this paper is to investigate the role of experience and its prevalence in the purchase decisions of heating products; furthermore, to investigate the credible information sources consumers turn to in the various stages of the purchase process.

## 2 The role of experience in the decision-making process of heating products<sup>2</sup>

The decision-making in the purchase of heating products is a complex process, where consumers are not

<sup>2</sup> The heat market refers to the part of the HVAC (Heating, Ventilation and Air Conditioning) market, where manufacturers produce and sell heating technology to customers to ensure indoor temperature and warm water comfort. This paper refers to the residential heat market, where heating products (heat generator appliances or boilers) are sold to single households. In this study all types of heat generating appliances are considered, regardless of fuel type and energy sources.

independent, “isolated decision makers” but they interact with other people in their social environment. (Kasanen and Lakshmanan, 1989).

Table 1 gives an overview of the different models that have researched the role of experience in a variety of contexts with heating products, mainly from the point of view of the diffusion of specific heating technology. The adapted theory models of Kasanen and Lakshmanan (1989) – conducted on residential heating choices of households - and Kaplan (1999) – diffusion of photovoltaics - studied the role of experience in the innovation diffusion process, meanwhile Nyruud et al. (2008) investigated the role of satisfaction in the context of loyalty with a focus on bio-energy heating. Mahapatra and Gustavsson (2008) and Kaenzig and Wüstenhagen (2008) investigated the acceptance of eco innovations (micropower systems and heat pumps) and identified the following stages of the diffusion process: (1) problem recognition, (2) information search, (3) evaluation, (4) selection, (5) after purchase. They argued that positive experience in the use phase leads to recommendations and future re-purchasing of the same brand. Decker et al. (2009) and Stolyarova et al. (2015) investigated the influencing factors of the consumers' purchase choice on residential heating appliances and found that experience with current heating products (Stolyarova et al., 2015) is a consumer characteristic (Decker et al., 2009) that influences the product/technology choice.

However, these models investigated the role of experience with heating products, they haven't studied the source and the influencing role of experience along the different stages of the purchase process, furthermore they haven't investigated the consulted credible information sources that consumers turn to.

## 3 Theoretical framework

Previous researches and models – see corresponding literature overview in Section 2 - emphasized the importance of personal experience – prevailed mainly in the post purchase evaluation stage - but haven't considered the influencing role of the experience of other participants (e.g. of other users in the social environment or professionals – e.g. installers) that might prevail at the different stages of the purchase process.

Based on the knowledge-based consumption trends – presented in Section 1 – the question can be raised, how all this influence the consumers' buying behavior regarding heating products? Basically, the following assumption can be made: consumers are not only relying on their

**Table 1** Role of experience in the adoption of diverse heating technologies

Model	Role of experience	Review of the models
Stern, 1985	Word-of-mouth communication and recent personal experience positively affect the energy choices of individuals	
Kasanen and Lakshmanan, 1989	Experience with an innovation positively affects its diffusion	No purchase process relevant models, no information on the role of experience in the decision-making and on the consulted credible information sources.
Kaplan, 1999	Knowledge through experience and motivation influence interest in photovoltaic systems	
Nyrud et al., 2008	Role of experience (satisfaction from use) in the loyalty of new wood burning stoves	
Mahapatra and Gustavsson, 2008	Perceived additional advantage of using the product leads to recommendation	Role of experience is not analysed/ investigated in the purchase process.
Kaenzig and Wüstenhagen, 2008	Positive experience with Micropower systems in the post purchase stage is a strong predictor for purchasing the same vendor and/or brand again	
Decker et al., 2009	Experience with heating product is a consumer characteristic that influences heating system choice	Experience is analysed by the choice and not along the whole purchase process
Stolyarova et al., 2015	Role of experience: respondents prefer to purchase the same type of heating appliance as they are currently using	

Source: own compilation

*personal experiences* with the products but also on the *experiences of other users*. This might prevail either via personal contacts (e.g., word-of-mouth) with strong ties (e.g., family, friends, etc.) and/or with weak ties (other users) via diverse online sources. The influencing role of the *installers' and other professionals' experiences* might also affect the purchase process and it can prevail in recommendations (technology, brand) via personal contacts (e.g. consultancy).

Furthermore, another assumption can be made: the influencing role of the experience with heating products prevails differently, depending on the stage of the purchase process.

Based on the identified process stages of Kaenzig and Wüstenhagen (2008) and Mahapatra and Gustavsson (2008) and the limited corresponding scientific literature (see Table 1), Fig. 1 introduces the proposed sematic model of my research framework on the influencing role of experience in the purchase process of heating products:

At the stage of *problem recognition*, consumers perceive the need for a new heating product. Regarding the role of experience, Mahapatra and Gustavsson (2008) discovered the importance of *personal experience* in regards to the current heating situation: less than 10% are willing to change to a new heating system if they are satisfied with the existing one. The assumption can be made that besides *personal experiences*, the *experience of other users in the*

*social environment* influences the consumers as they consult social search sources and turn to their strong (family and friends) and weak (other consumers) social ties to exchange information via word-of-mouth.

As for the *information search*, Brezet (1994 in Dieperink et al., 2004) found that early adopters of heating products are individuals who take the initiative to gather information mostly on the basis of their previous *personal experiences*. He found that while early adopters of new heating technologies made an active information search and a well-thought decision, non-adopters strongly relied on the *experience of the installers*. The influencing role of the installer prevails through his experience with diverse heating technologies, as Brezet (1994 in Dieperink et al., 2004) found: a lack of experience and know-how with the new technology and the unexpected difficulties of the installation and operation drove the installers to give advice against innovative heating products. Studies refer to the influencing role of the *experience of other users in the social environment*. Stern (1985) argues that the opinion and experiences of even wrongly informed family members, friends and colleagues affect the choices regarding energy efficiency measures rather than experts or professionals. According to Harris (2013) and Turpin (2013) the consumers of heating products of today are active information seekers, who are ready to exchange information and experience with others using online channels.

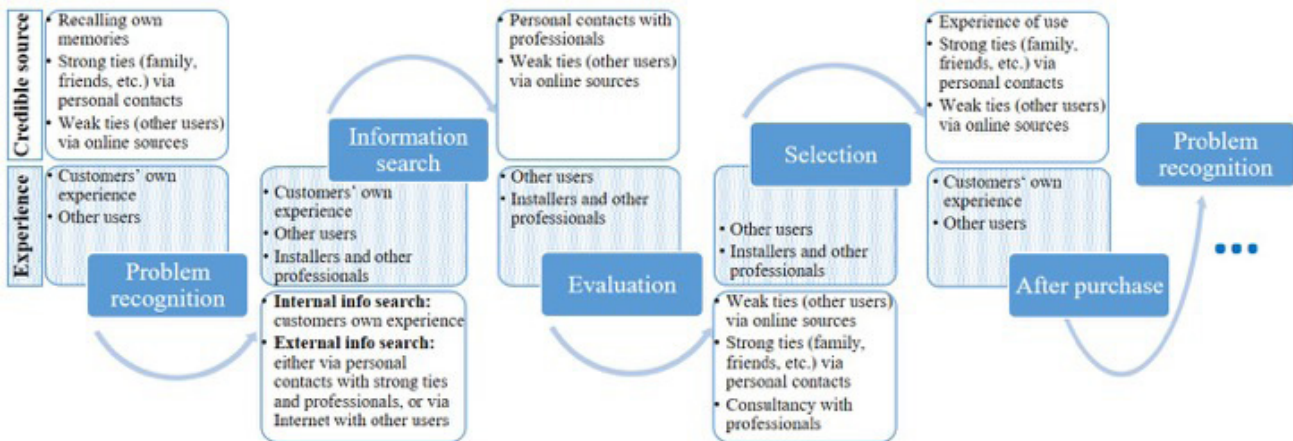


Fig. 1 Proposed sematic model of the influencing role of experience along the purchase process of heating products. Source: own compilation

Based on the information search model of Hofmeister-Tóth et al. (2003), the following further assumptions can be made:

- consumers start searching for information internally, based on their previous experiences, by recalling memories on internal past searches and experiences (use)
- or by turning to external sources: (1) to sources of strong ties (family, friends, neighbours, colleagues, etc.); (2) to weak tie sources (other consumers via online sources, e.g., blogs and forums, social media, etc.) or; (3) by contacting a professional (e.g., professional consultants, visiting trade fairs, etc.)

At the stage of *evaluation*, former studies identified diverse criteria that influenced consumers by validating the gained information:

- Economic factors: annual costs, investment costs, price-performance ratio (Mahapatra and Gustavsson, 2008; Tapaninen et al., 2009; Kaenzig and Wüstenhagen, 2008)
- Technical factors: reliability, durability (Mahapatra and Gustavsson, 2008)
- Personal factors: risk of affordability and security of supply (Mahapatra and Gustavsson, 2008; Tapaninen et al., 2009) or
- Social factors (Tapaninen et al., 2009)

But, none of the reviewed models considered the source of experience at the diverse stages of the purchase process.

The assumption can be made that consumers validate the gained information with diverse credible information sources: these sources can be weak (blogs and forums) and

strong social ties (personal contacts) but can also be professionals (consultations).

In the *selection* phase no former studies considered the influencing role of experience. The assumption can be made that there are more frequently used communication channels that lead to the final decision, social platforms (weak ties) and personal contacts (strong ties). I suppose that the influence of experience prevails mainly in the experience of other users rather than in the influence of the installer and other professionals.

In the *after purchase* phase previous models emphasized the importance of *personal positive experience*. Stolyarova et al. (2015) found that the greatest influencing impact on household purchase decisions is that respondents prefer to purchase the same type of heating appliance as they are currently using. Kaenzig and Wüstenhagen (2008) argues that positive experience with a given system is a strong predictor that consumers will consider the same vendor / brand next time. Nyrud et al. (2008) found that satisfaction from the previous use of bioenergy heating system resulted in the re-purchase and consumer loyalty towards the product. Based on these former research findings, the following assumption can be made: satisfied consumers are not only willing to repurchase the same brand but they are also willing to express their satisfaction in their social environment, thereby influencing other consumers already in the early stages of their purchase process.

#### 4 Research method

In order to explore the influencing role of experience in the purchase decisions of heating products, a two-step empirical research was conducted. At first, in-depth interviews were carried out with homeowners in order to reveal

the characteristics of the decision-making and the role of experience along the purchase process. The key findings of the interviews contributed to the next step, to the online questionnaire, in order to make quantitative assessments.

The in-depth interviews – presented in Table 2 – were carried out in West Hungary in 2013. The interviews were conducted with couples in the homes of the respondents and took nearly 2 hours long, which highlights the complexity of the research topic. The presence of the partner reduced the uncertainty this complexity may have caused. The sampling technique ensured the selection of the interviewees who owned a property and made the purchase decision on their own (tenants would have been an irrelevant target group).

The online questionnaire was conceptualized and carried out in December 2013 with residents in Hungary. The sample was provided by Ipsos Interactive Services and access was financed by Bosch Thermotechnik GmbH. The respondents in the online panel were self-recruited and the quality of the panel was frequently verified and managed by the provider. The members of the online panel represented people over 18 years with Internet access but it wasn't possible to guarantee the representability of all potential purchasers in Hungary. As the respondents received the link to the online questionnaire they were screened in order to filter out the irrelevant target group (e.g., tenants). The questions targeted the ownership of the property and the intention of changing a heating product in the past/coming 18 months. In total 1 163 recruited

participant opened the questionnaire, thereof 643 were screened out. A further 103 participants were dropped out halfway whilst filling it out, probably due to the high complexity of the research topic. In the end, 417 respondents completed the questionnaire of which 130 already bought a heating product and 287 were planning to purchase one in the coming 18 months.

### 5 Results

The participants of the in-depth interviews are all owners of a house or a flat and purchased a heating product at least once in the past years. Results of the interviews (presented in Fig. 2) show that respondents could recall memories at the diverse stages along the purchase process, where they iterated between stages and cross-checked the gained information with different sources. The whole process took 3 to 6 months long until the final product was purchased.

The purchase process was described by the respondents as presented on the word cloud in Fig. 3. The word “internal/interior” refers to decisions that influence their homes; furthermore, it can refer to the internal search and the memories they recall. As the products are “expensive” and the decision needs to be well founded with “information”, respondents are looking for security that the word guarantee refers to. The influencing role of “experiences” prevails through “recommendations” along the purchase process.

At the stage of *awareness* respondents showed an openness to learn about heating products, as one couple said,

Table 2 Research method

	Qualitative interviews	Quantitative questionnaire
Sample	Couples with own property (house/flat), made decision on heating	Residents in Hungary, aged over 18 years with Internet access
Interview technique	Couple-based interviews based on interview outline	Online questionnaire
Sampling method	Non-probability snowball technique	Online panel, screening based on ownership and purchase in past/coming 18 months
Analysis	Nvivo 10, based on interview outline and notes	SPSS statistic program

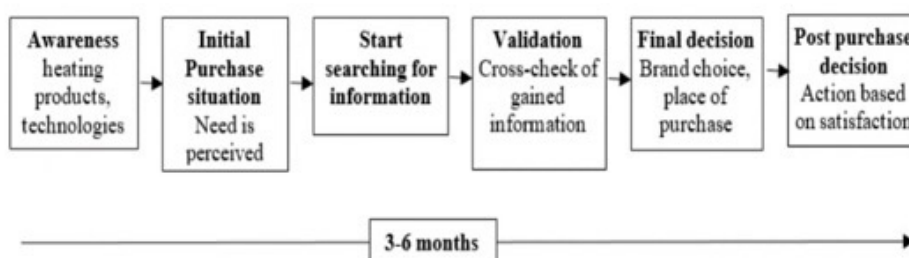


Fig. 2 Identified stages of the purchase process



**Fig. 3** Characteristics of the purchase process Source: own compilation

*“The consumer society expects from consumers to be up-to-date and well informed regarding innovations and the latest technology of heating devices”.* The experience of other users prevailed as respondents recalled information from common knowledge<sup>3</sup>, as a perceived credible information source, *“There is a common knowledge about heating products, just as everybody knows that German cars are the most reliable, beware of Italian heating brands.”* Previous experience prevailed in recalling childhood memories regarding heating products, already at an early age. As one couple recalled, *“As an alternative solution we thought about the wood heating technology because the feeling of crackling fire reminded us of our childhood.”*

At the stage of *initial purchase situation* respondents faced a situation where a new heating product was needed. Personal experience prevails in previous purchase and use of heating products: either they renovated or extended the existing heating system (due to costs reasons) or they purchased a new heating appliance for a new building. In both cases respondents deliberately planned their purchase; only 1 couple mentioned an emergency breakdown situation. In all cases the respondents reported the importance of their personal past experiences in this stage, no other source of experience was perceived.

As respondents started to *search for information*, they showed diverse information search behaviour, where the role of experience prevailed as follows:

- 6 couples started to search for information by turning to external sources. Experience of other users prevailed, as interviewees turned to various online

sources such as producers’ websites, online information portals, blogs and forums. Experience of other users and professionals were highlighted through personal contacts, as 4 couples turned to an installer and friends when they started to search for information. As one couple said: *“We prefer to ask them in the first because they are very up-to-date and their opinion is trustworthy ... of course what I experience, is the most credible.”*

- In total 3 couples mentioned that they recalled memories from their childhood and from common knowledge (= internal search) related to personal previous experiences with heating products before they started with active information acquisition.

Interviewees *validated* the gained information by cross-checking 4-6 times with different sources. As respondents couldn’t recall the sources of information of all validation stages, they named the most remarkable ones: general information portals, family and friends, installers, blogs and forums, trade fairs, etc., where they exchanged information and experiences and validated the credibility of the gained information in order to get closer to the final decision. The influencing role of experience of other users and professionals prevailed in the consulted credible sources.

The influence of experiences stood out in the *final decision* when interviewees chose the place of the purchase. The majority of the interviewees were influenced by the experience of a professional: they purchased the product after a recommendation from the installer. Either where the installer made a suggestion (3 couples) or where the store consultation was the most professional (3 couples). 4 couples bought the products where the price was the most affordable, regardless of the influence of the social environment.

At the stage of *post purchase evaluation*, the majority (except for 1 couple) said that the product fulfilled their functional and financial expectations. Basically they were satisfied with their purchase but they couldn’t report any perceived benefit. The influence of their personal positive experience prevailed as one couple recommended the products to another couple, who were about to purchase a new heating system. *“Our neighbours were very satisfied with the heating product that they purchased last year. They recommended not only the technology and the brand but also a competent installer who installed the boiler. As we were also about to renovate the heating system, we contacted this installer and finally bought the same condensing gas boiler as the neighbour did.”*

<sup>3</sup> Common knowledge refers to widely known information, which “depends crucially on how each person understands or interprets how other people understand or interpret a communication.” ... “Social media technologies are particularly good at both creating common knowledge locally through strong links and spreading information rapidly through weak links.” (Chwe, 2013)

This example shows how post purchase evaluation of one consumer has an impact on the awareness or initial purchase situation of other consumers.

Based on the key findings of the in-depth interviews, the online questionnaire was carried out with homeowners in Hungary. This section presents the results of how experience prevails along the purchase process. The quoted information sources were clustered - based on the presented experience categories in Section 2 – as follows:

- Experience of professionals: installer, planner, architect, energy consultant, technical supervisor, general executor, consultation at professional stores, DIY stores, exhibitions and trade fairs
- Experience of other users – strong ties: parents, brothers/ sisters, husband/wife, friends, colleagues, neighbors
- Experience of other users – weak ties: online blogs and forums, online social media sources, opinion leaders

### 5.1 Stage 1- Awareness

Respondents were asked if they could tell something about their childhood memories (good or bad) related to heating. In total 251 respondents (60% of all respondents) quoted 375 evaluable answers, presented in Fig. 4. Nearly half of the respondents recalled childhood memories on various fuel types and every third on diverse technologies related to financial and quality product attributes. Some of the emotions recalled were the comfort and harmony of the open fire and some negative ones such as, the breakdown of the heating system.

At the second step, respondents were asked if they had any information in their common knowledge regarding heating products. In total 251 respondents recalled information in the form of 149 evaluable answers; presented in Fig. 5.

Results show that they were open to recall memories about widely spread information, such as technologies, fuel types, and heating brands in the context of product attributes such as reliability, efficiency, quality and country of origin.

### 5.2 Stage 2 – Initial purchase situation

At this stage respondent were asked about their purchase situation, specifically their main motivation and what sources they used to investigate their actual needs. Fig. 6 shows that respondents were motivated mainly by financial factors (53% of all respondents, e.g., too expensive to operate, rising energy costs, subsidies), 28% quoted life-cycle situation factors (e.g., extension due to diverse situation, increased income, kids born, etc.). Only 8% were motivated by an emergency breakdown, which means that respondents deliberately planned their purchase.

The influence of experience prevailed in the experience of other users: strong ties (family, friends) and weak ties (opinion leader), however it was mentioned by only 1% of all respondents. This means that the influencing role of the social environment and the knowledge based influence doesn't trigger the purchase of the heating products.

Once the decision is made for a new heating product, respondents form their expectations based on a variety of sources, where experience plays an influencing role (presented in Fig. 7).

Could you please tell something about your childhood memories (good or bad) about heating?  
Please explain your memories in some words!

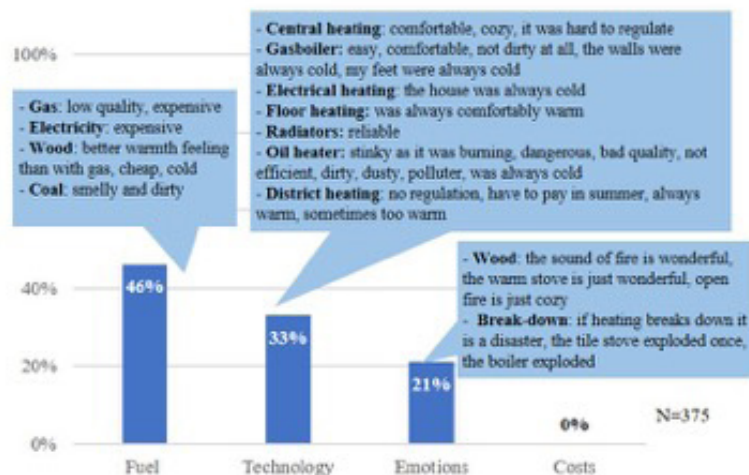


Fig. 4 Recalled memories from the childhood Source: own compilation

**Do you have any perceptions about heating products from the common knowledge?  
 Please explain your opinion in some words!**

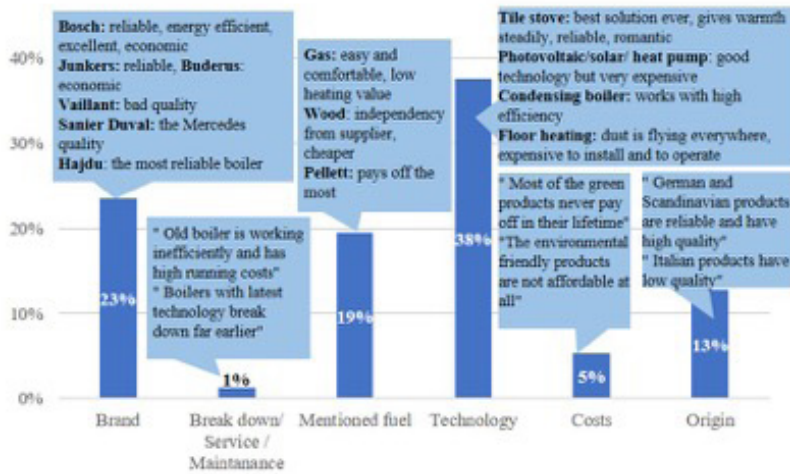


Fig. 5 Recalled information from the common knowledge Source: own compilation

**What was your motivation for purchasing a new heating product?**

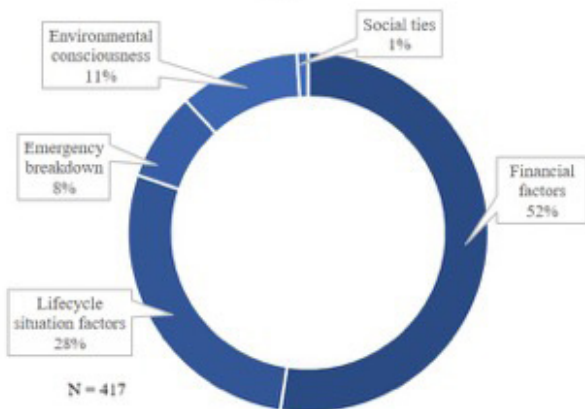


Fig. 6 Initial purchase situation Source: own compilation

61% of respondents agreed that the source of their expectations towards the new heating product was based on their previous personal experience and 30% agreed that it was childhood memories. Furthermore, 46% agreed that they counted on the experiences of other users they had strong social ties with. The experience of other users prevailed in the weak social ties, as 37% agreed that common knowledge and 18% agreed that word-of-mouth was the source of their expectations as the purchase situation arose.

**5.3 Stage 3 – Search for information**

Respondents showed different information acquisition behavior, as they started the search for information. The majority of the respondents (59%) started the search on their own.

**What was the source of your expectations of heating products at this time?**

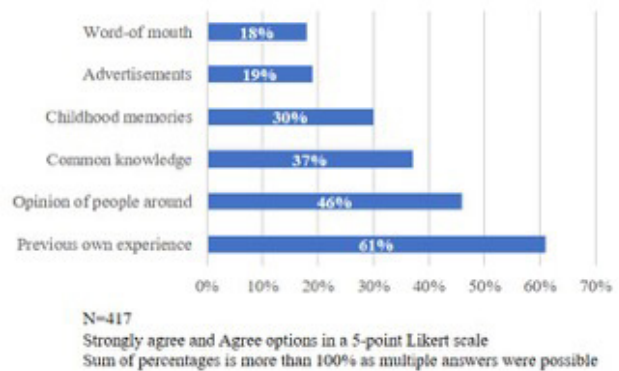


Fig. 7 Source of expectations with heating products at the initial purchase situation. Source: own compilation

As Fig. 8 shows, nearly the half of the respondents (51%) turned to a variety of online sources, such as producers' websites, general information portals, Google ads, etc., or offline advertisements (7%, e.g., magazines, TV, radio, etc.), where the influence of experience didn't play a role. The influencing role of experience prevailed in consulting with professionals, visiting DIY stores and trade fairs (25% of respondents). The influence of other users prevailed in turning to sources that are weak ties, such as visiting blogs, forums and social media sources, (16% of respondents).

In total 41% of the respondents turned to such credible information sources, where they could receive information and benefit from their experience of professionals or other users, as a starting point for their search for information externally.



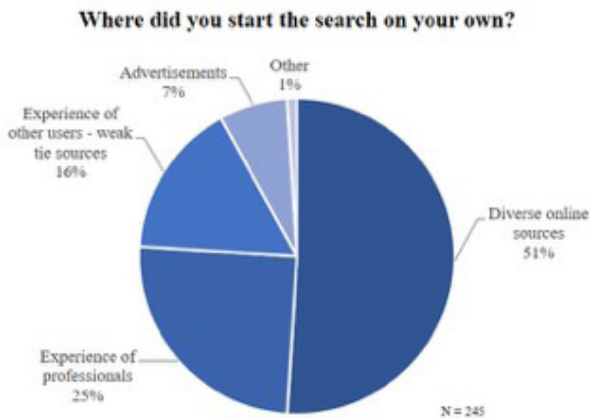


Fig. 8 Consulted credible information sources by starting the search for information Source: own compilation

27% of all respondents turned to their social environment when starting to search for information. Respondents were asked about the influencing contact person (presented in Fig. 9) and their role in this stage of the purchase process (presented in Fig 10).

Fig. 9 shows that the influencing role of experience prevailed as 57% of the respondents consulted a professional (32% with an installer<sup>4</sup>, 25% others). 40% mentioned turning to strong ties in their social environment, such as family, friends, colleagues, etc.

According to Fig. 10, 47% of the respondents said that this contact person made recommendations (technology, brand, professional), 25% exchanged information and experiences with this person, and 18% said that this person contributed to the next step in the purchase process or made no final decision (2%). Only the minority of the respondents (14%) said that they started the search internally by recalling information mainly based on their previous experiences (20%).

#### 5.4 Stage 4 – Information validation

85% of all respondents cross-checked the gained information, nearly half of them (47%) 1-3 times and 30% of the respondents stated 4-6 times, which shows that the information acquisition behaviour was well-considered. Those respondents who already bought their heating products in the past 18 months (N=130, see screening) were asked about

<sup>4</sup> The installer is the responsible professional for the heating system along the purchasing process, while others are dedicated to a certain task that indirectly influences the choice of the heating product (in the case of a new building other relevant professionals can include: an architect is planning the space for radiators, an energy consultant sets the energy level, a technical supervisor checks the quality of installation, etc.).

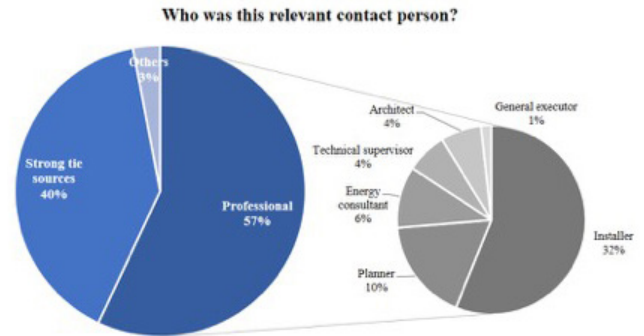


Fig. 9 Influence of experience of other users and professionals through personal contacts Source: own compilation

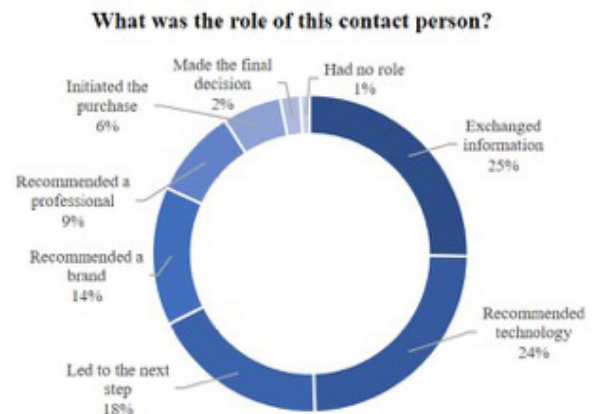


Fig. 10 Influencing role of other users and professionals in the start of searching for information Source: own compilation

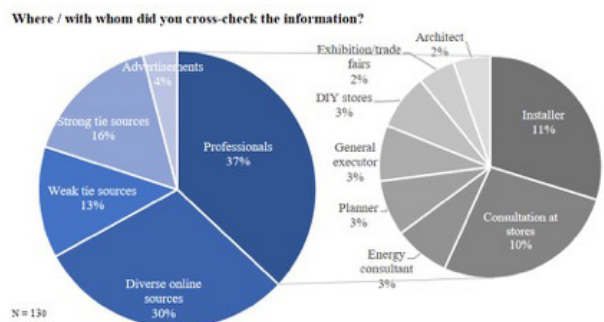
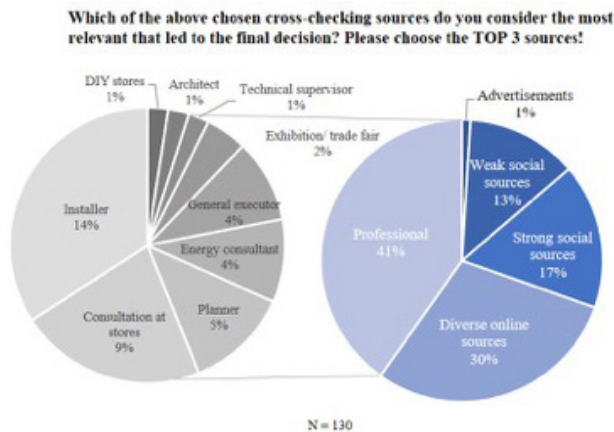


Fig. 11 Credible validation sources Source: own compilation

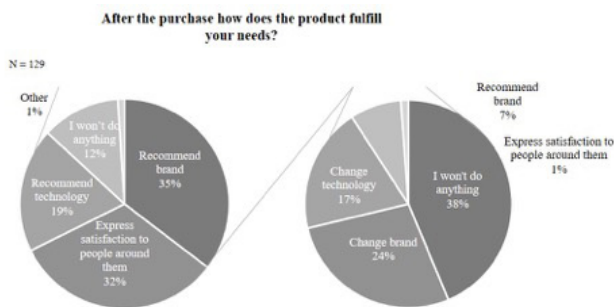
their credible validation sources in order to reveal the influencing role of experience and its communication channels.

As Fig. 11 shows, the influencing role of experience prevailed as 37% of the respondents validated their purchase by turning to an installer (11%) or to another professional (26%).

Experience of other users prevailed as 29% of the respondents turned to their social environment to cross-check the gained information and of these: 16% turned to



**Fig. 12** Credible information sources that led to the final decision  
 Source: own compilation



**Fig. 13** Post purchase evaluation Source: own compilation

strong social ties and 13% to their weak social ties. In total 66% of the respondents turned to social sources (where the influencing role of experience prevailed), meanwhile 34% of the respondents turned to a variety of online sources and advertisements where the knowledge-based information exchange couldn't have prevailed.

### 5.5 Stage 5 – final decision

In the final decision respondents were asked to choose – out of the information sources they mentioned for cross-checking the information at stage 4 – the top 3 sources they perceived to be the most influencing.

As Fig. 12 shows, the influencing role of experience prevails as 41% of the respondents turned to a professional (14% to an installer, 27% to another professional) and 30% of the respondents to their social environment (17% with strong social ties and 13% with weak social ties). In total 71% of the respondents consulted another person (in person or online) for the final decision where the influencing role of experience could have prevailed, meanwhile 30% of the respondents turned to a variety of online sources.

### 5.6 Stage 6 – After purchase attitude

Respondents were asked how the purchased product fulfilled their needs; the results are presented in Fig. 13. Positive personal experience in the use phase prevails as 77% of all respondents were satisfied with their purchase: the majority of these respondents (54%) are willing to make recommendations (35% technology, 19% brand) and express their satisfaction to people around them (32%).

These satisfied consumers are influencing those consumers, who are at the early stage of the purchase process and who are influenced by the experience of other consumers (strong and weak ties).

Respondents who quoted that the product fulfilled their needs without perceiving any extra benefit (20%) are either willing to change (24% brand, 17% technology) or they are passive consumers (38%) and won't take any action. After that respondents were asked if they were open to buying other products of the same brand. The majority of the respondents (93%) are willing to repurchase other products of the same brand, 38% if the satisfaction is perceivable with the current product.

## 6 Summary

The role of experience has a continuous impact on the purchase decisions of heating products; consumers are not only ready to learn about heating products in the awareness phase and turn to their social environment actively in the information search and validation phase but they are willing to express their feelings and make recommendations. Meanwhile previous research has stated the importance of personal experience in regards to heating products, mainly related to the use phase, and the empirical results have shown that experience prevails along the whole purchase process in a variety of ways.

Consumers' *personal experiences* are sourced from an early age, as they recalled childhood memories of technologies, fuel types, and product attributes. As the purchase situation arises, consumers actively recall memories of previous personal experiences that become sources of their expectations of the new product. Furthermore, the role of positive personal experience (perceived benefit from use) with the purchased product motivates consumers not only to express their feelings to other consumers (strong and weak ties) but also to re-purchase the same brand.

Experience of other users impacts the whole purchase process. It starts in the awareness phase, as consumers can

recall information from common knowledge in a diverse set of contexts and form their expectations of the new heating system based on the opinion of the people around them. Consumers conduct active social searches by turning to strong social ties via personal contacts or consult with weak ties via blogs, forums and social media sources. In the validation and final decision consumers are more likely to turn to their social environment than to any other online or advertisement sources.

The experience of professionals influences the purchase process in the information search, validation and final decision stages. Consumers visit DIY stores and professional trade fairs and they consult with professionals via in person to exchange information and experiences and to make recommendations for technology and brand in the purchase process.

## 7 Conclusion and recommendation

The paper gave a detailed overview how knowledge-based consumption is gaining importance in the purchase decisions of heating products. Consumers are getting active decision makers and their purchase decision towards heating products is highly influenced by experiences (own and of other users) with heating products, which is a key finding for heating manufacturers to be considered in their

sales and marketing strategy. Customers are not only able to recall information from the common knowledge and memories from their childhood memories, but they are actively turning to their social environment to share and express experiences and feelings before, by and after the purchase of heating products. It is recommended for heating manufacturers to create value – through products and services – that fascinates customers and that are worth sharing and talking about. The author sees this as an opportunity for increasing brand value and differentiation from competitors on the competitive heat market.

Though the professional experience of installers and some other professionals still plays an influencing role at certain stages of the purchase process, the intensity of this influence in the authors' opinion became questionable. In the light of the results it is recommended for heating manufacturers to review their customer (b2b, b2c) segmentation strategy and to consider shifting focus to the b2c customers.

Examining the possibly decreasing role of installers versus increasing role consumers in the purchase decisions sees the author as a relevant future research topic. Furthermore, the extension of current results with recent data, possibly a control analysis to explore further shifts in consumer buying behaviour trends are considerable future research areas.

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