A Luke-Warm Reception: Why Consumers Aren't Hot for Smart Thermostats

Abstract

Technological advances have led to new offerings in home heating systems and to a market that is becoming saturated with variants of "smart" thermostats. But does this seemingly growing market have a growing audience? In this talk I will present quantitative and qualitative data from a large scale survey (N=1007) that investigates the appeal of smart thermostats to prospective consumers. Findings from the survey indicate confusion about what "smart" means and a general apathy for smart thermostats. Survey respondents expressed displeasure towards the idea of "technology for technology's sake" and were reluctant to part with cash for something they failed to see the benefit of. Given this luke-warm reception I conclude by using insights from the data to derive marketing strategies that may prove effective in bolstering the allure of smart thermostats.

Introduction

The worldwide roll out of smart meters represents a window of opportunity for new offerings in smart energy products that can further enhance consumer choice and control [1]. Indeed, the "strong growth" of the home energy management sector is one of the anticipated benefits noted by the UK government in their initial business case for the mandated smart meter roll out [2]. However, for this benefit to be realized, product demand must match product growth. Yet, it's unclear whether consumers have appetite for these smart energy technologies. In this paper, I present survey data that examines consumers' responses to one product that is increasingly prevalent in the "smart energy arena" – the smart thermostat. In particular I consider consumers understanding of smart thermostats and their appraisals of "smart" as a concept and the drivers and barrier that may influence smart thermostat adoption.

Smart thermostats: A lucrative market?

A smart thermostat is a digital programmable heating system with internet connectivity that enables end-users to adjust their heating remotely. They are widely anticipated to be *the next big thing*. Indeed, over the last 5 or so years, the market place has seen an increase in smart thermostat offerings with contenders such as Honeywell, Nest, and Tado all competing for a share of the lucrative global market, anticipated to be worth $4.4 billion globally by 2025 [3]. Despite these promising forecasts, uptake has been relatively slow with just 1.4 million homes across Europe owning a smart thermostat [4]. Similarly, in the UK one of the largest energy providers has sold its own brand of smart thermostat to just 2.6% of its 14 million customers over the past 4 years, even though their product (the Hive) is widely recognized as a strong contender in the British market place [5]. This disparity between forecasted growth and uptake is further mirrored in the commentary surrounding smart thermostats, with observations that smart thermostats are "the latest trend in home heating" [6] but "lack the instant appeal of Instagram" [7] and are seen as "an unsexy consumer technology" [8].

Existing research: what do we already know about the appeal of smart thermostats?

Current research examining the direct appeal of smart thermostats to consumers is fairly sparse, with much of the academic literature focusing more generally on consumers' responses to smart home technologies [e.g., 9,10,11]. However, some initial insights into the drivers and barriers are revealed by the market research agency Navigant who report that that while awareness of prospective benefits of smart thermostats is growing among tech enthusiasts and early adopters, many consumers are ill informed or simply not motivated enough to part with the cash needed to purchase a smart thermostat [1].

Further insights are yielded by [12] who examined several factors theorized to explain intentions to adopt sustainable household technology. They found that US participants' intentions to adopt the smart thermostat "iControl" were predicted by compatibility expectations (i.e, perceptions that the product would fit with their existing heating and cooling systems), performance expectations (i.e., that it would help increase their productivity around the home) and hedonic expectations (i.e., that it would be fun and enjoyable to use). In addition, the extent to which consumers reported a keenness for

being amongst the first of their friends to adopt sustainable products also emerged as a significant predictor.

The present research: exploring consumer's readiness to adopt smart thermostats

To the best of the author's knowledge there appears to be only a few research papers that directly address consumer receptivity to smart thermostats. Yet such knowledge appears important to acquire given the anticipated market growth of this product and may prove fruitful in helping understand how to market smart thermostats to prospective end-users. Given this, the present research sought to examine the extent to which smart thermostats may appeal to prospective end-users. Accordingly, a survey was distributed to prospective end-users that gathered both quantitative data to gauge levels of interest in smart thermostats and their features, but also qualitative data to ascertain the perceived barriers and drivers to smart thermostat adoption.

Method

A survey was developed to ascertain a better understanding of the extent to which smart thermostats may appeal to prospective end-users. Questions focused on ascertaining consumers understanding of smart thermostats; attitudes towards the concept of "smart"; the appeal of different smart thermostat features; and willingness to adopt a smart thermostat.

Data collection

Data was collected during October 2016 using the market research company Survey Sampling International (SSI) who have readily available access to a large respondent panel that have previously agreed to participate in online surveys in return for incentives (e.g., points which can be converted to vouchers for Amazon, PayPal, iTunes etc). SSI recruited a sample of over 1000 respondents with the following specified characteristics: They had to be (i) homeowners (ii) in the UK (iii) over the age of 18 (iv) whose household did not own a smart thermostat.

Sample

A total of 1007 respondents completed the online survey. Details of their characteristics, including gender age, and annual household income are displayed below.

Table 1: Sample Characteristics

Characteristics	Category	Percentage of Sample
Gender	Female	
	Male	
	Transgender	
Respondent Age	Under 35	
	35 – 44	
	45 – 54	
	54 – 64	
	Over 65	
Annual Household Income	Under £30,000	37.5%
	£30,000 to £49,999	30.1%
	£50,000 to £74,999	15.5%
	Over £75,000	8.9%
	Prefer not to say	7.9%

Survey Measures

Consumer understanding of smart thermostats

Respondents provided qualitative responses to the question "What does smart thermostat mean to you?"

Appeal of "smart" as a concept

Respondents were asked to "select the response that best describes how you feel towards the term "smart" (e.g., smart thermostat, smart tv , smart home)". The responses ranged from 1 ("Extremely negative") to 5 ("Extremely positive").

Appeal of smart thermostat features

Respondents were asked to indicate to what extent each smart thermostat feature appealed to them using a 7-point scale ranging from 1 ("Strongly unappealing") to 7 ("Strongly appealing"). Each smart thermostat feature was accompanied by a brief description. The smart thermostat features presented to participants were as follows:

> Remote Control; adjust your heating from your mobile, tablet, or laptop.
>
> Advanced Scheduling; more flexibility to program your heating to suit your home's routine.
>
> Portable; now you can move your thermostat around the house with you. Allows you to monitor your room's temperature and adjust it instantly.
>
> Integrated Heating & Hot Water Controls; switch your hot water on and off from a display inside your home and/or using your phone.
>
> Welcome Home; schedule your lights to come on when you arrive home.
>
> Multi-User - Multiple householders can use a smart phone app to control the heating. An activity feed will detail the changes made by users.
>
> Monthly Summary; personalized summary of your smart thermostat usage
>
> In-app Notifications; alerts that appear inside the app and as a badge on the app icon when it's not in use
>
> Pipe Protection – prevents your pipes from freezing.
>
> Self-Learning – the system learns your home's schedule and sets the heating accordingly.
>
> Location Based Control – uses geo-tracking in occupant's phones to turn the heating off when the last person leaves and on again when the first person returns.
>
> Zonal Heating – heat only the rooms you are using.

Willingness to adopt a smart thermostat

Participants were presented with an image and a basic description of a smart thermostat which they were asked to read carefully before continuing with the survey. To avoid participant's responses being influenced by branding or prior product knowledge – a less well-known smart thermostat was selected that has been developed by a local SME and is referred to as "Cosy" (see appendix).

Following this presentation, participants were asked to indicate their agreement/disagreement with the following statement: "I would like this product in my home" using a 7 point scale ranging from 1("Strongly disagree) to 7 (strongly agree). After participants had responded to this question, qualitative data was elicited by asking participants to explain why they would like/would not like to have it in their home.

Data Analysis

Notably the survey resulted in both quantitative and qualitative response. Where qualitative responses were collected they were analyzed using the process of thematic analysis in which the analyst[1] (1) familiarizes themselves with the data, (2) codes it, (3) generates initial themes, (4) reviews these themes and (5) defines and names them (Braun & Clarke, 2006). An inductive approach was taken whereby the themes identified were strongly linked to the data. Hence, themes were largely identified at the semantic level.

Results

Consumer understanding of smart thermostats

To investigate consumer's awareness of smart thermostats, participants were asked "What does the term smart thermostat mean to you?" The emerging categorizations are provided in Table 2. The wide-ranging responses given to this question are indicative of the divergence of knowledge that consumers have about smart thermostats. Just under a third of respondents (29%) admitted they were unsure or didn't know, while others simply described the features of a regular thermostat or erroneously confused the capabilities of smart thermostats with the capabilities of smart meters and/or in-home-displays (i.e., energy feedback).

Where consumers did appear to have some knowledge, their explanations of smart thermostats tended to emphasize the various features and capabilities of smart thermostats, most prominently 35% reported that smart thermostats would enable them to control their heating remotely or via their smart phone, while other respondents emphasized different features including automation/self-learning (6.75%), internet connectivity (4.97%), and enhanced programming capabilities (2.18%). These different emphases likely reflect participant's exposure to existing advertising of smart thermostats.

Table 2: What does "smart thermostat" mean to consumers? Categorization of responses.

Category	Example of participant response within category	Category frequency
Remote/smart phone control	*"One you can program away from the home"* *"Controllable by your smart phone"*	34.66%
Unsure	*"Bugger all" "Nothing" "I am unsure" "Don't know" "No idea"*	29%
Smart meter/energy feedback	*"Smart meter, you can easily see what you have used"* *"Display that shows you your energy use in real time and how much it costs"*	7.55%
Learning/Automation	*"It changes the temperature itself"* *"A thermostat that learns your patterns and automates some of your heating"*	6.75%
Internet/Wi-Fi control	*"It is connected through the internet"* *"Use wif-fi to control heating"* *"It can be controlled over the internet"*	4.97%
Control/Heating/Efficiency	*"Gives you more control of heating system"* *"Always in control" "Efficiency and control"* *"Makes life easier"*	4.77%
Describe thermostat	*"Turns heating on when the temperature lowers"* *"Senses the temperature in the room and adjusts accordingly"*	4.57%
Negative response	*"Nothing but more trouble"* *"I don't care either way - fed up with "smart" everything"*	2.28%

[1] In this case the author of this paper.

Category	Example of participant response within category	Category frequency
Programmable	*"Thermostat that can be programmed from outside the home"* *"Can be programmed to change heating levels whenever needed using a smartphone"*	2.18%
Money/Energy Saving	*"When it says smart – saves you money, I guess"* *"Controls your heating and helps to save you money"* *"Energy saving"*	1.59%
Misc (Positive, electronic/technical, branded product)	*"Sounds good" "Something technical" "like Nest"*	1.69%

The appeal of "smart"

Participants responses towards the term smart are best characterized as ambivalent or "luke-warm", with the largest proportion of respondents (48.6%), reporting that they felt neither positive/nor negative towards the term "smart" and the second largest proportion of respondents (31.1%) feeling somewhat positive towards it.

Table 3: Feelings towards "smart"

Which of these best describes how you feel towards the term smart (e.g., smart thermostat, smart home, smart TV)?	
Response options	**Percentage of sample**
Extremely positive	9.7
Somewhat positive	31.1
Neither positive nor negative	48.6
Somewhat negative	6.9
Extremely negative	3.8

The appeal of different smart thermostat features

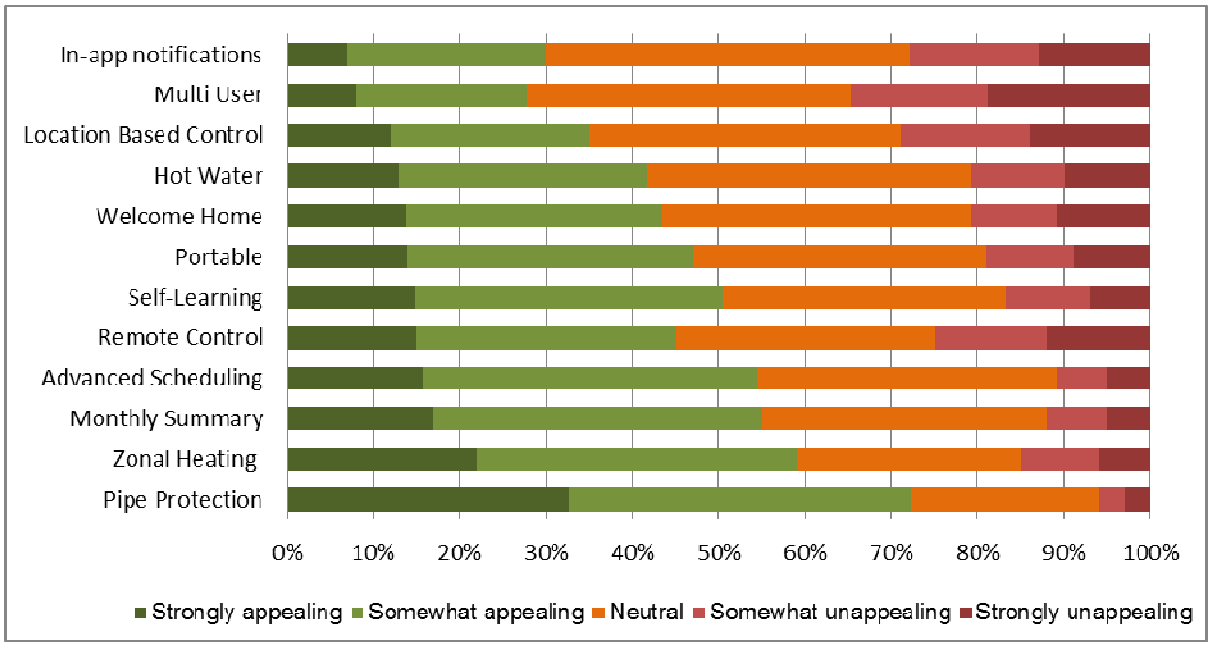

Figure 1: Reported appeal of different smart thermostat features

This “luke-warm” response to smart thermostats continued to present itself in participant’s responses to the appeal of different smart thermostat features (see figure 1, below) with “somewhat appeal” and “neither appealing nor unappealing” featuring as the predominant responses given by participants. Part of the reason for this may be because while brief explanations were provided about each of these features, it is probably difficult to report on their appeal without experiencing them. Nonetheless, the results provide an indication of the most and least appealing features of smart thermostats.

The features considered most appealing (i.e., those rated by over 50% of the sample as either somewhat or very appealing) were: Pipe protection, Zonal heating, Monthly summary, Advanced Scheduling, Self-learning.

The features considered most unappealing (i.e, those rated as either somewhat or strongly unappealing by 25% or more of the sample) were multi-user, location-based control, in-app notifications and remote control.

There is some indication in the preferences expressed for different smart thermostat features that prospective consumers find less technologically advanced features to be more appealing (e.g., 73% reported pipe protection was appealing compared to 35% that reported location based control was appealing).

Consumer willingness to adopt the smart thermostat “Cosy”

As indicated in the figure 2, demand for the smart thermostat “Cosy” was somewhat lackluster with just 19% agreeing that they would like the product in their home. Approximately half of those surveyed (55%) said they would *not* like to have the product in their home, while just over a quarter (26%) of respondents had no opinion either way.

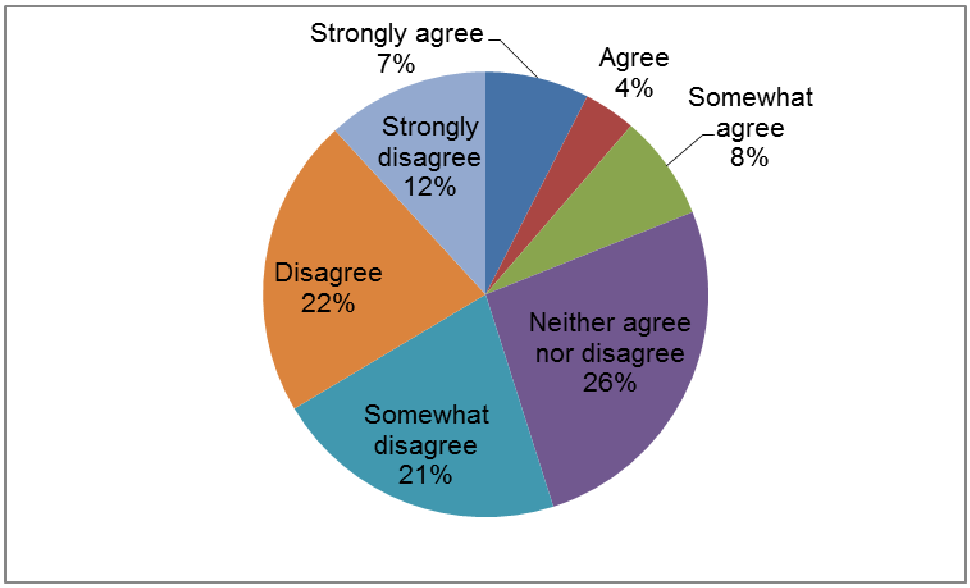

Figure 2. Responses to “I would like to have this smart thermostat in my home”

Investigation into the drivers and barriers for smart thermostat acquisition”

The thematic analysis of the reasons participants gave for wanting/not wanting the smart thermostat in their homes are summarized below in Tables 4 and 5, with the major themes (i.e., those that were more predominant in the dataset) listed first. The frequency of these themes within the dataset is shown in Figure 3. These are reflected on further in the discussion section.

Table 4: Table of themes reflecting barriers to smart thermostat adoption

Themes for barriers to smart thermostat adoption	Illustrative Quotes
Superordinate theme 1: No need for it (n=182)	
Subtheme 1.1: No obvious advantages to it	*"Don't see the point"*
Subtheme 1.2: Satisfied with existing system	*"I can control my heating well enough already"*
Subtheme 1.3: Not relevant for my circumstances	*"I don't need it. I am here all the time, it is easy to tweak the thermostat if necessary"*
Subtheme 1.4:Does not fit with heating preferences	*"I would only turn on the heating when I am in the house and not before"*
Superordinate Theme 2: Nonspecific objection (n =116)	
Subtheme 2.1:No reason	*"Don't know" "No particular reason"*
Subtheme 2.2: Not sure	*"Unsure" "Undecided" "Not sure about it"*
2.2.1:Need further info	*"Don't know enough about it yet"*
2.2.2: Might not use it	*"Not sure I would use the functionality of it"*
Superordinate Theme 3: Technology resistant (n =81)	
Subtheme 3.1: Effortful/complex	*"It seems a lot of faff for something I already do"*
Subtheme 3.2: Gimmicky	*"Yawn...not needed. Another 21st century 'improvement'"*
Subtheme 3.3: Security/Privacy concerns	*"Don't want the risk of being hacked/burgled"*
	"Also I don't like the big brother aspect of the tracking"
Superordinate Theme 4:Cost (n =65)	
Subtheme 4.1:Affordability concerns	*"I could never afford it"*
	"I think it will cost a lot"
Subtheme 4.2: Cost/benefit justification unclear	*"Nobody in the house has a smart phone so the costs would be too high to make it worthwhile"*
	"May not save me any money"
Superordinate theme 5: Compatibility concerns (n=37)	
Subtheme 5.1: Won't fit with heating system	*"I don't think our system is able to use it – too old"*
Subtheme 5.2: No smart phone	*"Do not have or intend to have a smart phone so many features would be useless"*
Superordinate theme 6: Other (n =13)	
Subtheme 6.1: Aesthetically unpleasing	*"The unit itself is ugly"*
Subtheme 6.2: Domestic "discussions"	*"Could potentially create more conflict"* *"Each person would not agree on the settings"*
Subtheme 6.3: Dislikes "Cosy" concept	*"Loathe the name Cosy"* *"It seems a bit poncy"*
Subtheme 6.4: Not a home-owner	*"My home is rented, I can't change anything"*

Table 5: Table of themes reflecting drivers to smart thermostat adoption

Themes for drivers for smart thermostat adoption	Illustrative Quotes
Superordinate theme 1: Control (n =147)	
Subtheme 1.1: Ease of use	"*Easy control of the temperature*"
Subtheme 1.2: Flexible Scheduling	"*Heating to suit us and our needs*"
Subtheme 1.3: Zonal heating	"*I like how you can have different zones*"
Subtheme 1.4: Remote control	"*My home takes time to heat up. I live alone so I could turn heating on remotely*"
Subtheme 1.5: Convenience	"*It would be nice to have at your fingertips rather than rummaging in the cupboards*"
Superordinate theme 2: General positivity (n =95)	
Subtheme 1.1: Perceived usefulness	"*Sounds like a good idea*" "*seems useful*"
	"*It seems like the ideal solution for home heating*"
Subtheme 2.1: Aesthetically pleasing	"*It looks stylish*" "*looks good*"
Superordinate theme 3: Quality of life (n =88)	
Subtheme 4.1: Warmer & happy	"*As it means I am happy if I am warm*". "*For general comfort and well-being*"
Subtheme 4.2: A simpler life	"*Would make life easier*". "*Easy to use and simple for a better home*"
Superordinate theme 4: Savings and efficiency (n =65)	
Subtheme 4.1: Money saving	"*It will save me cash!*"
Subtheme 4.2: Efficient	"*Looks an efficient system to use*"
Subtheme 4.3: Energy saving	"*Will save you energy*"
Superordinate theme 4: Technology embracing (n =13)	
	"*A clever piece of technology*"
	"*It looks to be modern and an intelligent device. Something I would like to try out*"

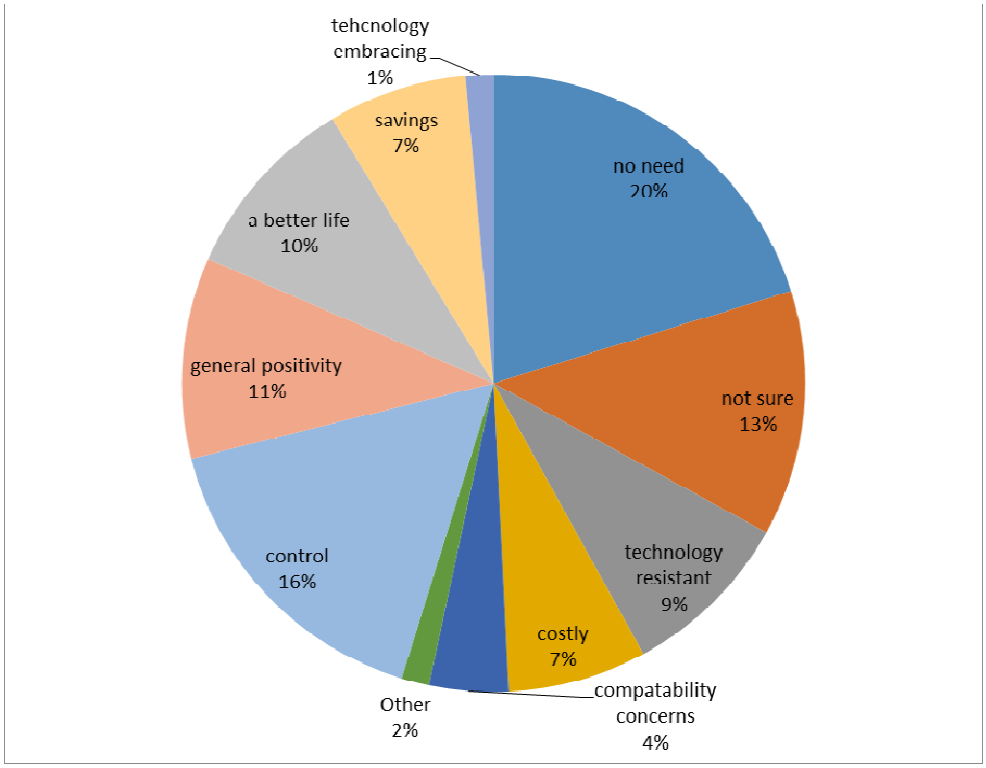

Figure 3: Frequency of reasons given for willingness (or not) to adopt smart thermostats

Discussion

Challenge 1: An apathy for "smart" and ill-informed consumers

Interestingly almost half of the respondents surveyed indicated that they neither felt negative or positive about the concept of "smart", indicating apathy. Moreover, perhaps unsurprisingly given the relative new entry of smart thermostats into the marketplace, approximately one third of our sample were unable to explain what the term means, while others explained the term incorrectly. There were also varying expectations in what "smart" might mean with some consumers presuming smart means self-learning and others anticipating monetary savings from improved efficiency. This, along with the other erroneous explanations indicates a lack of understanding about what smart thermostats are and what they can do. Indeed, this proposition is line with reports that consumers are still somewhat misinformed about smart thermostat capabilities [1], and statistics showing that 32.5% of people either have "no idea" (10.7%) or "a vague idea" (21.8%) about what smart home technologies are [11].

Solution 1: Rethinking "smart"

Evidently if the smart thermostat market is to continue growing there's a real need to communicate to prospective consumers what they are and what they can do. In communicating this, marketers should be aware of the wider context in which they are marketing their product and how this might feed into confusion about their product's capabilities. For instance, in the present research respondents confused smart thermostats with smart meters, presumably due to the wide spread advertising campaigns that are currently being run to support the UK government's mandated smart meter roll-out. This is problematic as it can lead to expectations that are not likely to be met (e.g., one respondent reported that a smart thermostat would stop him having to submit meter readings to him energy providers while another reported that that it would provide them with feedback about the cost her energy consumption). This issue is further complicated by an increasing number of market competitors that offer home heating products with various functionalities but persist in labelling them as "smart thermostats". Not only may this pre-fix of smart lead to product confusion but it may not actually be that effective in appealing to consumers as indicated by consumer apathy towards the concept of smart. Moreover, the meaningless jargon of "smart thermostat" sounds cold and technical

and may only appeal to early adopters. Worse, still it has the potential to alienate consumers with a growing hatred of smart, as one respondent puts it they're "*fed up with 'smart' everything*", while another stated, "*smart is an over-used, generally meaningless PR term*". Given this, there appears to be a real need to consider dropping the industry jargon, and instead providing clear descriptions to customers about what the product is and what it can do for them.

Challenge 2: Getting consumers excited about smart thermostats

In a similar vein to challenge 1, there seemed to be a real lack of excitement around smart thermostats. While consumers did not vehemently oppose them, there seemed a real lack of urgency to acquire one with just 12% of those surveyed either agreeing or strongly agreeing that they would like to have a smart thermostat in their homes.

Closer investigation into why this was revealed that a major barrier is that people simply could not see the need for it or how it would benefit them ("*It would be nice to have but it's not essential*"). Many respondents reported that they were satisfied with their current heating systems and that it did not seem to fit with their existing heating requirements and/or preferences (e.g., "*Over the top for my needs*", "*I certainly wouldn't engage in the bizarre behavior of heating my home using an app when I'm not even at home*"). There was also a perception that smart thermostats would be costly and not worth it ("*I do not think it does much that I need that I cannot already achieve…It is probably far too expensive for the possible benefits*").

Another key factor that explained people's willingness to acquire a smart thermostat was their technology receptivity. Indeed 10% of reasons related to this with 9% attributable to technology resistance while 1% of reasons were indicative of a willingness to embrace technology. This is in line with findings that smart thermostats appeal to early adopters [1] and that early adopters are more likely to perceive stronger benefits of smart home technologies [11].

Where technology resistance was cited as a barrier this was due to concerns that it would be "*complex to learn*", "*effortful*" and a "*faff*". Others were more dismissive of it based on beliefs that "smart thermostats" were just another novelty gadget with a short life expectancy (e.g., "*It's a gimmick that will not last*"). Interestingly, perceptions that smart thermostats would be effortful to operate or a short-lived fad were often justified with explanations that it offered them no benefit in terms of functionality that they could not achieve themselves, again underpinning (e.g., "*It is technology for technologies sake, it is totally useless, it is not difficult to turn a thermostat up and down…*" "*Apps etc are just unnecessary hassle. If I'm cold, I'll turn it on, if I'm hot, I'll turn it off*", "*It seems a lot of faff for something I already do*")

Solution 2: Demonstrating the benefits

If consumers are to part with the cash needed to acquire a smart thermostat, then it needs to be clearer to them that they are not just a modern and bothersome fad, but that they offer tangible benefits that are relevant to them. At present this seems to be somewhat lacking with the largest barrier to smart thermostat emerging as a perceived lack of need. Given that most homes have some sort of heating or cooling system already installed – it's essential to demonstrate what additional benefits could be on offer to them. There are two strategies that can be pursued to accomplish this.

Strategy 1: Explicating and demonstrating the "universal" benefits

The more universal benefits that appeal to a wider range of the population need to be emphasized such as convenience, enhanced control, and a more comfortable home life. Indeed, these factors all emerged in the present research as drivers for smart thermostat adoption. In line with this, prior research has identified that UK households would value improved levels of control and convenience over the heating controls, in particular, "being able to control the temperature at different times in different rooms from one panel" and "being able to turn the heating on before getting home" [13]. In a similar vein, reducing effort, saving time, improving comfort and quality of life were amongst some of the main benefits perceived by end-users of smart home technologies [11]. If these benefits of smart home technologies are already perceived as desirable and feasible then it makes sense to promote them, but in such a way that they are concretely linked to how consumers may use or want to use heat in their home, rather than alluding to the benefits in a broader way (e.g., improved energy efficiency). Of course, efforts should be made to avoid promising consumers benefits they do not

stand to realistically gain. For instance, caution should be exercised in offering consumers savings on their energy bills that they may not obtain, given that this is dependent on how the technology is used and implemented within the home environment. Indeed, smart thermostat NEST was reportedly facing a $350 lawsuit through misleading buyers on savings [14].

Strategy 2: Spelling it out: who benefits and how?

An additional strategy that may be taken is to spell out to prospective end-users how a smart thermostat would work for them in their circumstances rather than relying on consumers to imagine prospective benefits. This may entail tailored advertising so that messaging is targeted to specific demographics (e.g., single households, family households etc) or occupations (e.g., shift workers) so that each segment of the population understands what exactly they stand to gain from adopting a smart thermostat. One way in which this could be achieved is using illustrative case studies that cover a diverse range of end-user scenarios. Using such a method it may be possible to shift end-users perceptions of the circumstances in which they may benefit from a smart thermostat. Indeed, in the present research perceptions of how a smart thermostat would benefit them varied, regardless of similar circumstances. For instance, two single respondents each living alone reported entirely different perceptions of whether a smart thermostat would benefit them (e.g., one respondent stated "*The idea is good if you have a busy household but I live on my own so don't have a problem sorting myself out*", while another noted "*I live alone so I could turn heating on remotely*").

In addition to spelling out who stands to benefit form a smart thermostat, marketing also needs to convey information about the compatibility of the product with various home/cooling systems as the present research and previous research identified this concern as a prospective barrier to adoption.

Conclusion

The present research contributes to the growing literature on the appeal of smart home technologies to prospective end users through exploring consumer receptivity to smart thermostats and identifying key drivers and barriers to smart thermostat acquisition. Overall, the findings from this research suggest a somewhat "luke-warm" response to the concept of smart and smart thermostats. While many of those surveyed did not actively reject the concept of "smart" or strongly object to the features that smart thermostats offer, there appeared to be a lack of appetite for having one in their own homes. The main reason for this appeared to be a lack of consumer awareness about what smart thermostats are and the benefits they offer.

This lack of appeal may be counteracted using marketing campaigns to demonstrate the universal appeal of smart thermostats through explicating the desirable (but also feasible) benefits that all consumers stand to gain. It should be clear from such campaigns what smart thermostats can do to improve on existing "non-smart" heating controls so that the increased functionality goes some way toward justifying the expense of replacing them. Another approach to marketing could be to demonstrate who stands to benefit from smart thermostats and how. In the latter case this may be achieved through using illustrative case studies and/or targeted advertising. With these strategies in hand, then there may be some hope that the market for smart thermostats can move from luke-warm to hot.

References

Number references in the text in square bracket. Use “references” style here or Arial 10 justified single space. After each reference skip one line (inbuilt into style). See the examples below

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Appendices

What is Cosy?

Cosy is a wireless home heating system that helps put temperature control in the palm of your hand. Using the Cosy app you and your family can control your home environment – whether you're at home, at work or away. Cosy lets you:

Have three temperature settings – Slumber for when you're asleep or out of the house, Comfy for normal living and Cosy for when you need that extra bit of comfort.

Easily select which setting you want – this can be done either from the portable Cosy display in your home or via your Cosy mobile app.

Create simple heating schedules – set daily temperature profiles to suit your life. You can create up to 7 of these. Cosy then automatically controls your heating for you.