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# CAN **YOU** RESIST?

MASTER'S THESIS IN MARKETING COMMUNICATION

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The influence of limited-time scarcity  
and limited-supply scarcity on females  
and males in hotel booking apps

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The influence of limited-time scarcity and limited-supply scarcity on  
females and males in hotel booking apps

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### ABSTRACT

Scarcity strategies have been a successful tool employed by marketers within physical retail settings. However, within the next years, the use of online shopping – and in particular mobile shopping applications – is likely to continue growing as consumers prefer to purchase products in convenient ways. Recently, studies have found that the employment of digital nudges can facilitate consumer purchases online. A well-known digital nudge within the context of online shopping, which is already applied by large online retailers (in addition to physical retailers), is the scarcity principle. However, significant differences appear in the way women and men behave in online purchasing and respond to persuasive cues such as scarcity tactics; these differences must be considered.

#### *Aim*

To address this research gap, this study investigates to what extent two different scarcity messages – limited-time scarcity (LTS) and limited-supply scarcity (LSS) – influence (i) perceived novelty, (ii) perceived exclusiveness, (iii) perceived value, and (iv) purchase intention of females and males in viewing a hotel booking offer in a hotel booking app.

#### *Methodology*

A twice two (LTS/no LTS) by two (LSS/no LSS) by two (male/female) between-subjects design is performed with a total of  $n = 320$  respondents (160 male and 160 female) from Europe, who actively make purchases online and were recruited for the online experiment. Respondents were randomly assigned to any of four conditions: (i) LTS claim, (ii) LSS claim, (iii) combination LTS and LSS claim, or (iv) no scarcity claim. The experiment, additionally, included a short questionnaire for measuring perceived novelty, perceived exclusiveness, perceived value, and purchase intention.

#### *Discussion*

The results of this study suggest that there is a main effect of perceived scarcity. Moreover, LTS negatively impacts perceived novelty, and fear of missing out (FOMO) is found to be higher in any scarcity condition for females than for males. There is also a significant interaction effect between gender and LTS and LSS on purchase intention.

#### *Conclusion*

Implications and research directions for further research are stated.

*Keywords:* limited-time scarcity; limited-supply scarcity; purchase intention; perceived value; perceived exclusiveness; perceived novelty; gender

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## 1. INTRODUCTION

Forecasts show that mobile commerce – selling goods and services through wireless devices – accounts for 45% of all e-commerce (Lazar, 2017). A study from the consultancy firm PricewaterhouseCoopers (PwC; 2017) demonstrates that between 2013 and 2017 mobile shopping grew steadily. Additional research indicates that within the next few years the use of mobile shopping applications (apps) is likely to continue growing as consumers prefer purchasing in convenient ways (Lazar, 2017; Shukairy, n.d.; Solomon, 2015; Wong, 2015).

The continuing boom in mobile shopping leads retailers to rely on new strategies to offer consumers more possibilities during the purchase journey. With the aim of facilitating consumer decision making on screen, several strategies to create an enhanced online atmosphere are currently under discussion. Recent studies show that the implementation of digital nudges can be a supportive tool to facilitate online consumers' purchase decision making. According to Mirsch, Lehrer, and Jung (2017), "digital nudging is an approach based on insights from behavior economics that applies user interface (UI) design elements to affect the choices of users in digital environments" (p. 634). Different scarcity types – known as limited-time scarcity and limited-quantity scarcity (divided into limited-supply and limited-demand scarcity) – are frequently used among retailers and demonstrate effective impacts on purchase intention (Cialdini, 1984; Lee, 2009; Ling & Yazdanifard, 2014; Mirsch et al., 2017). Specifically, the majority of the big online retailers – such as Amazon.com and Booking.com – primarily applies limited-time and limited-supply scarcity claims.

Apart from this, several previous studies on effective mobile marketing strategies emphasize the need for further research on gender differences since "gender is a (...) crucial factor which affects every single process during online purchasing" (Ling & Yazdanifard, 2014, p. 54). Significant differences appear in the ways women and men behave during online purchases and respond to persuasive cues such as scarcity (Czap, Czap, Khachatryan, & Burbach, n.d.; Ifezue, 2010; Kraft & Weber, 2012; Perju-Mitran & Budacia, 2015). Further research (Mirsch et al., 2017; Occur, 2015; Sharma, Gupta, & Sharma, 2014) recommends establishing the effects of scarcity in different contexts (including the online context) and product categories to "better understand the role of gender in influencing the consumer buying behavior" (Gupta, 2013, p. 130).

By addressing this research gap, this paper investigates the extent to which limited-time and limited-

supply scarcity (LTS and LSS) influence (i) perceived novelty, (ii) perceived exclusiveness, (iii) perceived value, and (iv) purchase intention for females and males using purchase apps. Within the context of scarcity, these listed aspects are known as primary antecedents of purchase intention – a key index in forecasting the actual purchases of customers – and, thus, the profit a company makes (Fishbein & Ajzen, 1975; Haque, Yasmin, Sarwar, Ibrahim, & Momen, 2015). In order to study the impact of scarcity in relation to gender, this study considers a hotel booking as a gender-neutral product. Considering aforementioned factors, the central research question of this paper is as follows:

*To what extent do limited-time scarcity and limited-supply scarcity influence the perceived novelty, perceived exclusiveness, perceived value, and the purchase intention of females and males in viewing a hotel booking offer in a hotel booking app?*

The paper starts with a literature review to provide a theoretical foundation. Subsequently, the conceptual model and the resulting hypotheses are outlined next to the research methodology and the research design. Last, research results are drawn with implications and further research directions.

The insights of this study will provide additional information for researchers and practitioners who aim to examine or design scarcity nudges in purchase apps to (i) have a better understanding of who is most vulnerable to scarcity claims and (ii) how consumers can be made more resistant to these kinds of claims. Additionally, the results serve to make consumers more aware of the influence of scarcity claims on their purchase behavior. Finally, the study contributes to the theory of digital nudges.

## 2. THEORETICAL FRAMEWORK

Cialdini (1984) has developed a theory of influence that involves six major principles of persuasion to convince people and influence their behavior in an ethical way: (i) reciprocation, (ii) commitment and consistency, (iii) social norms/social proof, (iv) liking, (v) authority, and (vi) scarcity. Previous studies have demonstrated that these principles are successful in a variety of contexts including online commerce (i.e., encouraging the purchase) as well as in facilitating less harmful behavior, such as promoting recycling and preventing tax evasion (Cialdini & Goldstein, 2004; Mirsch et al., 2017; Sunstein, 2014). The scarcity principle is frequently and effectively used by online retailers insofar as it prompts custom-

ers' purchase decisions; Booking.com and Amazon.com are just two well-known paradigms applying scarcity within online commerce. Scarcity is the focal point of this study. The following sections outline the underlying ideas of purchase intention and scarcity, as discussed in previous studies (Bae & Lee, 2009; Cialdini, 1984; Ling & Yazdanifard, 2014; Mirsch et al., 2017).

## 2.1 Purchase intention and its antecedents

Known as a key performance indicator in forecasting the actual purchases of consumers, purchase intention describes "the probability that the consumer will purchase the product" (Sam & Tahir, 2009, p. 4). Increasing the purchase intention of consumers results in an increase in profits (Chao-Chien & Chen, 2014; Fishbein & Ajzen, 1975; Haque et al., 2015). For this reason and given that scarcity positively triggers purchase intention, it is used as a primary measurement within this study.

Several previous studies have addressed purchase intention and its antecedents that stimulate and drive consumers to buy a product. Among the many influential factors are (i) the website's functionality/ quality (Chi, Yeh, & Tsai, 2011), (ii) perceived value (Eisend, 2008; Gan & Wang, 2017; Ondang, 2015), (iii) perceived novelty (Esch & Winter, 2009), (iv) perceived exclusiveness (Van Herpen, Pieters, & Zeelenberg, 2014), (v) product involvement (Drossos, Kokkinaki, Giaglos, & Fouskas, 2014), and (vi) trust (e.g., in the product) (Chen, 2012; Li, Kim, & Park, 2007; Meskaran, Ismail, & Shanmugam, 2013; Park, Lennon, & Stiel, 2005). Since within the context of scarcity, various previous studies have emphasized measuring the effect of scarcity on (i) perceived novelty (Esch & Winter, 2009), (ii) perceived exclusiveness (Van Herpen et al., 2014), and (iii) perceived value (Eisend, 2008; Wu, Lu, Wu, & Fu, 2012), which are primary precursors inducing purchase intention (further investigated in succeeding paragraphs), these are considered as measurements next to purchase intention.

### Perceived novelty

Andrews and Smith (in Esch & Winter, 2009) claim that perceived novelty is a multidimensional construct which comprises seven binary characteristics: "dull/exciting, routine/fresh, conventional/unconventional, predictable/ novel, usual/unusual, ordinary/unique, [and] commonplace/original" (Andrews & Smith, in Esch & Winter, 2009, p. 15).

Esch and Winter (2009) investigated the evaluation and reciprocal effects of limited editions in the offline context and claim that a message of scarcity leads to a "scarce= novel" (p. 4) heuristic. To put it simply, limited items score higher on perceived novelty compared to non-limited items. Scarcity claims act as a signal for something unique and novel in the eyes of the consumers. Consumers, consequently, deduce from the limitation the novelty of a product since they "draw conclusions from limited availability to the offers' distinctiveness" (Esch & Winter, 2009, p. 4), eventually increasing the product's attractiveness and its perceived novelty. "People seek to establish and maintain (...) self-distinctiveness" (Schins, 2014, p.18) and attempt to be unique. This effect is also visible for limited-time scarcity claims as revealed in other past studies (Gierl, Plantsch, & Schweidler, 2008; Griskevicius et al., 2009). The intention to buy increases with a time limit, especially when the expiration date of the promotion approaches. At this point, consumers rely on mental shortcuts and do not carefully consider the offer (Aggarwal & Vaidyanathan, 2003; Coulter & Roggeveen, 2012; Inman & McAllister, 1994). Cialdini (1984) explains this phenomenon by stating that "whenever free choice is limited or threatened, the need to retain our freedoms makes us desire them (...) significantly more than previously" (p. 238).

### Perceived exclusiveness

Within their study, Esch and Winter (2009) further claim that consumers "conclude from the limitation to the exclusiveness of the product" (p. 7). Perceived exclusiveness is when something is experienced as special, superior, and unique (Esch & Winter 2009). Schins (2014) argues that scarcity claims can stimulate the desire of consumers to be special and distinctive. Consumers want to feel exclusive and different. They, for example, experience a limited-edition item as something superior, because they are one of the lucky ones owning it. Scarcity claims encourage this effect by signaling exclusiveness leading to an increased symbolic benefit for both limited editions and limited time frames (Gierl et al., 2008; Griskevicius et al., 2009; Schins, 2014). Again, this phenomenon can be explained by the fact that scarce items raise the feeling of being restricted in choice, consequently creating the impression of a higher need for the item (Cialdini, 1984). Additionally, a short time activates heuristics and leads consumers to impulse buying (i.e., unplanned purchase) (Aggarwal & Vaidyanathan, 2003; Coulter & Roggeveen, 2012; Inman & McAllister, 1994).

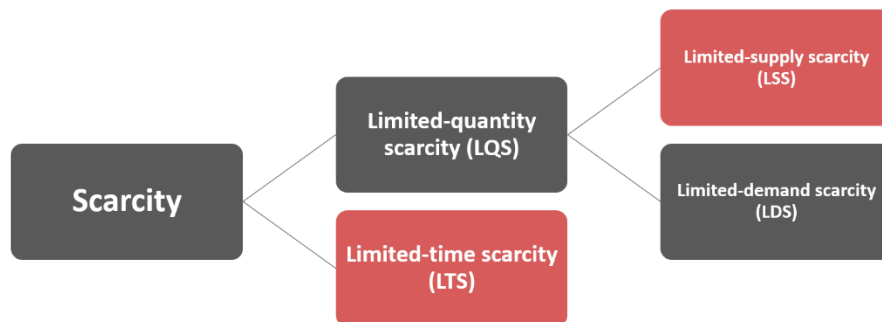


Figure 2.1. Scarcity types

## Perceived value

According to Chen (2012), perceived value is when the benefits of a certain item outweigh the costs. When the product has high quality in the consumer's eyes, the benefits are perceived as greater and the purchase intention increases. Kuo, Wu, and Deng (2009) go a step further and state that the "customer's perceived value can be defined from the perspectives of money, quality, benefit, and social psychology" (p. 888). Within the money context, perceived value is known as benefits that outbalance the costs; within the quality context, perceived value is due to an excellent quality/price ratio. Within the benefit context, perceived value is because of an excellent performance/price ratio. The social psychology perspective puts forward that goods carrying meanings (e.g., cultural meanings) are more likely to increase the perceived value. Since the present study considers a fictive purchase, the post-purchase behavior and attitude cannot be measured. On that score, perceived value is covered as the appraisal of a product in the consumer's eyes based on initial pre-judgements about the product's benefits and its costs.

The principle of scarcity can be influential in positively prompting the consumer's perceived value (Suro, Kohli, & Monroe, 2007). Cialdini (1984) and Mirsch et al. (2017) argue that scarce products lead people to develop a very strong desire to buy an item which, conversely, decreases their decision time. Additionally, scarcity claims let items appear more special and, thus, increase the consumer's perceived value of a product (Lynn, 1991). Subsequent paragraphs describe the scarcity principle in more detail and the relevance of (i) purchase intention, (ii) perceived exclusiveness, (iii) perceived value, and (iv) perceived novelty.

## 2.2 Limited-time scarcity and limited-supply scarcity

The principle of scarcity says that "people seem to be more motivated by the thought of losing something than by the thought of gaining something" (Cialdini, 1984, p. 205) – which is well known as psychological reactance. Eventually, people develop a strong desire to buy a scarce item which then decreases their decision time since they rely on mental shortcuts (Cialdini, 1984; Mirsch et al., 2017). Such loss-framed messages are more likely to be perceived as persuasive since people act risk-aversely (i.e., avoid risk) (Gass & Seiter, 2016; Tversky & Kahneman, 1981). As formerly mentioned, consumers perceive scarce items as having higher value, exclusiveness, and novelty.

Scarcity is divided into four principles (see **Figure 2.1**): limited-quantity scarcity (LQS), limited-supply scarcity (LSS), limited-demand scarcity (LDS), and limited-time scarcity (LTS) (Gierl et al., 2008; HireVue Accelerate [HV Accelerate], n.d.). As introduced above, only LTS and LSS are considered for this study since they are considered as the most suitable scarcity claims due to their excessive application among (online) retailers.

Limited-supply scarcity (e.g., *limited edition*) and limited-demand scarcity (e.g., *10 items left in stock*) are both subcategories of LQS. Limited-supply scarcity implies that units of items are limited from the beginning (Gierl et al., 2008) while limited-demand scarcity infers that the supply cannot meet the demand (Schins, 2014).

According to Gupta (2013), LQS messages are primarily based on the competitiveness theory (further investigated in paragraph 2.3). Through a sellers' signaling limited availability of items, consumers are induced to buy since they do not want to miss the



choice option (Kovic & Laissue, 2016; Schins, 2014). They are motivated “to compete with one another for the limited number of items available for purchase” (Gupta, 2013, p. 13). Many marketers now apply LSS and LDS claims to nudge consumers’ behavior. Recently, the Italian company Ferrero, for instance, released limited editions jars of its brand Nutella, each one entirely different than the next. The exclusive designs prompted consumers to compete with one another to directly get one of the special Nutella jars (LSS). Another example in online purchase is Booking.com. The hotel booking platform pushes consumers by displaying the room availability in the hotels such as *only seven rooms left* or *in high demand! Booked 19 times in the last 24 hours* (LDS). When consumers receive all these notifications, they begin to estimate how much time is left until all hotel rooms are booked, nudging them to book directly.

Given the evidence (Godinho, Prada, & Vaz Garido, 2016; Schins, 2014), LQS has a huge positive impact at both the final stage and the beginning stage of the consumer decision-making process by appealing attractive, initiating the urge to buy, and reducing the decision time of consumers.

Although many studies have been conducted within offline settings, research revealed that LSS positively influences (i) purchase intention (Aggarwal & Vaidyanathan, 2003; Bae & Lee, 2010; Eisend, 2008; Wu et al., 2012), (ii) perceived novelty (Esch & Winter, 2009; Mirsch et al., 2017; Van Herpen et al., 2014), (iii) perceived exclusiveness (Esch & Winter, 2009; Gierl et al., 2008; Griskevicius et al., 2009), and (iv) perceived value (Chen & Sun, 2014; Eisend, 2008). Thus, hypotheses 1, 2, 3, and 4 are proposed as follows:

*H1: Limited-supply scarcity has a positive influence on perceived novelty.*

*H2: Limited-supply scarcity has a positive influence on perceived exclusiveness.*

*H3: Limited-supply scarcity has a positive influence on perceived value.*

*H4: Limited-supply scarcity has a positive influence on purchase intention.*

Different from LSS, LTS deals with a time limit for consumers to use a special promotion (e.g., Black Friday) and encourages them to buy a product directly because the price will be pushed up soon (Gierl et al., 2008; HV Accelerate, n.d.). Past research (Aggarwal & Vaidyanathan, 2003; Coulter & Roggeveen, 2012; Inman & McAllister, 1994) has investigated that the intention to buy increases with a time

limit, especially when the expiration date of the promotion approaches. Eventually, the fear of missing out (FOMO) (further investigated in paragraph 2.3) – which is the primarily theory underlying this scarcity type (Gupta, 2013) – nudges consumers into the urge to buy (Cialdini, 1984). Amazon.com is a well-known example of a supplier that uses the time scarcity tactic in online purchases. The online retailer displays on its product pages notifications such as *Want it tomorrow? Order within ... and choose one-day shipping at checkout*. When consumers process this notification, their urgency level automatically rises. The concern is that marketers are forced to find an optimal time limit for promotions. Chiang, Lin, and Chin (2011) as well as Hanna, Berger, and Abendroth (2005) have found that a deadline that is too short is likely to have a reversed effect leading to sales loss. To elucidate, Hanna et al. (2005) point out that time is forced by awareness and urgency. Longer time limits (i.e., more than 12 hours) lead to greater awareness and to an increase in persuasion knowledge since consumers have time to process the notification. Thus, long time frames negatively affect scarcity and at the same time reduce the urge to make use of a promotional offer (Kahneman & Tversky, 1984). Given the evidence, the current study only investigates on short limited-time scarcity (i.e., below 12 hours) since this has been proven to be most effective.

What applies in this regard too is that many studies have only been conducted within offline settings. Nevertheless, they have examined the positive effect of LTS on (i) perceived novelty (Gierl et al., 2008; Griskevicius et al. 2009), (ii) perceived value (Gierl et al., 2008; Suri & Monroe, 2003), (iii) perceived exclusiveness (Gierl et al., 2008; Griskevicius et al., 2009), and (iv) purchase intention (Tan & Chua, 2004; Vermeir & Van Kenhove, 2005). These insights lead to hypotheses 5, 6, 7, and 8:

*H5: Limited-time scarcity has a positive influence on perceived novelty.*

*H6: Limited-time scarcity has a positive influence on perceived exclusiveness.*

*H7: Limited-time scarcity has a positive influence on perceived value.*

*H8: Limited-time scarcity has a positive influence on purchase intention.*

Past research results (Aggarwal, Jun, & Huh, 2011; Devlin, Ennew, McKechnie, & Smith, 2007) have shown that any LQS claim (i.e., LSS and LDS) is more effective in triggering consumers than LTS messages.

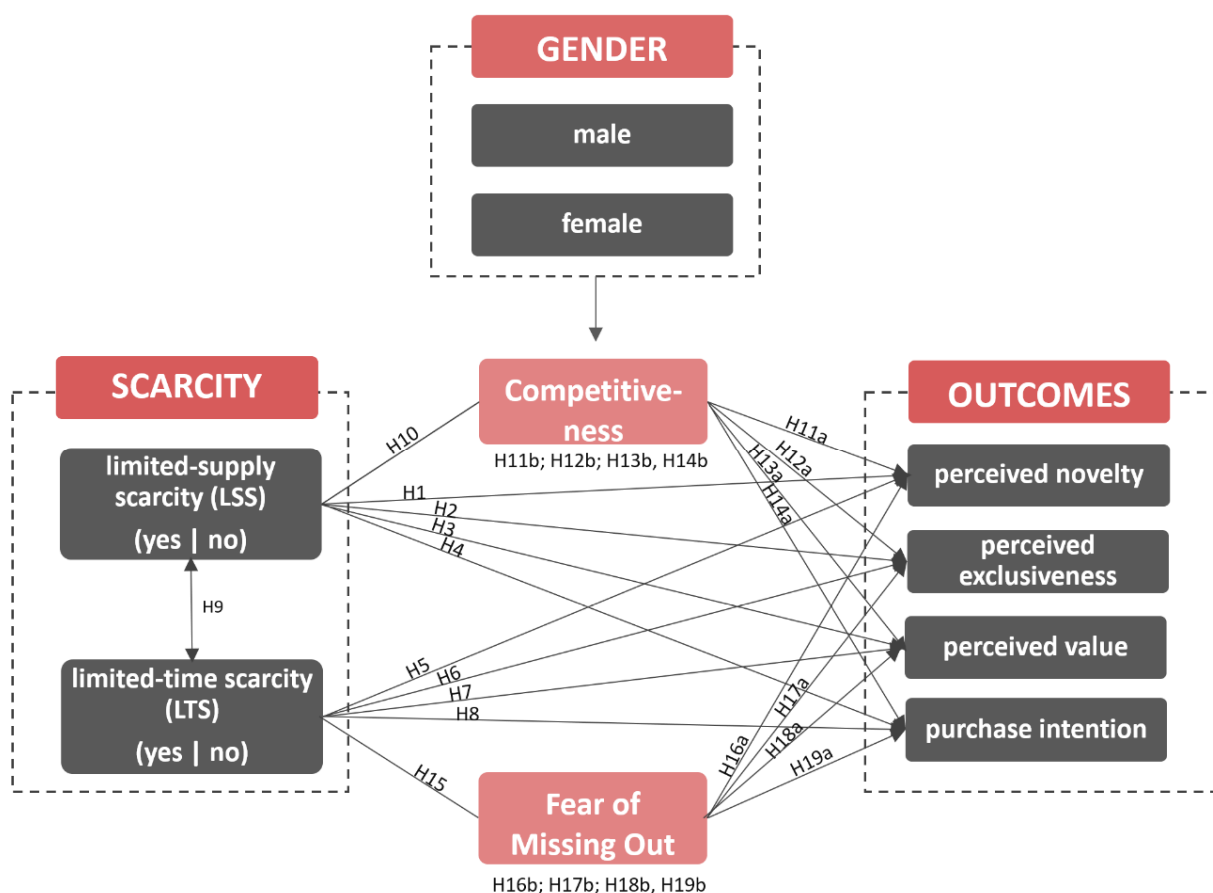


Figure 2.2. Conceptual framework

As already introduced, LQS underlies the competitiveness theory. Consumers are forced to compete against each other since they do not want to miss a limited item (Kovic & Laissue, 2016; Schins, 2014). However, both principles – LTS and LSS – can trigger customers to the same extent to overrate the product's- and/or the offer's value resulting in a higher purchase intention. A combination of both tactics can positively trigger potential customers, especially when targeting deal prone customers (i.e., those actively searching for offers) (Schins, 2014). "Scarcity appeals might then increase the transaction value (i.e., value of the deal) which makes consumers more susceptible to the promotional offer" (Schins, 2014, p. 10). Therefore, hypothesis 9 and 10 are proposed as follows:

*H9: Limited-supply scarcity results in higher perceived scarcity than limited-time scarcity.*

*H10: Limited-supply scarcity and limited-time scarcity positively strengthen the influence of each other.*

### 2.3 The moderating factor of gender

Earlier results on gender's moderating effects on scarcity have revealed inconsistent findings. To demonstrate, in her dissertation, Gupta (2013) conducted qualitative and quantitative research in physical retail settings proposing mixed results for the role of gender. When considering both male and female consumers with high hedonic shopping motivations (i.e., those who experience shopping as pleasant), gender differences disappeared. Thus, the extent to which males and females experience shopping as hedonic seemed to influence their decisions. Consumers with high hedonic shopping motivations derive pleasure and satisfaction from gaining scarce products. In that sense, taking advantage of a scarcity promotion is equated with winning a competition. However, these findings are validated for fast-moving consumer goods (i.e., products sold quickly for at a low cost).

Various other studies (Axelsson & Hörlén, 2017; Czap et al., n.d.; Esposito, Hernández, Van Bavel, & Vila, 2016; Ifezue, 2010; Van Aswegen, 2015), however, have revealed gender differences in purchase behavior – also mostly performed in physical retail



settings, but with different item categories (e.g., digital product, game, letter). To go a step back, in the past, purchasing was characterized as a duty for females (Paoletti & Kregloh, 1989). In recent times, females are still more positive about purchasing than males and spend comparably more time on it (Allegra Strategies Limited, 2002; Campbell, 1997). This study proposes that LTS and LSS drive the psychological processes of female and male consumers differently.

Competitiveness theory proves that through the limited availability of items, LSS arouses motivation in consumers to compete against each other. In that sense, a study by Nichols (2012) has exposed that female consumers have lower levels of competitive arousal than male consumers and proposed that men are more sensible and vulnerable to LSS messages. Otnes and McGrath (2001) and Nichols (2012) also state that men are naturally more competitive and always aim at winning. They may see LSS messages as a competition, which may stimulate an urge to buy. Eventually, it “fulfills their desire to win the game against the retailer and other consumers, thus establishing their self-identity of achievement orientation” (Gupta, 2013, p. 41). Likewise, a past study by Prakash (1992) verified that men prefer hints in advertisements that feature competition while women prefer hints about product reviews and information from other consumers. This phenomenon can be explained through the social role of gender. In the past, women were obligated to look after their children and others while the major role of men included hunting and guarding (Tifferet & Herstein, 2012). Based on these insights, hypotheses 11, 12, 13, 14 and 15 are proposed as follows:

*H11a: Limited-supply scarcity has a positive influence on perceived competitiveness.*

*H11b: Limited-supply scarcity has a stronger positive influence on the perceived competitiveness of males than on the perceived competitiveness of females.*

*H12a: The influence of limited-supply scarcity on perceived novelty is positively mediated by perceived competitiveness.*

*H12b: Limited-supply scarcity has a stronger positive influence on the perceived novelty of males than on the perceived novelty of females.*

*H13a: The influence of limited-supply scarcity on perceived exclusiveness is positively mediated by perceived competitiveness.*

*H13b: Limited-supply scarcity has a stronger positive influence on the perceived exclusiveness of males than on the perceived exclusiveness of females.*

*H14a: The influence of limited-supply scarcity on perceived value is positively mediated by perceived competitiveness.*

*H14b: Limited-supply scarcity has a stronger positive influence on perceived value by males than on perceived value by females.*

*H15a: The influence of limited-supply scarcity on purchase intention is positively mediated by perceived competitiveness.*

*H15b: Limited-supply scarcity has a stronger positive influence on the purchase intention of males than on the purchase intention of females.*

In order to connect with others and to avoid missing something important – a sentiment known as FOMO – consumers feel the urge to directly buy a product when LTS messages are displayed (Gierl et al., 2008; HV Accelerate, 2017). Although there is little research on FOMO (Abel, Buff, & Burr, 2016; Zunic, 2017), particularly within the purchase context, it is proposed that female consumers experience higher levels of FOMO compared to males. This effect is already scientifically validated within the social media context. Researchers (Abel et al., 2016; Zunic, 2017) propose that females have lower self-esteem levels than men resulting in the desire to (i) be part of a community, (ii) stay connected with others, and (iii) be popular. In this respect, females particularly ask their friends more often for advice than males do in order to take the right actions and avoid social exclusion (Garbarino & Strahilevitz, 2002). The social role theory may substantiate this claim. In the past, men were taught to be superior (i.e., dominant) while women were taught to be inferior (i.e., passive and conformist) (Lal, 1985). These findings lead to hypotheses 16, 17, 18, 19 and 20:

*H16a: Limited-time scarcity has a positive influence on perceived FOMO.*

*H16b: Limited-time scarcity has a stronger positive influence on the perceived FOMO of females than on the perceived FOMO of males.*

*H17a: The influence of limited-time scarcity on perceived novelty is positively mediated by perceived FOMO.*

*H17b: Limited-time scarcity has a stronger positive influence on the perceived novelty of females than on the perceived novelty of males.*

*H18a: The influence of limited-time scarcity on perceived exclusiveness is positively mediated by perceived FOMO.*

*H18b: Limited-time scarcity has a stronger positive influence on the perceived exclusiveness of females than on the perceived exclusiveness of males.*

*H19a: The influence of limited-time scarcity on perceived value is positively mediated by perceived FOMO.*

*H19b: Limited-time scarcity has a stronger positive influence on the perceived value of females than on the perceived value of males.*

*H20a: The influence of limited-time scarcity on purchase intention is positively mediated by perceived FOMO.*

*H20b: Limited-time scarcity has a stronger positive influence on the purchase intention of females than on the purchase intention of males.*

### 3. RESEARCH METHODOLOGY

This paper studies the effects of LSS and LTS on perceived novelty, perceived exclusiveness, perceived value, and purchase intention, with gender as a moderator variable followed by FOMO and competitiveness as mediator variables (see **Figure 2.2**).

Previous studies (Occur, 2015; Sharma et al., 2014) have established that interaction effects between product categories and the effects of scarcity can occur since the product influences the extent to which consumers are involved and interested in it, eventually influencing the consumer's attention. Thus, to study the impact of the various scarcity types with respect to gender, an appropriate product category – which is comparable between women and men – needs to be chosen. This choice is done by a focus group whose details are outlined during the further course.

#### 3.1 Research design

For this study, a twice two (LTS/no LTS) by two (LSS/no LSS) by two (male/female) between-subjects design is performed (**Figure 3.1**). The online experiment along with a questionnaire was distributed among female and male consumers (older than 18) from Europe who actively make purchases online. Since the present experiment deals with the

online context, participants were recruited via the Internet, an efficient, cost- and time-effective research terrain that reaches a range of people (Wright, 2005). Respondents remained anonymously, thereby avoiding social desirability bias (Dooley, 2001). Nevertheless, it cannot be ruled out that the experiment faced difficulties with self-selection bias (i.e., potential respondents could have disregard the invitation). Hence, the results cannot be fully generalized (Wright, 2005). To avoid significant bias, a purchase application was designed specifically for this study.

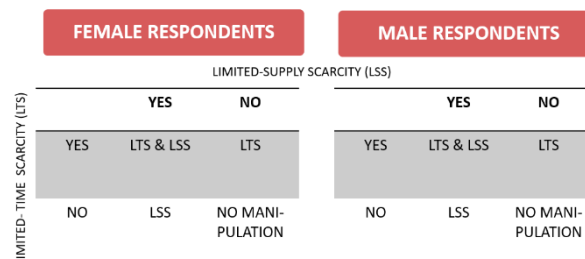


Figure 3.1. Research design

#### 3.2 Research sample

The target group were female and male consumers older than 18 living throughout Europe, who actively make online purchases. Participation occurred on a voluntary basis. Prior to the experiment, respondents were informed of the anonymity of their answers. However, it was mandatory for participants to have mastered the English language since the questionnaire was only distributed in English. The aim was to collect 160 female and 160 male participants in total (40 male/female respondents per condition). To reach respondents, the stratified sampling method (probability technique) was used to reduce sampling error and guarantee an equal number of respondents (Dooley, 2001). With this in mind, females and males were divided into strata. Random sampling was then used to acquire a sufficient number of subjects from each stratum. The online questionnaire was distributed through the social media platform Facebook and through the researcher's own network. Additionally, respondents were asked to kindly share the questionnaire with their contacts. The experiment took place within the period of 16 May 2018 to 29 May 2018.

**Table 3.1** gives an overview of the age distribution of the respondents for each of the four conditions. As indicated, the chi-square value was not significant ( $p > .05$ ), thereby indicating that there existed no relationship between age and the four different conditions. Hence, the variables are independent, and the distribution is due to chance. A total of 320 valid questionnaires were received including 160 females

and 160 males ( $n = 80$  per condition). The respondents' mean age was 25 years ( $SD = 1.27$ ). Fifty-one percent had a bachelor's degree, followed by 26% with an upper secondary school degree and 13% with a master's degree. Seventy-three percent were students, 13% had a full-time job, and 10% had a part-time job. Forty-seven percent were Dutch while 41% were German and 2% were English. Hence, the majority of the participants were from Europe, thereby fulfilling the requirement of the sample to involve consumers from Europe (**Table 3.2**).

Table 3.1. Age per condition ( $n = 320$ )

		CONDITION			
AGE		LSS	LTS	LSS & LTS	CONTROL
18–24	Count	46	48	45	53
	%	57.5	60	56.3	66.3
25–34	Count	32	28	31	23
	%	40	34.9	38.6	28.7
35–44	Count	0	2	0	2
	%	0	2.5	0	2.5
45–54	Count	2	1	3	0
	%	2.5	1.3	3.8	0
55–64	Count	0	1	1	2
	%	0	1.3	1.3	2.5
> 64 years	Count	-	-	-	-
	%	-	-	-	-
Total	Count	80	80	80	80
	%	100	100	100	100

Table 3.2. Nationality per condition ( $n = 320$ )

		CONDITION			
NATIONALITY		LSS	LTS	LSS & LTS	CONTROL
German	Count	32	36	33	33
	%	40	45	41.3	41.3
Dutch	Count	41	35	40	35
	%	51.2	43.7	49.9	43.7
English	Count	1	1	1	4
	%	1.3	1.3	1.3	5
Other*	Count	6	8	6	8
	%	7.5	10	7.5	10
Total	Count	80	80	80	80
	%	100	100	100	100

\*Austria (1.6%), Belgian (1.2%), American (0.6%), Italian (0.9%)

More information on the demographics appears in **Appendix C**. As for the current net income of the respondents, 24% made between 751 and 1,500 euros per month and 23% made between 400 and 750 euros per month, thereby indicating that the respondents within this sample had a low budget available. As regards the online purchase behavior, almost 40% of the respondents purchased online once a month or

less frequently, and 34% purchased once or twice per month. Thus, the majority of this sample was familiar with online purchase and roughly aware of promotions with scarcity claims. Seventy-seven percent booked once a month or less a hotel online and another 17% even never booked a hotel online. Hence, some may be less interested in the chosen product category. Interestingly, almost 51% of respondents actively searched for online offers, and more than 72% enjoyed making online purchases. Thus, the sample predominantly had a hedonic shopping motivation and was deal prone.

### 3.3 Instrument Focus group

#### *Sequence of the discussion*

The online experiment was preceded by a focus group discussion to gain insights on perceived gender-neutral products and scarcity claims serving as input for the online experiment. The focus group was directed within settings of the researcher (all information on the focus group can be found in **Appendix A**).

Prior to the group discussion, participants received a briefing designed not to overly bias them. Participants were informed about the recording of the focus group discussion for analysis purposes and the anonymity of their answers. The discussion took approximately 45 minutes and was facilitated by the researcher herself. Four women and four men between 27 and 55 years – who did not take part in the final study – were randomly recruited from the researcher's own network. These women and men brainstormed in separate rooms about gender-neutral products. In case they did not come up with any suggestions, they were provided with examples from random other studies that used blue jeans (Worth, Smith, & Mackie, 1992), deodorant, or shower gel (Infanger, Bosak, & Sczesny, 2012) as gender-neutral products. They then came together and discussed their suggestions for gender-neutral products with each other. Finally, participants were shown scarcity claims and asked to state when they felt most nudged to take advantage of the offer.

The focus group discussion was based on semi-structured questions allowing for some flexibility in accordance with topics raised and level of participation of the applicants. Questions were primarily aimed at collecting gender-neutral products and appropriate scarcity claims. For generating stimulus material, LTS and LSS claims used by online retailers as well as previous studies on scarcity were con-

sulted (**Appendix A**). Moreover, several online retailers were consulted to gain inspiration for the graphic designs of the claims (e.g., putting scarcity claims in red boxes and some words in capital letters). To control any other potential interaction effects of price or other information about the product, the information was kept consistent across all conditions.

The stimulus material was created by using an own designed purchase app. The app displayed the chosen gender-neutral product combined with different scarcity claims – nine for each condition (**Appendix A**). Since the gender-neutral product was decided upon throughout the discussion, a short break was done during the discussion to tailor and prepare the stimulus material to the chosen product.

### Results and discussion

In the first round, in which female and male participants brainstormed separately, none of the groups needed assistance with ideas. While female participants came up with furniture (e.g., outdoor furniture, sideboards, etc.), hairdryers, and microwaves as gender-neutral products; male participants thought of smartphones, travel books, and DVDs as gender-neutral products. The participants not only discussed their results, but also came up with new ideas for neutral products such as trips. In total, they rated their three top gender-neutral products: (i) furniture, (ii) smartphones, and (iii) trips. Finally, all participants agreed on booking trips online (e.g., a trip to Mallorca) as a gender-neutral product.

After the discussion, participants had a break while the researcher prepared the stimulus material based on the resulted product. Since a trip contains many components (e.g., hotel, free-time activities, arrival mode, etc.) which may influence the effect of the deal and eventually the consumer's choice, it was chosen by the researcher to simply focus on the hotel component to outweigh any interaction effects. Therefore, the researcher created a hotel booking app with a neutral design offering a special deal from a hotel named *Holiday Mallorca*. Additional information on the offer (e.g., price, pictures, and type of room) was kept constant to avoid any other interaction effects. Participants were shown nine LTS claims (**Figure 3.2**; see **Appendix A** for more examples) and nine LSS claims (**Figure 3.3**; see **Appendix A** for more examples).

The results on scarcity claims demonstrate that participants judged the claims by their explicitness. As regards LTS claims, explicit claims involving a limited time frame (e.g., *today's value deal*) and stated discounts (e.g., *-20% today*) were perceived as more

persuasive than vague claims (e.g., *only till 1<sup>st</sup> April 2018*) by which they do not feel nudged at all. Vague claims that include time frames exceeding 12 hours did not nudge participants to take advantage of the offer as much as urgent claims such as *today*. Kahneman and Tversky (1984) explain this phenomenon by arguing that consumers truly believe that the stock or discount certainly expires when recognizing an explicit claim. Hence, they immediately act since they are loss-averse.

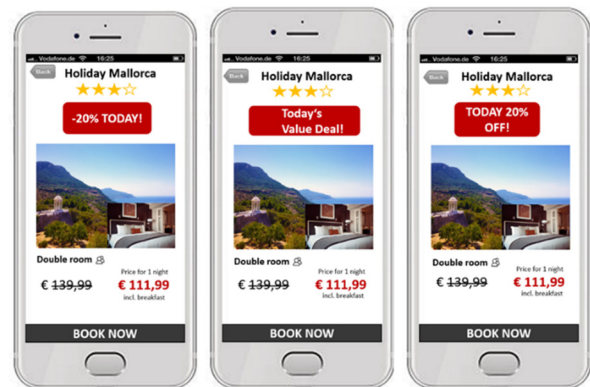


Figure 3.2. Example LTS claims

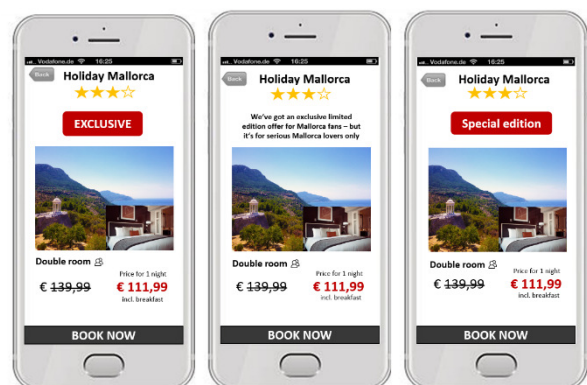


Figure 3.3. Example LSS claims

Another insight is that participants still wanted to feel comfortable when being nudged, asking for a balance between the explicitness of a claim and its call-to-action. Hence, when talking about LSS, participants rather felt more comfortable with claims such as *limited edition* than messages claiming *only 100 rooms*. This finding is supported by past literature from Huang, Zeng, and Wei (2011), who claim that high involvement products negatively affect the time pressure. That is, when consumers are fully involved in a product, putting pressure on them results in avoidance behavior. This might also be applicable to LSS claims. From an advertisement stating *only 100 rooms*, consumers conclude that they need to decide within the next few hours to get a room, but since they need time, they avoid the offer. Another clarification therefore is that participants mostly rely



on past experiences with other online retailers when judging such claims. Recently, various (online) retailers use such claims to provide consumers with false information in order to make profit. Hence, consumers skeptically perceive such claims as falsified and scarcely trustable.

Interestingly, when participants exchanged their experience about such claims during the break, they indirectly stated that they straight away act when recognizing such claims in online retail shops such as Amazon.com – even though they had previously denied it during the focus group discussion. The relevance of this insight is reflected upon in the discussion chapter.

To conclude, participants decided between the LTS claims (i) *-20% today* and (ii) *today 20% off* and chose the first one as the most triggering by arguing that they directly combine the minus symbol with a discount. Within the context of LSS, participants chose between (i) *limited edition* and (ii) *special edition*, determining the second one as more triggering since it is explicit, but does not overly pressure them.

### Conclusion

The focus group yielded trips (e.g., a trip to Mallorca) as a gender-neutral product although only the component hotel is considered for the main study to avoid too many interaction effects with components of a trip. What is more, the LTS claim *-20% today* is adopted to the main study. To fit the context of the presented offer, the final LSS claim is amended from *special edition* to *special offer* to avoid any misunderstandings and irritation since the word *edition* refers to the offer and not the hotel itself.

### Main study

The main study consisted of an online experiment with a total of  $n = 320$  respondents (for more, see paragraphs 3.1 and 3.2), as previously specified. The stimulus material for the main study was based on the outcomes of the focus group. The research design – as discussed previously (see paragraph 3.1) – was a twice two (LTS/no LTS) by two (LSS/no LSS) by two (male/female) between-subjects design including four different claims as follows (**Figure 3.4**):

- (i) LTS claim (*-20% today*),
- (ii) LSS claim (*special offer*),
- (iii) combination LTS and LSS claim (*-20% today & special offer*), and
- (iv) no claim

A hotel booking for Mallorca was defined as the gender-neutral product. To control any potential interaction effects, (i) the design of the app and the scarcity claim, (ii) the color of the app and the scarcity claim, (iii) the price, and (iv) the pictures used for the hotel offer were kept consistent across all conditions.

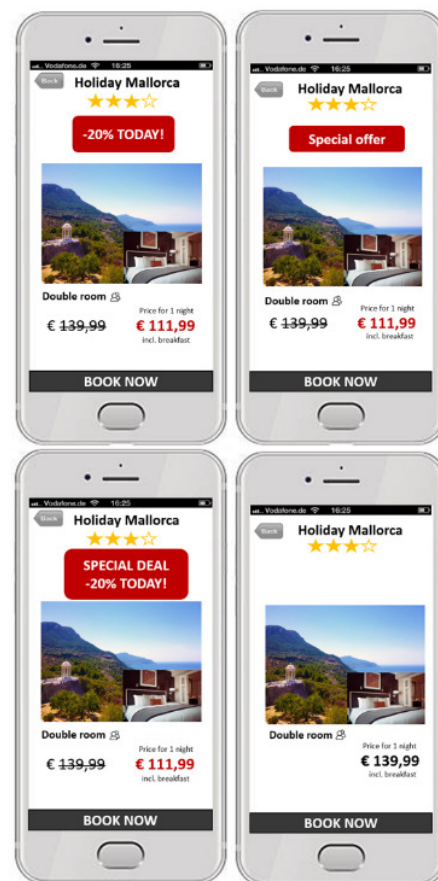


Figure 3.4. Claims for the main study

### Measures

Respondents studied a description of a situation in which they aim to book a hotel via a hotel booking app. They needed to put themselves in the position of a customer and were provided with an image displaying a hotel offer combined with one of the four aforementioned claims. Each participant was randomly assigned to one situation in which (i) LTS, (ii) LSS, (iii) LTS and LSS, or (iv) no manipulation was present. For all conditions, one questionnaire in English was designed with Qualtrics using items from formerly tested instruments and the researcher's own instruments (**Appendix B**).

The questionnaire consisted of nine parts (manipulation, perceived scarcity, perceived novelty, perceived exclusiveness, perceived value, purchase intention, FOMO, competitiveness, and demographics) and 41 questions. As required, items were

adjusted to match the context of this study. Additionally, a randomizer was utilized to avoid question order bias. Some items were negatively worded to disrupt a response set where respondents replied favorably or unfavorably to all items. To take part in the experiment, it was mandatory to use online channels for purchasing and to be older than 18. Such exclusion criteria were established prior to the experiment. Accordingly, demographic information was collected at the beginning of the questionnaire. Moreover, a randomizer was used to assign each of the participants to one condition. The main study was preceded by a short briefing in which participants were given information about the data use, the process of the experiment, and the possibility to stop the study at any point. At the end, participants were made aware of the recording of their response. A fully filled in questionnaire was a valid response. The results of the questionnaire were analyzed by means of the statistics program SPSS.

### Scale development

All scales applied within this research were measured on a five-point Likert scale (strongly disagree – strongly agree). A reliability analysis was conducted as shown in **Table 3.3** to ensure that the constructed questionnaire produced stable and consistent results when the online experiment was performed several times. Prior to the measurement, variables were grouped and negatively worded items in the scales were reversed (**Appendix B**).

Table 3.3. Summary scale reliability scores

Scale	# items	Cronbach's $\alpha$	Cronbach's $\alpha$ (adjusted)
Manipulation check (MC)	2	.80	
Perceived scarcity (PS)	4	.72	
Perceived novelty (PN)	7	.84	
Perceived exclusiveness (PE)	3	.22	.25
Perceived value (PV)	4	.3	.51
Purchase intention (PI)	3	.88	.89
Perceived FOMO (FOMO)	4	.79	.91
Perceived competitiveness (CP)	4	.92	

### Manipulation check

The first scale, manipulation check, was adopted from Wu et al. (2012) including two items (e.g., “I think the availability of this offer is limited.”). With a Cronbach's alpha coefficient reported of .80, the subscale had a good internal consistency in the recent study. In the study by Wu et al. (2012), the scale had a Cronbach's alpha greater than .88.

### Perceived scarcity

The second adopted scale was with respect to the perceived scarcity – which is defined as the need to desire something even stronger whenever free choice is limited (Cialdini, 1984). Aggarwal et al. (2011) developed a three-item scale to measure quantity as well as time scarcity (e.g., “I think I might lose the opportunity to purchase the product if others bought it first.”) which was applied within this study. The scale on perceived scarcity – with a Cronbach's alpha coefficient reported of .72 – showed a good internal consistency. The old Cronbach's alpha was greater than .88 (Wu et al., 2012).

### Perceived novelty

Andrew and Smith (as cited in Esch & Winter, 2009) define perceived novelty as a multi-dimensional construct including adjectives such as *exciting*, *fresh*, *unconventional*, *novel*, *unusual*, *unique*, and *original*. Based on their work, a seven-item scale specifically for this study was constructed (e.g., “This product is exciting.”). This subscale – with a Cronbach's alpha coefficient reported of .84 – also showed a good internal consistency. The old Cronbach's alpha was greater than .88 (Esch & Winter, 2009).

### Perceived exclusiveness

Esch and Winter (2009) define perceived exclusiveness as consumers striving for something unique and distinctive. Therefore, three measurement items (e.g., “I am very attached to scarce products.”) for measuring the perceived exclusiveness of the gender-neutral product were adapted from Lynn and Harris (1997), who constructed an item pool for measuring the uniqueness of a product. This subscale showed a bad internal consistency, with a Cronbach's alpha coefficient of .22. Accordingly, item PE2 (“I enjoy taking advantage of this offer that others miss out.”) – with a low item-total correlation – was removed for a higher Cronbach's alpha coefficient reported of .25. In their former study, Lynn and Harris (1997) reported a Cronbach's alpha of .78. However, only parts of the item scale were adopted to the current



study, thereby explaining the low internal consistency.

#### Perceived value

For measuring perceived value, a six-item scale (e.g., “I think the offer will contain unique features.”) grounded on the scale of Chowdhury and Abe (2002) was created – who define perceived value as the benefits of a product based on initial pre-judgments about the product’s benefits and costs. This subscale reported a low internal consistency, with a Cronbach’s alpha of .3. In this respect, item PV3 (“Booking this offer will be worthwhile if I spend time to compare it with other offers.”) – with a low item-total correlation – was removed from the scale for a higher Cronbach’s alpha of .51. In their former research, Chowdhury and Abe (2002) reported an internal scale reliability of .52.

#### Purchase intention

In the questionnaire, five measurement items for purchase intention (e.g., “The probability that I would consider buying this ...”) were adapted from Grewal, Monroe, and Krishnan (1998), who consider purchase intention as “the likelihood that the buyer intends to purchase the product” (p. 48). This subscale showed a good internal consistency, with a Cronbach’s alpha of .88. Since item PI1 (“If I were going to book a hotel, the probability of booking this offer is ...”) showed a low item-total correlation, it was removed from the scale for a higher Cronbach’s alpha coefficient of .89. Grewal et al. (1998) previously stated an internal scale reliability of .92.

#### Fear of missing out (FOMO)

Wegmann, Oberst, Stodt, and Brand (2017), who define FOMO as being absent from rewarding experiences, generated an item pool from which the three most relevant items were adapted (e.g., “I fear others have more rewarding offers than me.”). The scale on perceived FOMO, additionally, showed a good internal consistency, with a Cronbach’s alpha coefficient reported of .79. However, removing item FOMO2 (“I do not get nervous that I might be missing out on this offer.”) from the scale resulted in a higher Cronbach’s alpha of .91. In prior research, an internal consistency with a Cronbach’s alpha of .90 was reported (Przybylski, Murayama, De Haan, & Gladwell, 2013).

#### Competitiveness

Since the underlying theory of LSS is based on competitiveness theory, it was also included within

the main study. Accordingly, three items from the competitiveness scale of Mowen (2004), who refers to competitiveness as the desire to win something, were implemented (e.g., “I enjoy competition while taking advantage of offers.”). The scale also exhibited high internal consistency, with a Cronbach’s alpha of .92, compared to a previous Cronbach’s alpha coefficient of .89 (Mowen, 2004).

#### Demographics

To get more insights on the sample’s characteristics, six items were embedded to the questionnaire. Next to demographic questions (e.g., “How old are you?”), respondents were asked questions about their purchase behavior (e.g., “Do you actively seek out special offers?”).

### 3.4 Manipulation check

The online experiment included two sets of three questions as a manipulation check to verify in two different ways whether the participants perceived the advertised offer as scarce in the four different conditions (condition 1: LSS; condition 2: LTS; condition 3: LSS & LTS; and condition 4: control).

The first set – defined as the manipulation check (MC) – included two questions to get to know if participants at all perceived scarcity when triggered by the hotel booking offer.

A two by two between-groups analysis of variance (ANOVA) showed significant effects. There was a statistically significant main effect of LSS ( $F[1, 312] = 4.20, p < .05$ ) with participants in the LSS condition ( $M = 3.10; SD = 1.04$ ) achieving significantly higher test scores on scarcity than participants without an LSS claim ( $M = 2.72; SD = 1.03$ ) as can be seen in **Table 4.1**. Partial eta-squared ( $\eta^2$ ) for this effect was .013.

There was also a statistically significant main effect of LTS ( $F[1, 312] = 26.70, p < .001$ ). To demonstrate, **Table 4.1** shows that the LTS condition ( $M = 3.46; SD = 1.08$ ) was perceived as scarcer than the no LTS condition ( $M = 2.72; SD = 1.03$ ). Partial eta-squared ( $\eta^2$ ) for this effect was .079.

Additionally, a significant interaction effect between gender and LTS revealed that perceived scarcity was more pronounced for males than for females ( $F[1, 312] = 4.67; p < .04$ ). When assigning male participants to the LTS condition, they perceived a higher scarcity. For female participants, the scores on scarcity only slightly changed in the different interventions. Partial eta-squared ( $\eta^2$ ) for this effect was .015. **Figure 3.5** illustrates this effect.

The second set of the manipulation check – defined as perceived scarcity (PS) – consisted of four additional items that measured perceived scarcity and in particular its effects into more detail such as whether participants perceived that the offer would be sold out soon.

There was no significant main effect of LSS ( $p > .05$ ). However, there was a statistically significant main effect of LTS ( $F[1, 312] = 5.48, p < .05$ ). To demonstrate, **Table 4.1** shows that the LTS condition ( $M = 3.35; SD = .71$ ) was perceived as scarcer than the no LTS condition ( $M = 2.97; SD = 0.83$ ). Partial eta-squared ( $\eta^2$ ) for this effect was .017. Moreover, as displayed in **Figure 3.6**, no interaction effect between gender and LSS as well as gender and LTS occurred.

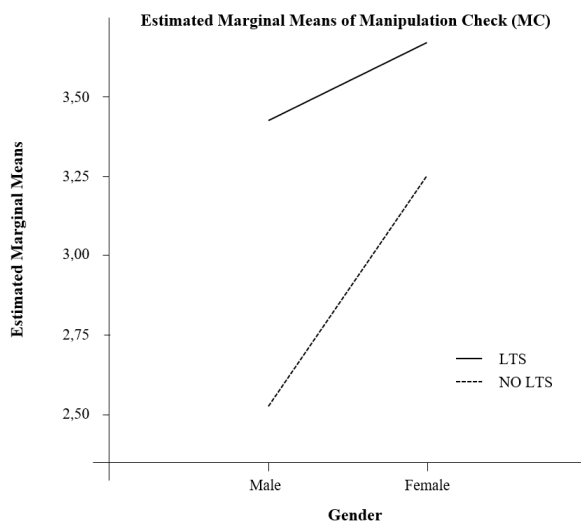


Figure 3.5. Interaction effect (scale MC)

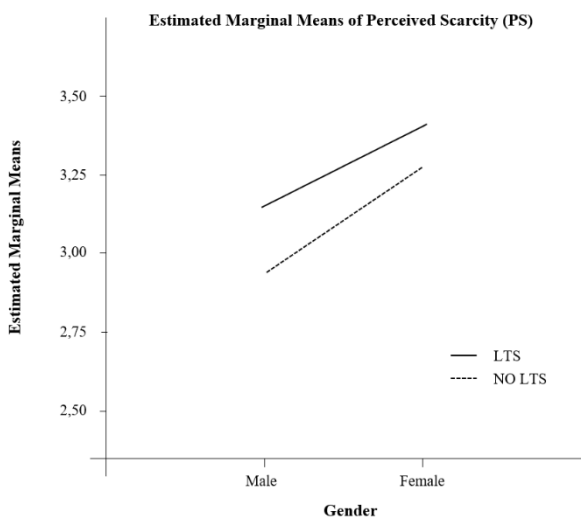


Figure 3.6. Interaction effect (scale PS)

## 4. RESEARCH RESULTS

### 4.1 Descriptive statistics

**Table 4.1** provides again an overview of the test scores divided into (i) LTS/no LTS and (ii) LSS/no LSS. Differences in scores and main- and interaction effects are discussed in subsequent paragraphs.

Table 4.1. Test scores per condition ( $n = 320$ )

LTS	Subscale	LSS	
		No	Yes
No	MC	2.72 (1.03) <sup>a</sup>	3.10 (1.04) <sup>a</sup>
	PS	2.97 (0.83) <sup>a</sup>	3.26 (0.75) <sup>a</sup>
	PN	2.36 (0.61) <sup>a</sup>	2.24 (0.59) <sup>a</sup>
	PE	2.90 (0.84) <sup>a</sup>	2.98 (0.82) <sup>a</sup>
	PV	2.83 (0.69) <sup>a</sup>	2.74 (0.74) <sup>a</sup>
	PI	2.53 (1.02) <sup>a</sup>	2.67 (0.94) <sup>a</sup>
	FOMO	1.99 (0.95) <sup>a</sup>	2.20 (1.07) <sup>a</sup>
	CP	2.17 (1.06) <sup>a</sup>	1.96 (0.9) <sup>a</sup>
	MC	3.46 (1.08) <sup>a</sup>	3.54 (1.05) <sup>a</sup>
	PS	3.35 (0.71) <sup>a</sup>	3.27 (0.74) <sup>a</sup>
Yes	PN	2.18 (0.59) <sup>a</sup>	2.13 (0.59) <sup>a</sup>
	PE	3.12 (0.76) <sup>a</sup>	2.93 (0.89) <sup>a</sup>
	PV	2.86 (0.76) <sup>a</sup>	2.81 (0.66) <sup>a</sup>
	PI	2.63 (1.01) <sup>a</sup>	2.69 (0.93) <sup>a</sup>
	FOMO	2.11 (1.00) <sup>a</sup>	2.06 (0.99) <sup>a</sup>
	CP	2.24 (1.08) <sup>a</sup>	2.23 (1.09) <sup>a</sup>

\*Note: MC = manipulation check; PS = perceived scarcity; PN = perceived novelty; PE = perceived exclusiveness; PV = perceived value; PI = purchase intention; FOMO = fear of missing out; CP = competitiveness; <sup>a</sup> standard deviation

## 4.2 Between-subjects effects

**Table 4.2** gives an overview of the between-subjects effects in this study. The table proves that there was a significant main effect of gender on perceived FOMO ( $F[1, 312] = 4.66, p < .05$ ). Regardless of the scarcity intervention, females ( $M = 2.21$ ;  $SD = 1.06$ ) perceived higher levels of FOMO than males ( $M = 1.97$ ;  $SD = 0.93$ ).

What is more, findings showed a significant main effect of LTS on perceived novelty ( $F[1, 312] = 4.73, p < .05$ ), as illustrated in **Figure 4.1**. However, this effect is reversed; in other words, the offer is perceived as more novel when participants were triggered by a message without LTS ( $M = 2.36$ ;  $SD = 0.61$ ) than by a message with LTS ( $M = 2.18$ ;  $SD = 0.59$ ).

Table 4.2. Between-subjects effects ( $n = 320$ )

Source	Dependent variable*	df	F	Sig.	Partial Eta Squared
Gender	PN	1	.194	.660	.001
	PE	1	.191	.662	.001
	PV	1	1.326	.250	.004
	PI	1	.003	.954	.000
	FOMO	1	4.567	.033	.014
	CP	1	2.525	.113	.008
LSS	PN	1	1.674	.197	.005
	PE	1	.327	.568	.001
	PV	1	.701	.403	.002
	PI	1	.955	.329	.003
	FOMO	1	.473	.492	.002
	CP	1	.930	.336	.003
LTS	PN	1	4.726	.030	.015
	PE	1	.825	.364	.003
	PV	1	.463	.497	.001
	PI	1	.330	.566	.001
	FOMO	1	.009	.926	.000
	CP	1	2.192	.140	.007
Gender* LSS	PN	1	1.001	.318	.003
	PE	1	.708	.401	.002
	PV	1	1.578	.210	.005
	PI	1	.955	.329	.003
	FOMO	1	.009	.926	.000
	CP	1	.134	.714	.000
Gender* LTS	PN	1	.329	.567	.001
	PE	1	.952	.330	.003
	PV	1	.989	.321	.003

	PI	1	.330	.566	.001
	FOMO	1	.152	.697	.000
	CP	1	.983	.322	.003
LSS *	PN	1	.218	.641	.001
LTS	PE	1	2.093	.149	.007
	PV	1	.068	.794	.000
	PI	1	.119	.730	.000
	FOMO	1	1.370	.243	.004
	CP	1	.732	.393	.002
Gender	PN	1	.578	.448	.002
* LSS *	PE	1	.499	.480	.002
LTS	PV	1	1.997	.159	.006
	PI	1	5.285	.022	.017
	FOMO	1	.898	.344	.003
	CP	1	2.192	.140	.007

\*Note: PS = perceived scarcity; PN = perceived novelty; PE = perceived exclusiveness; PV = perceived value; PI = purchase intention; FOMO = fear of missing out; CP = competitiveness; <sup>a</sup> standard deviation

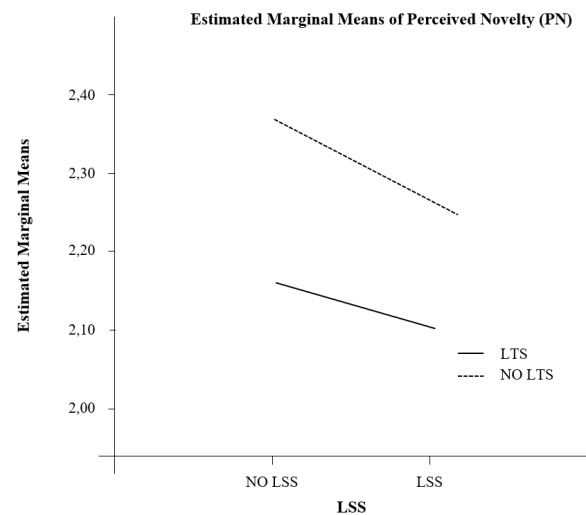


Figure 4.1. Main effect of LTS on PN

Interestingly, there is a significant interaction effect of gender\*LTS\*LSS on purchase intention, as demonstrated in **Table 4.2**. The LTS effect was greater for males than for females. The graph in **Figure 4.2** illustrates that the purchase intention for men is higher for a combination LSS and LTS claim ( $M = 2.90$ ;  $SD = 1.03$ ). In comparison, within both the LTS and LSS conditions, male participants perceived lower levels of purchase intention ( $M = 2.48$ ;  $SD = 0.97$ ; and  $M = 2.56$ ;  $SD = 0.86$ ). Conversely, male participants did not perceive the hotel booking offer as scarce when no scarcity intervention was applied ( $M = 2.56$ ;  $SD = 1.01$ ).

The graph in **Figure 4.3** demonstrates that this interaction effect is different for females. Applying a combination of an LSS and LTS claim resulted in a decrease in purchase intention ( $M = 2.49$ ;  $SD = 0.77$ ). In comparison, within the LTS condition as well as in the LSS condition, females perceived higher levels of purchase intention ( $M = 2.77$ ;  $SD = 1.04$ ; and  $M = 2.77$ ;  $SD = 0.99$ ). In addition, female participants perceived the hotel booking offer as scarce when no scarcity intervention was used ( $M = 2.49$ ;  $SD = 1.05$ ).

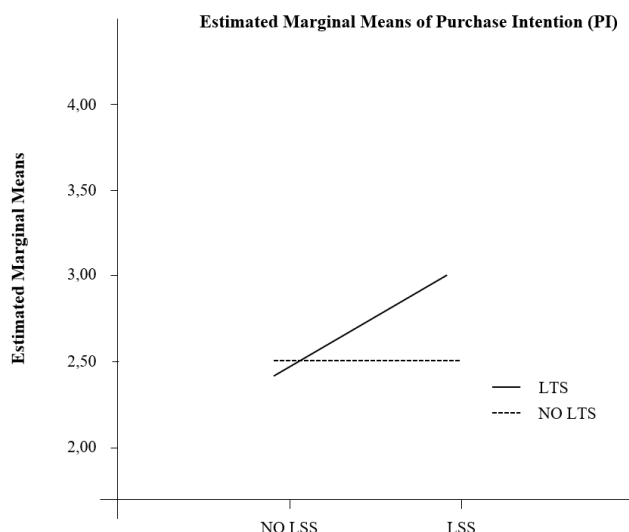


Figure 4.2. Interaction effect of gender\*LTS\*LSS on purchase intention (males)

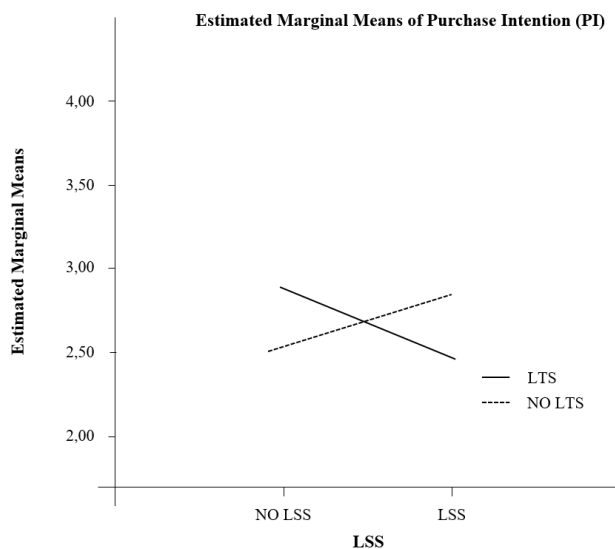


Figure 4.3. Interaction effect of gender\*LTS\*LSS on purchase intention (females)

## 5. RESEARCH RESULTS AND DISCUSSION

### 5.1 Study results

This paper belongs to a short list of papers that discuss gender differences in the effectiveness of scarcity nudges within the mobile shopping environment. The differences in the gender effects as regards the shopping behavior among the existing papers highlights the need for more research in various contexts with varying scarcity nudges. The present paper has considered to what extent limited-time scarcity (LTS) and limited-supply scarcity (LSS) influence the perceived novelty, perceived exclusiveness, perceived value, and purchase intention of females and males within a hotel booking app. Even though possible sampling bias resulting from the sampling method could not be evaded, several conclusions and findings can still be drawn. **Table 5.1** serves as an overview of all hypotheses within this study involving the study results.

Many of the proposed hypotheses in this study have been proven wrong. All hypotheses are investigated on in the subsequent paragraphs. Rationales behind non-significant results are discussed in a separate paragraph. The significant findings of this study, in short, concern the following results:

- The main effect of perceived scarcity
- The main effect of gender on FOMO
- The negative influence of LTS on perceived novelty
- The interaction effect between gender\*LTS\*LSS on purchase intention

### Manipulation check

This study revealed that there is a main effect of perceived scarcity. To demonstrate, the manipulation check on perceived scarcity partly worked out. Within the first set of items, main effects of LSS and LTS occurred. Additionally, the LTS effect was higher for males than for females. That is, males perceived the offer as scarcer when a scarcity intervention was included apart from when it was left out. However, inconsistent with the expectations, scores for female participants did not significantly change between these conditions. One rationale behind it can lie in the FOMO which is especially perceived by women. Women have the feeling of belonging to the social world and thus – regardless of the intervention – can be afraid of not belonging to the group when they do not buy a particular product (Abel et al., 2016; Garbarino and Strahilevitz 2002; Zunic, 2017).

Table 5.1. Hypotheses and results

	Research hypotheses	Result
H1	Limited-supply scarcity has a positive influence on perceived novelty.	Not supported
H2	Limited-supply scarcity has a positive influence on perceived exclusiveness.	Not supported
H3	Limited-supply scarcity has a positive influence on perceived value.	Not supported
H4	Limited-supply scarcity has a positive influence on purchase intention.	Partly supported
H5	Limited-time scarcity has a positive influence on perceived novelty.	Not supported
H6	Limited-time scarcity has a positive influence on perceived exclusiveness.	Not supported
H7	Limited-time scarcity has a positive influence on perceived value.	Not supported
H8	Limited-time scarcity has a positive influence on purchase intention.	Partly supported
H9	Limited-supply scarcity results in higher perceived scarcity than limited-time scarcity.	Not supported
H10	Limited-supply scarcity and limited-time scarcity positively strengthen the influence of each other.	Not supported
H11a	Limited-supply scarcity has a positive influence on perceived competitiveness.	Not supported
H11b	Limited-supply scarcity has a stronger positive influence on the perceived competitiveness of males than on the perceived competitiveness of females.	Not supported
H12a	The influence of limited-supply scarcity on perceived novelty is positively mediated by perceived competitiveness.	Not supported
H12b	Limited-supply scarcity has a stronger positive influence on the perceived novelty of males than on the perceived novelty of females.	Not supported
H13a	The influence of limited-supply scarcity on perceived exclusiveness is positively mediated by perceived competitiveness.	Not supported
H13b	Limited-supply scarcity has a stronger positive influence on the perceived exclusiveness of males than on the perceived exclusiveness of females.	Not supported
H14a	The influence of limited-supply scarcity on perceived value is positively mediated by perceived competitiveness.	Not supported
H14b	Limited-supply scarcity has a stronger positive influence on the perceived value of males than on the perceived value of females.	Not supported
H15a	The influence of limited-supply scarcity on purchase intention is positively mediated by perceived competitiveness.	Not supported
H15b	Limited-supply scarcity has a stronger positive influence on the purchase intention of males than on the purchase intention of females.	Partly supported
H16a	Limited-time scarcity has a positive influence on perceived FOMO.	Not supported
H16b	Limited-time scarcity has a stronger positive influence on the perceived FOMO of females than on the perceived FOMO of males.	Partly supported
H17a	The influence of limited-time scarcity on perceived novelty is positively mediated by perceived FOMO.	Not supported
H17b	Limited-time scarcity has a stronger positive influence on the perceived novelty of females than on the perceived novelty of males.	Not supported
H18a	The influence of limited-time scarcity on perceived exclusiveness is positively mediated by perceived FOMO.	Not supported
H18b	Limited-time scarcity has a stronger positive influence on the perceived exclusiveness of females than on the perceived exclusiveness of males.	Not supported
H19a	The influence of limited-time scarcity on perceived value is positively mediated by perceived FOMO.	Not supported
H19b	Limited-time scarcity has a stronger positive influence on the perceived value of females than on the perceived value of males.	Not supported
H20a	The influence of limited-time scarcity on the purchase intention is positively mediated by perceived FOMO.	Not supported
H20b	Limited-time scarcity has a stronger positive influence on the purchase intention of females than on the purchase intention of males.	Partly supported

Unlike the expectations, only a main effect of LTS occurred in the second set of items to evaluate whether the scarcity intervention worked out. As mentioned earlier, the first set of questions included general items to check whether participants recognized a scarcity claim. The second set included items about the effects of the scarcity intervention on the participant and the other consumers. Participants generally recognized the employed scarcity intervention in the hotel booking offer but did not think that this offer had huge effects on consumers and themselves; the rationales for this are explained later. Thus, based on these results, limited-supply scarcity did not result in higher perceived scarcity than limited-time scarcity. This is inconsistent with findings of Aggarwal, Jun, and Huh (2011) and Devlin et al. (2007) proposing that consumers perceive higher levels of scarcity through LSS claims. However, the type of product may have influenced this result. Other possible rationales are outlined in the further course of this chapter.

### Effects of LSS and LTS

First, research results have shown that LSS has no significant, positive impact on perceived novelty. This result is inconsistent with Esch and Winter (2009), Mirsch et al. (2017), and Van Herpen et al. (2014). These studies suggested that by employing a limited-edition claim, consumers are prompted to overestimate the attractiveness of a product and with it the perceived novelty.

Second, there was no significant relationship between LSS and perceived exclusiveness, as claimed by Esch and Winter (2009), Gierl et al. (2008), and Griskevicius et al. (2009). These researchers suggested that consumers perceive a limited-edition as unique, resulting in a higher perceived exclusivity.

Third, there was also no significant relationship between LSS and perceived value. Again, this result does not confirm past research results from Chen and Sun (2014) and Eisend (2008). They proposed that such scarcity claim let a product appear more special than it is and thus increases the consumer's perceived value of a product.

However, the analysis partly supported that LSS has a positive influence on purchase intention. An interaction effect between gender\*LTS\*LSS on purchase intention was discovered. The combination of an LTS and LSS claim positively influenced the purchase intention of male participants. This interaction effect is investigated further later in this chapter. The result is consistent with Aggarwal and Vaudyanathan (2003), Bae and Lee (2010), Eisend (2008), and Wu

et al. (2012). These studies claim that through the limited freedom of choice, consumers desire the product more than previously.

Similarly to the main findings regarding LSS, there is also no significant relationship between LTS and perceived novelty. This result does not confirm insights from Esch and Winter (2009), Mirsch et al. (2017), and Van Herpen et al. (2014). These studies suggest that by employing a time restriction, consumers' urgency level rises, and they consequently rush and act without cognitively processing the product's information.

Next, based on the study results, LTS has no significant positive impact on perceived exclusiveness. Again, this finding is inconsistent with Esch and Winter (2009), Gierl et al. (2008), and Griskevicius et al. (2009). These studies suggest that consumers develop a strong desire to purchase a product when placed under a time limit. Consumers think that scarce items are more exclusive since they are restricted.

Inconsistent with the findings of Chen and Sun (2014) and Eisend (2008), LTS has no significant positive impact on perceived value. These studies claim that a scarce item restricted in time is perceived as more unique and thus increases the perceived value of a product.

Nevertheless, the analysis partly supported that LTS has a positive influence on the purchase intention. As previously mentioned, an interaction effect between gender\*LTS\*LSS was discovered with LTS and LSS together increasing the purchase intention of male participants. Again, the interaction effect is investigated further later in this chapter. This finding is consistent with Aggarwal and Vaudyanathan (2003), Bae and Lee (2010), Eisend (2008), and Wu et al. (2012). These studies suggest that by employing a limited time frame, freedom of choice is limited and consumers consequently desire a product more than previously.

### Moderator and mediator

In the theoretical framework of this study, it was proposed that competitiveness theory is the underlying theory for LSS – which particularly positively triggers men. Thus, it was proposed that perceived competitiveness mediates the relationship between LSS and perceived novelty, perceived exclusiveness, and perceived value; however, this study found no significant relationships. These findings are inconsistent with Gupta (2013), Otnes and McGrath (2001), and Nichols (2012) who suggested that male consumers have higher levels of competitive arousal;



thus, they see LSS claims as a competition and create the urge to buy.

However, results partly support the hypothesis that LSS has a stronger positive influence on the purchase intention of males than on the purchase intention of females. As discussed earlier, the analysis revealed an interaction effect between gender\*LTS\*LSS and purchase intention. That is, by combining LTS and LSS messages, the purchase intention of males increased compared to females. The interaction is further discussed in the next paragraph. This finding confirms again Gupta (2013), Otnes and McGrath (2001), and Nichols (2012), who claim that men have a higher need for competition and consequently experience the urge to buy when triggered by an LSS message.

In contrast to LSS, FOMO was characterized as the underlying theory for LTS and particularly positively triggers women. Inconsistent with these findings, it was proposed in this study that perceived FOMO mediates the relationship between LTS and perceived novelty, perceived exclusiveness, and perceived value. These findings are inconsistent with Abel et al. (2016), Zunic (2017), and Garbarino and Strahilevitz (2002). These researchers suggested that – in particular within the purchase context – female consumers perceive higher levels of FOMO than male consumers due to their lower self-esteem levels.

Nevertheless, again, findings partly support that LTS has a stronger positive influence on the purchase intention of females than on the purchase intention of males. As previously introduced, the interaction effect between gender\*LTS\*LSS and purchase intention showed that females had a higher purchase intention within the LTS condition compared to males. This result confirms again Abel et al. (2016), Zunic (2017), and Garbarino and Strahilevitz (2002). These researchers suggest that female consumers perceive higher levels of FOMO, which is the underlying strategy for an effective use of LTS.

### Main effect of FOMO

Interestingly, the analysis resulted in a main effect of gender on FOMO. Independently from the scarcity intervention they received, women perceived significant higher levels of FOMO than men did. As just explained, this is consistent with the finding of past studies (Abel et al., 2016; Garbarino and Strahilevitz, 2002; Zunic, 2017) claiming that women want to be part of the community and particularly ask friends for advice to avoid social exclusion.

### Interaction effect

The research findings resulted in an interaction effect between gender\*LTS\*LSS and purchase intention. Male participants reached significant higher levels of purchase intention when nudged by a scarcity message that combined LTS and LSS. Within the LTS and LSS conditions separately, the purchase intention decreased.

Conversely, the purchase intention of female consumers decreased when triggered by a scarcity message that combined LTS and LSS. However, within the LTS and LSS conditions separately, purchase intention was higher, but not significantly higher than when female participants received no intervention.

### Rationale for non-significant results

In total, these findings of this study only support five hypotheses. However, rationales behind the non-significant results can be declared in general terms.

The product choice of this study can be one declaration for the non-significant findings. In recent times, many retailers in the hotel industry – Booking.com, for example – rely on scarcity techniques. Consumers who are familiar with online purchase and, in particular, with booking hotels online are aware of these kinds of techniques. Due to the massive use of these scarcity techniques within this context, consumers pay less attention to these offers and classify them as less interesting, exclusive, and special. What is more, a hotel booking for Mallorca is nothing special anymore since it is now one of the most often booked vacation destinations. According to Occur (2015) and Sharma et al. (2014), both the interest in a product as well as the amount of involvement affect the extent to which consumers are interested in a product and the extent to which they are nudged by it.

This is where another rationale comes in. From a different perspective, a hotel booking is also a high involvement product on which consumers need to expend a significant amount of money. As earlier suggested in the theoretical framework of this paper, putting pressure on consumers regarding high involvement products can lead to avoidance behavior.

Additionally, participants were explicitly asked to turn attention to the hotel offer before answering questions. They had time to cognitively process the information. However, being confronted with such an offer in a more natural manner might prompt them to react differently than in experimental settings. For example, during the focus group discussion, attendants denied that these kinds of messages influence them, but when they start naturally talking among

each other, they revealed that they are actually influenced by it. That is, scarcity messages may have a subliminal influence on consumers.

## 6. CONCLUSIONS AND SUGGESTIONS

### 6.1 Managerial implications

This experimental study contributes to the theory of digital nudges. Even though the data gathered is limited, research results and conclusions suggest some managerial implications which practitioners, researchers, and consumers could pursue.

The current paper implies that the employed type of scarcity message depends on the context in which it is applied and the aim one wants to reach with the scarcity message. In order to reach product novelty, practitioners should avoid employing LTS claims especially when advertising hotel offers since these claims negatively influence the product's novelty. Additionally, in recent times, LTS claims are massively used within this context.

Given the interaction effect between gender\*LTS\*LSS and purchase intention, it is advisable to apply a combination of LTS and LSS intervention for male consumers to reach high levels of purchase intentions. Conversely, not LTS, LSS, or a combination of both are effective interventions leading to a higher purchase intention among female consumers. These scarcity types should be avoided for female consumers. These insights open up new ways for researchers to explore other combinations of scarcity interventions and their effectiveness in the future.

Nevertheless, another way to facilitate female consumers can be by tactics that use FOMO. Given the gender differences in perceived FOMO scores found in this data, females experienced higher FOMO in any scarcity condition than males. Since females are particularly stimulated by FOMO, practitioners might design such claims for appealing to females. For example, female consumers could be stimulated via social media and email marketing – platforms well known for using FOMO (Mooar, 2016). While social media, such as Facebook, is used for customer outreach, e-mail marketing functions as creating targeted mailing lists. Both have the attempt to call-to-action (i.e., to trigger customers to actually purchase a product) and, eventually, to maximize conversions (i.e., prospects that become actual customers). From a researcher's perspective this research domain is quite unknown within the mobile shopping context, thereby suggesting research directions for effective FOMO tactics; additional investigation is required on which scarcity marketing techniques apply here. From a consumer's perspective, females should be

particularly aware of any scarcity promotion stressing the FOMO, including on social media. Again, provided information should be processed conscientiously before one allows oneself to be influenced and triggered by such tactics.

In general, from the consumer's perspective, any scarcity promotion should be eyed critically. Before impulsively buying a product, consumers should take time to cognitively process the provided information.

### 6.2 Limitations and future research directions

The study reported in this paper is accompanied by some crucial limitations that merit mention and open directions for future research. To date, this paper is one of the few research papers to discuss gender differences in the effectiveness of scarcity nudges within the online mobile shopping environment and particularly within app shopping. More insights are required for practitioners, researchers, and customers about how consumers validate and feel about the online mobile user experience.

First and foremost, a strong inference of causality can be made since a controlled experiment – including a randomization – was conducted. It is not possible that other covariates not controlled for in the present study may have been accountable for these associations.

In examining gender differences regarding perceived scarcity, the design of the app and the scarcity claim, the color of the app and the scarcity claim, the photographs used for the hotel offer, and the price for the hotel booking were kept constant. Given that and the experimental setting, interaction effects could not have occurred. Still, it would be interesting to study whether the perceived scarcity scores on LTS and LSS vary when examining these components. According to the web psychologist Nahai (2014), all these components are crucial factors in influencing the consumers' subconsciousness.

A second limitation is that the convenience sampling procedure was applied, which reduced the representativeness and generalizability of the research results because it possibly attracted a homogenous sample. In the present study, data was collected mostly from students. Additionally, time restrictions need to be considered since the study was conducted within two weeks. Future studies could enhance the external validity by gathering data from numerous demographics within a longer time frame.

Third, the questionnaire of this study integrates two subscales – perceived exclusiveness and perceived value – that had a low reliability. A clarification therefore can lie in the fact that only parts of these

existing subscales were adopted to the recent study, eventually resulting in many non-significant findings which are not generalizable. Further replications of this study could apply different subscales for a higher reliability of the study results to draw general conclusions.

Fourth, given that consumers might unconsciously be affected by the influence of LSS and LTS messages – as insights from the focus group discussion have shown – it would be interesting to measure the subliminal influence of scarcity claims. Past studies have already investigated the subliminal influence of scarcity claims within physical retail settings but have not studied the effect within online mobile apps; doing so may open new insights for better understanding who is most vulnerable to scarcity claims and how consumers can be made more resistant to these kinds of scarcity claims.

In the analysis of the mediating role of FOMO and the competitiveness theory, the introduction of the mediators did not make the relationship between perceived scarcity and purchase intention, perceived exclusiveness, perceived value, and perceived novelty insignificant. This indicates that there may be additional variables mediating the relationship between these variables. As Schins (2014) and Gupta (2013) report, past research highlighted a range of other psychological theories as mediating variables that underlie the LTS and LSS effects. However, prior studies revealed mixed results on these theories. Replication of these findings could apply different theories as moderator. Other psychological theories are, for example, the need for uniqueness theory, snob effect, commodity theory, and the bandwagon effect. Studying different underlying theories might provide more insights on which theories and principles actually influence the scarcity claims and, consequently, consumers.

In that sense, in the analysis of the moderating role of gender, the introduction of the moderator did not change the relationship between perceived scarcity and purchase intention, perceived exclusiveness, perceived value, and perceived novelty. This indicates that there may be additional variables moderating the relationship between these variables. Future studies could replicate these findings with a different variable. For instance, Gupta (2013) argued in her paper that high hedonic shopping motivation is a moderator.

Sixth, the product used in this study was a hotel booking. Further study replications might vary the type of product since product involvement may also be a significant moderating variable, as consumers

may be more or less interested in the product, affecting the effectiveness of LTS and LSS cues (as mentioned earlier) (Schins, 2014). In addition, future replications could examine the effect for both low-involvement products (i.e., fast-moving consumer goods) and high-involvement products to acknowledge any significant differences on how scarcity promotions affect in that sense.

In sum, replication of these findings could examine the effect of LSS and LTS promotions on dependent variables other than the ones studied here, such as consumers' attitude toward the brand or deal evaluation. Ultimately, various types of scarcity were introduced at the beginning of this paper (e.g., limited-quantity scarcity and limited-demand scarcity) and within the managerial implications section (e.g., social media marketing campaigns and e-mail marketing); these require further investigation. Future research could replicate these study findings with these scarcity types in correspondence with their effectiveness in online mobile shopping and in particular within apps.

## 7. RESEARCH HIGHLIGHTS

The most important findings of this research to consider for follow-up studies are as follows:

- LTS reaches higher levels of perceived scarcity compared to LSS.
- Applying scarcity claims depend on the context and the aim one wants to reach.
- LTS negatively influences the perceived novelty of an offer.
- Males reach higher levels of purchase intention when triggered by a combination of an LTS and LSS message.
- LTS and LSS claims are not suitable scarcity types to influence females.
- Females perceive higher levels of FOMO, which is another way to facilitate their purchase intention.

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**APPENDIX A. FOCUS GROUP CONSTRUCTION***Table 1. Limited-time scarcity (LTS) claims by online retailers*

WEBSITE	LIMITED-TIME SCARCITY (LTS) CLAIM
Booking.com	“-20% TODAY!” “Today’s Value Deal!” “TODAY 45% OFF”
Amazon.com	“DEAL OF THE DAY” (Ends in 12:00:51) “Want it tomorrow, July 3? Order within 9hrs 32 mins and choose One-Day Shipping at checkout.” “Black Friday Deals. Big savings, no waiting.”
Zalando.com	“Want it tomorrow? Order within 8hrs 31 mins”
Starbucks.com	“Mid-week booster (5pm – 8pm): 50% OFF any handcrafted beverage with purchase of a handcrafted beverage”
MediaMarkt.de	“Offer valid till 30 <sup>th</sup> April 2017” “Only till 28 <sup>th</sup> April 2017”
Asos.com	“Stock reserved for 60 minutes only”

*Table 2. Limited-supply scarcity (LSS) claims by online retailers*

WEBSITE	LIMITED-SUPPLY SCARCITY (LSS) CLAIM
Booking.com	“Deal” “Smart Deal”
Amazon.com	“Limited edition: only 12 left in stock”
Zalando.com	“LIMITED EDITION”
Starbucks.com	“Bliss in three flavors – enjoy it while it lasts.” “Online Deal” Limited time only!”
MediaMarkt.de	“Limited edition”
Asos.com	“EXCLUSIVE”
Heinz Tomato Ketchup	“We’ve got an exclusive limited edition offer for Heinz Tomato Ketchup fans – but its for serious ketchup lovers only”
Nintendo	“Special edition” “Limited edition Nintendo 3DS XL”
Snickers	“Limited edition MAXIMUS”
PAS Diamonds	“Limited edition 2016!”
Honda	“Limited edition. Limitless style.”
Ken Block shoe	“New limited edition. Only 300 pairs worldwide”

**Introduction focus group discussion**

Welcome everybody and thank you for attending this group discussion. Recently, I am writing my master’s thesis at the University of Twente. As you all may know, nowadays, a lot of consumers shift from the traditional desktop shopping to mobile shopping or shopping in apps. Within the scope of shopping, (online) retailers rely on several segmentation strategies. The segmentation criterium gender is gaining importance since there appear significant differences in the way women and men behave in online shopping and how they respond to different strategy types. Within my thesis, I investigate on gender differences in shopping behavior by the means of different strategy types. Therefore, the aim of this group discussion is (i) to find a gender-neutral product and (ii) to examine your reaction on specific claims within shopping apps. For analysis purposes, I would like to record the group discussion. However, the recording will be handled confidentially, and you will stay anonymously. Do you all agree on that? If you should have any questions during the course of the discussion, feel free to ask.

In the first instance, I would like to ask you to split into two groups – women and men. One group can stay in this room and the other group can go to another room. Your task is to come up with – in your eyes – gender-neutral products.

In the second instance, now you have finished the brainstorming session, I would like to ask you to discuss together the gender-neutral products you came up with in order to bring it down to a common denominator (*use suggestions for gender-neutral products* and *use key-questions for gender-neutral products*).

In the last instance, I will now show you different claims used within shopping apps (*use key-questions for scarcity claims*).

We have reached the end of the discussion. Are there any questions?

Thank you very much for your attendance.

### **Suggestions for gender-neutral products**

- (1) blue jeans (Worth, et al., 1992)
- (2) deodorant (Infanger et al., 2012)
- (3) shower gel (Infanger et al., 2012)

### **Key-questions for scarcity claims**

- (4) What do you think about this scarcity claim?
- (5) Do you feel triggered? Why?
- (6) Which scarcity claim triggers you the most? Why?

### **Key-questions for gender-neutral products**

- (1) Which products do you came up with?
- (2) Which product is most gender-neutral in your eyes? Why?

**Focus group discussion scarcity in purchase apps***4 women (participant 1-4) & 4 men (participant 5-8)*

**Researcher:** Welcome everybody and thank you for attending this group discussion. Recently, I am writing my Master thesis at the University of Twente. As you all may know, nowadays, a lot of consumers shift from the traditional desktop shopping to mobile shopping or even app shopping. Within the scope of shopping, (online) retailers rely on several segmentation strategies. The segmentation criterium gender is gaining importance since there appear significant differences in the way women and men behave in online shopping and how they respond to different strategy types. Within my thesis, I investigate on gender differences in shopping behavior by the means of different strategy types. Therefore, the aim of this group discussion is to (i) find a gender-neutral product and (ii) investigate on your reaction on specific claims within app shopping. For analysis purposes, I would like to record the group discussion. However, the recording will be handled confidentially, and you will stay anonymously. Do you all agree on that? If you should have any questions during the course of the discussion, feel free to ask.

**All:** Yes.

**Researcher:** In the first instance, I would like to ask you to split into two groups – women and men. One group can stay in this room and the other group can go to another room. Your task is to come up with – in your eyes – gender-neutral products that people are most likely to buy online.

*Part 1. Consultation in different rooms.*

*Part 2. Discussion*

**Researcher:** Alright, now I would like to ask you to discuss your gender-neutral products you came up with to reach consensus. In second instance, now you have finished the brainstorming session, I would like to ask you to discuss together the gender-neutral products you came up with and to bring it down to a common denominator.

**Participant 1:** We thought about furniture as a gender-neutral product. Basically, you can think of any furniture just like a table for the garden, a cupboard for the bathroom or even lamps. We, additionally, agreed on hair dryers and microwaves as gender-neutral products.

**Participant 5:** Alright, first, we thought of electronics such as mobile phones or even a kettle you buy online, but then we checked our latest orders we made via Internet. Eventually, we came up with books such as travel books and DVD's.

**Participant 3:** Yes, but what I now think of is maybe toasters or any board games.

**Participant 6:** But then you also just reach a particular group.

**Participant 7:** Yes, and maybe you are less excited of buying a toaster online. I think you are not really involved into this to use it within a study.

**Participant 2:** Oh well, when I think of travel books, what do you think of a trip maybe as a gender-neutral product since the great majority is interested in travelling?

**All:** Oh yes, that's a good idea, indeed.

**GNP: trip**

**Participant 4:** I think everyone is interested in any kind of trip and a lot of people nowadays book trips online.

**Researcher:** So, if you need to reach consensus, which gender-neutral product do you would like to suggest me?

**Participant 8:** Well, I think booking online trips is quite a good gender-neutral product since it does not reach any particular gender at all. Is not it?

**All:** Yes, we would agree on that as well.

**Researcher:** Okay, and which trips do you think of since there are a lot of different trips you can book via the Internet?

**Participant 8:** I think people mainly choose for summer holidays like Spain or Italy.

**GNP: summer holidays  
like Spain or Italy**

**Participant 2:** I would directly think of Mallorca. I think a lot of people are going there and they can easily be attracted by a special offer.

**GNP: Mallorca**

**All:** Yes, true.

**Researcher:** So, if I can conclude: From your point of view, trips are the best gender-neutral product for online shopping, especially trips focusing on summer vacation somewhere in Italy or Spain?

**All:** Yes.

### *Part 3. Discussing the claims*

**Researcher:** Alright. In the last instance, I will show you different claims. Imagine, you would like to book a trip to Mallorca and you are searching for a hotel within a hotel booking app. I would like to ask you to tell me if you feel triggered to book the trip or not. If yes, why? If no, why not?

**Participant 4:** The one with “offer valid till 1<sup>st</sup> April 2018” does not attract me. Scarcity 7: not attractive

**Researcher:** Why not?

**Participant 4:** Because I still have one day left to make a decision, so I would not feel triggered at all.

**Researcher:** What do the others think about it? Scarcity 7: still time left to book

**All:** We agree on that one.

**Researcher:** Alright. What about the claim “only valid till 1<sup>st</sup> April 2018”?

**All:** It has the same effect as the previous one. There is still time left to book the trip. Scarcity 8: not attractive

**Researcher:** Okay, what do you think about “stock reserved for 60 minutes only”?

**Participant 5:** That would not trigger me at all, because in the end I can put it again in the basket. It is quite vague. Scarcity 9: not triggered, can put it again in basket, vague

**Participant 1:** Yes, indeed and it does not seem to be a special offer, because it says nothing like discount or anything. Scarcity 9: no special offer, no discount

**Researcher:** What do the others think about it?

**All:** We agree on that.

**Researcher:** Okay, what do you think about this one “deal of the day”? Scarcity 4: skeptical about the word „deal”

**Participant 3:** Well, I do not like all of those ones saying “deal”. I really get skeptical when reading it.

**Researcher:** Why?

**Participant 3:** Well, because I do not trust these words if it is a real deal or just fake deal. Scarcity 4: fake deal

**Participant 6:** I agree on that. There is no discount placed. It just says deal of the day, but I need some seconds more to realize to feel triggered, because it does not make me curious. Scarcity 4: does not make curious, need some time to get triggered

**Participant 2:** Yes true, it does not trigger me to book a trip right now, because I even have time left.

**All:** Yes, indeed. Scarcity 4: time left to book the trip

**Researcher:** Okay, so we skip all of the ones with “deal”. Scarcity 2 & 4 & 5: skipped because the word “deal” makes participants skeptical

**All:** Yes.

**Participant 7:** I also do not feel triggered by the one with “mid-week booster” if I compare it with the ones “-20% today” and “today 20% off”. Scarcity 6: not feel triggered

**Researcher:** But why?

**Participant 7:** I really get skeptical when I read like “between 5pm-8pm” and I would, additionally, expect that they will have any other special deals for other time periods after this one. It just sounds like they have many different deals for different time frames.

**Participant 8:** I agree on that and there is a lot to read before I actually feel triggered.

**Researcher:** What do the others think? Scarcity 6: a lot to read before directly get triggered

**All:** We also agree.

Scarcity 6: time period makes it skeptical, any other special deals for other time periods afterwards expected, sounds like they have many different deals

**Researcher:** Okay, we have two left now. “-20% today” and “today 20% off”. Which one triggers you the most?

**Participant 5:** I get attracted by the one “today 20% off”, because it is an eye-catcher. **Scarcity 3: eye-catcher**

**Participant 1:** That is true, but I would be more attracted by “-20% today”, because you directly combine it with a discount. **Scarcity 1: directly combine it with a discount**

**Participant 6:** Yes, indeed. It is an eye-catcher and you directly think of any discounts or anything cheap when you see the minus sign. **Scarcity 1: when you see a minus sign you think of a discount**

**Participant 2:** I agree on that.

**Researcher:** What about the other ones?

**All:** We think, the “-20% today” would be most effective to trigger us. **Scarcity 1: most effective**

**Researcher:** Alright. Apart from these messages, I have some other ones and I would like to ask you to process the same as you did with the ones we just did.

**All:** Okay.

**Researcher:** Let’s see. What do you think about the claim “deal”?

**Participant 3:** Again, I am skeptical about the two claims “deal” and “smart deal”. It is nothing special that would directly attract me as we discussed before.

**All:** Yes, indeed.

**Researcher:** Okay and what do you think about “limited edition 2018”?

**Participant 2:** Well, actually it is nothing special. **Scarcity 10 & 11: nothing special, again skeptical when reading “deal”**

**Researcher:** Why?

**Scarcity 16: limited edition 2018 available throughout the year**

**Participant 2:** It is a limited edition 2018, so I can book it at some point throughout the year over and do not need to stress myself.

**Participant 7:** I agree with you. It does not trigger me to directly book this one. **Scarcity 16: does not trigger to directly book**

**All:** You two are right.

**Researcher:** Alright. I get your point. What do you think about “we’ve got an exclusive limited-edition offer”?

**Participant 8:** On one side you feel special, but still it does not trigger me, because it does not clearly state that the trip is just available for a limited time. **Scarcity 14: feel special, but does not trigger because not clearly state a time limit to book directly**

**Participant 1:** Yes, it sounds for me like I have still time enough to book it and it is still available. **Scarcity 14: time enough to book and still available**

**All:** Yes, it does not convince us to directly make a purchase.

**Researcher:** Alright, seems clear. Let’s get to “limited edition. Limitless holiday.”. What do you think of this claim?

**Participant 4:** Actually, it is too much text for me to directly feel triggered. **Scarcity 17: too much text to feel directly triggered**

**Participant 3:** It is nice to state, but still would not trigger me to buy it.

**Researcher:** What do the others think?

**All:** We agree with them.

**Researcher:** What about the claim “exclusive”?

**Participant 5:** It is very short and prominent, but would not attract me at all, though. **Scarcity 13: very short & prominent but not attractive**

**All:** No, it is just too simple to be triggered by this message since it does not put pressure on us to book the trip.

**Researcher:** What about “new limited edition and only 100 rooms?” **Scarcity 13: too simple, does not put pressure on consumer**

**Participant 6:** To be honest with you, it is again too much text and the word “new” is somehow rare. **Scarcity 18: too much text, word “new” rare**

**Researcher:** Why? **Scarcity 18: duplicate “limited” & “new”**

**Participant 6:** It is somehow duplicate, because a limited edition sounds for me already new.

**Participant 2:** Yes, I think it is the same with “only 100 rooms”. That does not sound trustable to me at all, though.

**Scarcity 18: maybe information about rooms not even true**

**All:** Indeed, it is not even true maybe. We would not feel triggered.

**Researcher:** Okay. Let's get to the last two ones "limited edition" and "special edition". What about these two?

**Participant 1:** I would feel most triggered by special edition.

**Researcher:** And why?

**Scarcity 15: important information, like offer = book it; seems to be something special**

**Participant 1:** Actually, it is just a short important information and contains all I need to know. If I would really like the offer, though, I would directly book the trip, because it seems to be a special one.

**Participant 3:** Indeed, it sounds most trustable and attractive to me as well. **Scarcity 15: most trustable, most attractive**

**Participant 2:** Yes, and it is put down explicit, but it is still a claim that attracts me and does not force me or put me under pressure to book the trip. I still want to feel comfortable when deciding for a trip.

**Participant 8:** What is more, limited edition does not sound to me convincing enough to book something very exciting, but when I read "special edition"

**Scarcity 15: explicit, clear but still not that much pressure to book, want to feel comfortable**

I feel excited to book the trip.

**Scarcity 12: not convincing, nothing special**

**All:** Yes, we agree with you.

**Researcher:** Alright. Then we have reached the end of the discussion. Are there any questions from your side?

**All:** No.

**Researcher:** Alright. Thank you very much for your attendance.

Table 3. Coding scheme focus group discussion

CODING SCHEME	
CODE	EXPLANATION
GNP	gender-neutral product
Scarcity 1-18	scarcity claim 1-18 (see below)



### Limited-time scarcity claims 1 to 3



1

Directly combine minus sign with a discount, most effective

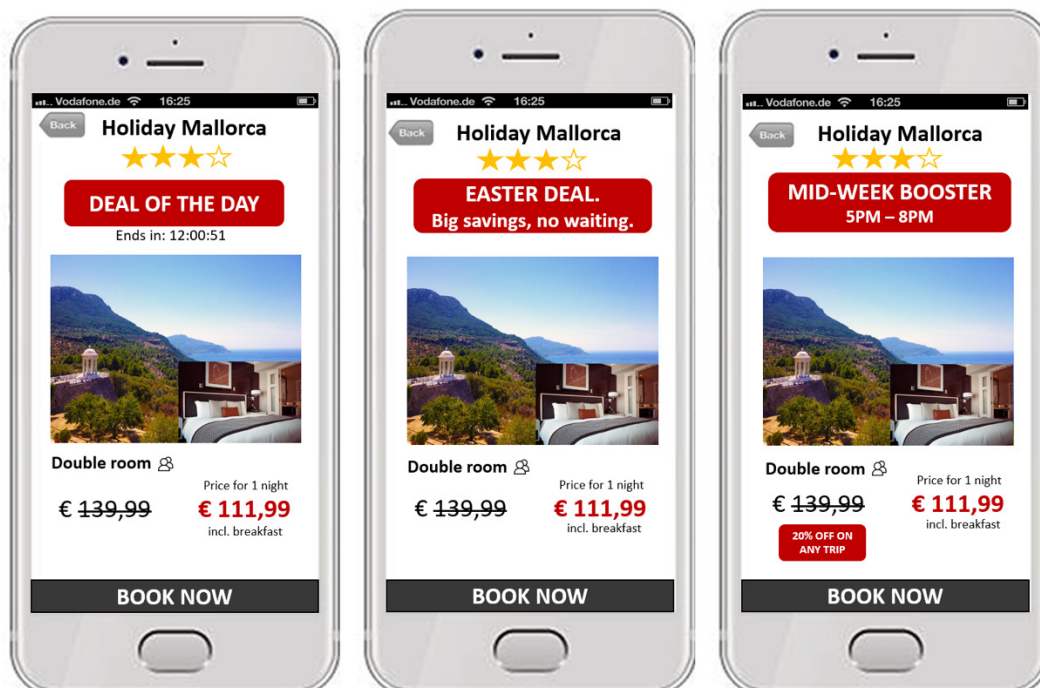
2

Word “deal” makes participants skeptical

3

Eye-catcher, but with a minus sign feeling more triggered

### Limited-time scarcity claims 4 to 6



4

Word “deal” makes participants skeptical, sounds like fake deal, time left to book the trip, does not make curious

5

Word “deal” makes participants skeptical

6

Not triggered, skeptical about time period, expect other special deals for time periods, a lot to read to directly get triggered by it

### Limited-time scarcity claims 7 to 9



7

Not attractive, because  
still time left to book

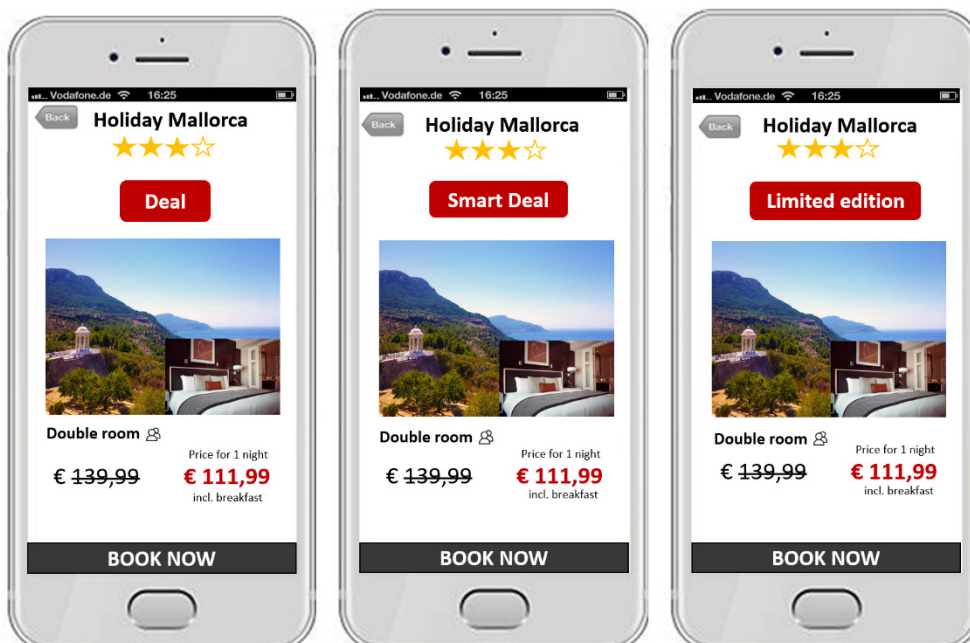
8

Not attractive, because  
still time left to book

9

Not triggered, can put  
trip again in basket,  
vague, no special offer

### Limited-supply scarcity claims 10 to 12



10

Not special, skeptical  
about the word "deal"  
(not trustable)

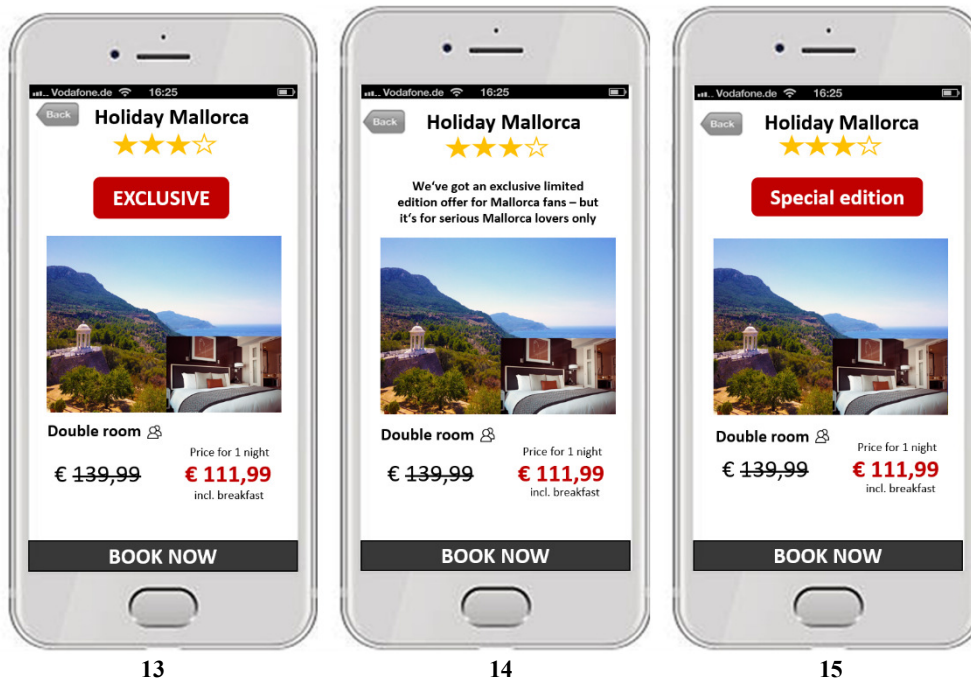
11

Not special, skeptical about  
the word "deal" (not trustable)

12

Not convincing, nothing  
special

## Limited-supply scarcity claims 13 to 15

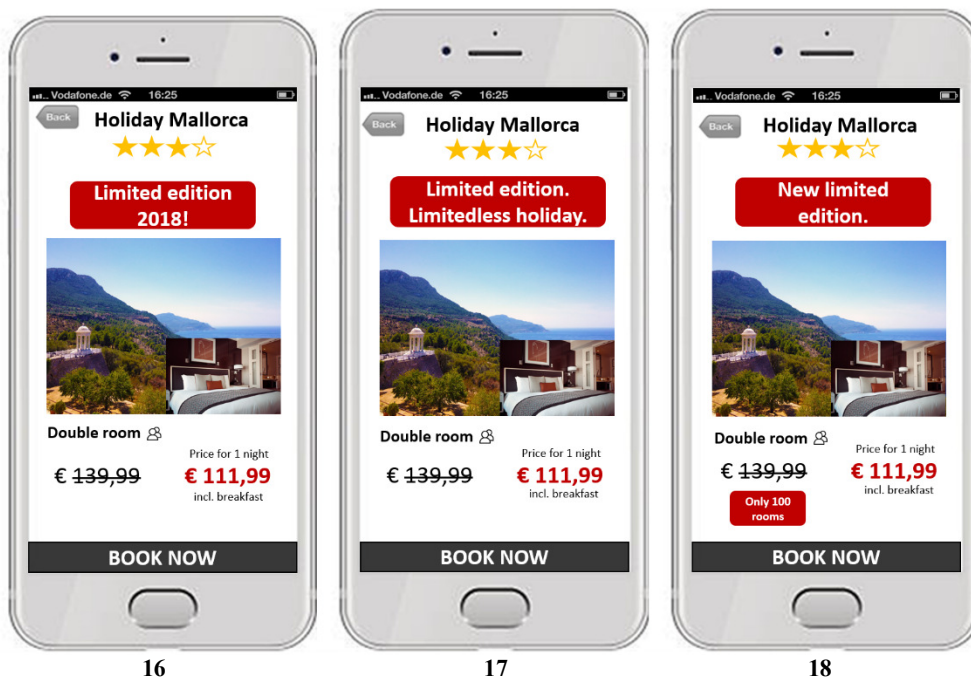


13  
Very short and prominent placed, not attractive, too simple to nudge one to book a trip

14  
Somehow special, does not clearly state that the offer is available for limited time (too vague), still time enough to book and still available then

15  
most triggered, important information, like offer = book it, seems to be something special, explicit, not too much pressure on consumer, still feel comfortable with it

## Limited-supply scarcity claims 16 to 18



16  
Not special, seems to be available throughout the whole year, does not trigger to book directly

17  
Too much text to feel triggered directly

18  
Too much text, word "new" rare, duplicate= limited & new, not trustable information, fake information

**APPENDIX B. QUESTIONNAIRE CONSTRUCTION***Questionnaire items***Demographics/ respondent information (DG)**

DG1. What is your gender? (male/ female)

DG2. What is your age? (- years old)

DG 3. What is your nationality? (-)

DG 4. What is your highest level of education? (no formal education; lower secondary school (for example: Hauptschule); intermediate secondary school (for example: Realschule); upper secondary school (for example: Gymnasium); Associate's degree (for example: AA, AS); Bachelor's degree (for example: BA, BS); Master's degree (for example: MA, MS, MEd), Professional's degree (for example: MD, DDS, DVM); Doctoral degree (for example: PhD, EdD)

DG5. What is your current employment status? (employed full time (40 or more hours per week); employed part time (up to 39 hours per week); unemployed; student; retired; homemaker; self-employed; unable to work)

DG6. What is your current net income (per month)? (no income; less than 400 €; 400 – 750 €; 751 – 1,500 €; 1,501 – 2,000 €; 2,001 – 2,500 €; more than 2,500 €; no answer)

DG7. How often do you purchase online? (more than 6 times a month; 5-6 times a month; 3-4 times a month; 1-2 times a month; once a month or less; never) *never = exclusion criteria*

DG8. How often do you book hotels online? (more than 6 times a month; 5-6 times a month; 3-4 times a month; 1-2 times a month; once a month or less; never)

DG9. Do you actively search for online offers (for example: discounts)? (strongly disagree – strongly agree)

DG10. Do you enjoy making online purchases? (strongly disagree – strongly agree)

**Section 1: Manipulation check (MC) (Wu et al., 2012) 5-point Likert scale**

MC1. I think the availability of this offer is limited (strongly disagree – strongly agree)

MC2. This offer is a limited offer (strongly disagree – strongly agree)

**Section 2: Perceived Scarcity (PS) (Wu et al., 2012) 5-point Likert scale**

PS1. I think that this offer is selling out soon (strongly disagree – strongly agree)

PS2. I think that many people will book this offer (strongly disagree – strongly agree)

PS3. I feel that the limited availability will cause a lot of people to book this offer (strongly disagree – strongly agree)

PS4. I think that the current availability of this offer is low (strongly disagree – strongly agree)

**Section 3: Perceived Novelty (PN) (Andrews & Smith (as cited in Esch & Winter, 2009) 5-point Likert scale**

PN1. This offer is boring/ exciting (very boring – very exciting)

PN2. This offer is tiring/ amazing (very tiring – very amazing)

PN3. This offer is typical/ untypical (very typical – very untypical)

PN4. This offer is predictable/ extraordinary (very predictable – very extraordinary)

PN5. This offer is usual/ unusual (very usual – very unusual)

PN6. This offer is ordinary/ unique (very ordinary – very unique)

PN7. This offer is common/ original (very common – very original)

**Section 4: Perceived Exclusiveness (PE) (Lynn & Harris, 1997) 5-point Likert scale**

PE1. I am not very attracted to this limited offer (strongly disagree – strongly agree) \*

PE2. I enjoy taking advantage of this offer that others miss out (strongly disagree – strongly agree)

PE3. I am more likely to take advantage of this offer if it is not limited (strongly disagree – strongly agree) \*

**Section 5: Perceived Value (PV) (Chowdhury & Abe, 2002) 5-point Likert scale**

PV1. I do not feel that this offer will be of good quality (strongly disagree – strongly agree) \*

PV2. Booking this offer will be a good deal (strongly disagree – strongly agree)

PV3. Booking this offer will be worthwhile if I spend time to compare it with other offers (strongly disagree – strongly agree) \*

PV4. I will not feel special by booking this offer (strongly disagree – strongly agree) \*

**Section 6: Purchase Intention (PI) (Grewal et al., 1998) 5-point Likert scale**

PI1. If I were going to book a hotel, the probability of booking this offer is (very low – very high)

PI2. The probability that I would consider booking this offer is (very low – very high)

PI3. The likelihood that I would book this offer is (very low – very high)

**Section 7: Perceived FOMO (FOMO) (Przybylski et al., 2013; Hato, 2013) 5-point Likert scale**

FOMO1. I fear that I might be missing out on this offer (strongly disagree – strongly agree)

FOMO2. I do not get nervous that I might be missing out on this offer (strongly disagree – strongly agree) \*

FOMO3. I worry that I might be missing out on this offer (strongly disagree – strongly agree)

FOMO4. When I miss out on this offer it upsets me (strongly disagree – strongly agree)

**Section 8: Perceived Competitiveness (CP) (Mowen, 2004) 5-point Likert scale**

CP1. I enjoy competition while taking advantage of this offer (strongly disagree – strongly agree)

CP2. I feel that it is important to outperform others by taking advantage of this offer (strongly disagree – strongly agree)

CP3. I enjoy testing my abilities against others when taking advantage of this offer (strongly disagree – strongly agree)

CP4. I feel that “winning” this offer is extremely important (strongly disagree – strongly agree)

*\*item is reverse scored*

**Reverse coded items:**

- PE1 (“I am not very attracted to this limited offer”)
- PE3 (“I am more likely to take advantage of this offer if it is not limited”)
- PV1 (“I do not feel that this offer will be of good quality”)
- PV3 (“Booking this offer will be worthwhile if I spend time to compare it with other offers”)
- PV4 (“I will not feel special by booking this offer”)
- FOMO2 (“I do not get nervous that I might be missing out on this offer”)

**Grouped variables:**

- DG2 into Age groups (1= younger than 18; 2= 18-24; 3= 25-34; 4= 35-44; 5= 45-54; 6= 55-64; 7= older than 64)

## APPENDIX C. DEMOGRAPHICS SAMPLE

Table 4. Highest level of education ( $n = 320$ )

LEVEL OF EDUCATION		CONDITION				TOTAL
		LSS	LTS	LSS & LTS	CONTROL	
Lower secondary school	Count	2	-	-	-	2
	%	2.5	-	-	-	0.6
Intermediate secondary school	Count	3	2	5	3	13
	%	3.8	2.5	6.3	3.8	4.1
Upper secondary school	Count	23	17	20	23	83
	%	28.6	21.2	25	28.6	26
Associate's degree	Count	2	2	4	5	13
	%	2.5	2.5	5	6.3	4.1
Bachelor's degree	Count	36	50	41	36	163
	%	45	62.5	51.2	45	50.9
Master's degree	Count	13	9	10	11	43
	%	16.3	11.3	12.5	13.8	13.4
Professional's degree	Count	-	-	-	2	2
	%	-	-	-	2.5	0.6
Doctoral degree	Count	1	-	-	-	1
	%	1.3	-	-	-	0.3
Total	Count	80	80	80	80	320
	%	100	100	100	100	100

Table 5. Current employment status ( $n = 320$ )

EMPLOYMENT STATUS		CONDITION				TOTAL
		LSS	LTS	LSS & LTS	CONTROL	
Employed full time	Count	9	12	10	10	41
	%	11.3	15	12.5	12.5	12.8
Employed part time	Count	12	7	5	8	32
	%	15	8.8	6.3	10	10
Unemployed	Count	1	-	1	2	4
	%	1.3	-	1.3	2.5	1.3
Student	Count	54	61	60	58	233
	%	67.4	76.2	75	72.5	72.8
Retired	Count	2	-	-	-	2
	%	2.5	-	-	-	0.6
Homemaker	Count	-	-	1	-	1
	%	-	-	1.3	-	0.3
Self-employed	Count	2	-	3	2	7
	%	2.5	-	3.6	2.5	2.2
Unable to work	Count	-	-	-	-	-
	%	-	-	-	-	-
Total	Count	80	80	80	80	320
	%	100	100	100	100	100

Table 6. Current net income (per month) ( $n = 320$ )

NET INCOME (PER MONTH)		CONDITION				TOTAL
		LSS	LTS	LSS & LTS	CONTROL	
<b>no income</b>	Count	10	11	8	12	41
	%	12.5	13.8	10	15	12.8
<b>Less than 400 €</b>	Count	15	14	17	11	57
	%	18.8	17.5	21.3	13.8	17.8
<b>400 – 750 €</b>	Count	18	19	16	20	73
	%	22.5	23.8	20	25	22.8
<b>751 – 1,500 €</b>	Count	19	18	24	17	78
	%	23.2	22.2	29.98	21.1	24.4
<b>1,501 – 2,000 €</b>	Count	7	7	11	3	28
	%	8.8	8.8	13.8	3.8	8.8
<b>2,001 – 2,500 €</b>	Count	4	5	2	6	17
	%	5	6.3	2.5	7.5	5.3
<b>more than 2,500 €</b>	Count	3	1	1	5	10
	%	3.8	1.3	1.3	6.3	3.1
<b>no answer</b>	Count	4	5	1	6	16
	%	5	6.3	1.3	7.5	5
<b>Total</b>	Count	80	80	80	80	320
	%	100	100	100	100	100

Table 7. Frequency purchasing online ( $n = 320$ )

FREQUENCY		CONDITION				TOTAL
		LSS	LTS	LSS & LTS	CONTROL	
<b>more than 6 times a month</b>	Count	3	3	3	3	12
	%	3.8	3.8	3.8	3.8	3.8
<b>5-6 times a month</b>	Count	5	3	5	4	17
	%	6.3	3.8	6.3	5	9.1
<b>3-4 times a month</b>	Count	16	16	14	10	56
	%	20	20	17.5	12.5	17.5
<b>1-2 times a month</b>	Count	26	25	27	30	108
	%	32.5	31.3	33.8	37.5	33.8
<b>once a month or less</b>	Count	30	33	31	33	127
	%	37.4	41.1	38.6	41.2	35.8
<b>never</b>	Count	-	-	-	-	-
	%	-	-	-	-	-
<b>Total</b>	Count	80	80	80	80	320
	%	100	100	100	100	100

Table 8. Frequency booking hotels online ( $n = 320$ )

		CONDITION				
FREQUENCY		LSS	LTS	LSS & LTS	CONTROL	TOTAL
more than 6 times a month	Count	-	-	1	1	2
	%	-	-	1.3	1.3	0.6
5-6 times a month	Count	2	1	-	-	3
	%	2.5	1.3	-	-	0.9
3-4 times a month	Count	1	2	-	1	2
	%	1.3	2.5	-	1.3	0.6
1-2 times a month	Count	5	61	4	3	14
	%	6.2	76.2	4.9	3.6	4.4
once a month or less	Count	60	16	67	58	246
	%	75	20	83.8	72.5	76.9
never	Count	12	-	8	17	53
	%	15	-	10	21.3	16.6
Total	Count	80	80	80	80	320
	%	100	100	100	100	100

Table 9. Active search for online offers (e.g., discounts) ( $n = 320$ )

		CONDITION				
AGREEMENT		LSS	LTS	LSS & LTS	CONTROL	TOTAL
strongly disagree	Count	7	7	5	7	26
	%	8.8	8.8	6.3	8.8	8.1
somewhat disagree	Count	17	12	18	14	61
	%	21.3	15	22.5	17.5	19.1
neither agree nor disagree	Count	5	10	5	11	31
	%	6.3	12.5	6.3	13.8	9.7
somewhat agree	Count	45	42	37	39	163
	%	56.3	52.5	46.3	48.8	50.9
strongly agree	Count	6	9	15	9	39
	%	7.3	11.2	18.6	11.1	12.2
Total	Count	80	80	80	80	320
	%	100	100	100	100	100

Table 10. Enjoy making online purchases ( $n = 320$ )

		CONDITION				
AGREEMENT		LSS	LTS	LSS & LTS	CONTROL	TOTAL
strongly disagree	Count	3	3	11	2	8
	%	3.8	3.8	13.8	2.5	2.5
somewhat disagree	Count	4	4	-	4	23
	%	5	5	-	5	7.2
neither agree nor disagree	Count	13	14	11	19	57
	%	16.2	17.4	13.7	23.7	17.7
somewhat agree	Count	44	31	35	46	156
	%	55	38.8	43.8	57.5	48.8
strongly agree	Count	16	28	23	9	73
	%	20	35	28.7	11.3	23.8
Total	Count	80	80	80	80	320
	%	100	100	100	100	100



# CAN **YOU** RESIST?

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