***Shopping online using the mobile channel: drivers of buying behaviour for Chinese consumers***

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**Abstract**
The emergence of online channels is opening up to new research topics in the retailing literature. Particularly in China, the multifunctional mobile retailing apps, allowing to buy online and socialize the shopping activity with relatives, friends and followers, are supporting the spread of online shopping. A structural equation model combining both traditional antecedents of online shopping - such as ease of use, time convenience, perceived risk - with emerging drivers like perceived price differentiation and shopping socialization is tested to measure the intention to buy using a smartphone by Chinese people. Empirical findings offer new insights for both scholars and practitioners.

**Keywords:** Mobile shopping, China, perceived price differentiation, shopping socialization, SEM.

**Aim of the study**
The retailing literature has seen a major revolution over the last years due to the increasing relevance assumed by electronic and mobile shopping channels. In less than five years (from 2009 to 2014) online reached a 10% sales growth at a worldwide level (Kumar et al., 2017). Today, global online sales accounts for 3.53 trillion US dollars with a constant two digits increase over the previous year (Statista, 2019).
The present study aims to analyse online shopping behaviour, with a specific focus on the shopping activity performed by Chinese people using a smartphone. The peculiarity of the Chinese context derives mainly from the way in which Chinese retailers evolved their offer and from the Chinese culture. At the beginning of the new millennium, Chinese retailers developed in a sort of *green field*, in which they were called to implement any kind of infrastructure, particularly with regards to technological and payment and delivery systems, among others. Furthermore, to compete with the west retailers that entered the market, the Chinese ones include in their shopping apps the instant messaging functionality, similar to the review system adopted by western competitors, but augmented with social network functionalities (*e.g.* pictures, comments, emoticons, likes, shares).

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These actions made the Chinese online retailing, and in particular its mobile channel, the most developed worldwide thanks to its flexibility and ability to constantly evolve and adapt to consumer needs and wants. Indeed, in 2017, while mobile sales (m-sales) account for 60% of the total online sales globally, in China its market-share exceeded 80% of online sales favored by the growing presence of the shopping apps installed in almost 70% of the smartphones of the Chinese population (China Internet Watch, 2018).

The main theoretical contribution of the paper is to evaluate the consumers' online shopping behavior using a smartphone by the combined effect of some of the main antecedents of the mobile shopping (ease of use, time convenience, perceived risk) and new aspects, derived from the traditional retailing literature and adapted to the mobile context (perceived price differentiation, shopping socialization).

This article is structured as follows. The main hypotheses are proposed in the next section. Then the methodology and the main results are presented. A concluding section with the main implications and suggestions for future studies is presented at the end.

**Theoretical framework and hypotheses**

The research draws on the retailing literature and the Technology Acceptance Model (TAM) and aims at investigating the main drivers of consumers' intention to buy online using a mobile app. Online retailers should provide consumers with ease of use systems and in-depth information about the provided products and services (Harris and Goode, 2010). Accordingly, we can posit that:

*H1: Ease of Use (EoU) has a significant and positive impact on the intention to buy online using a smartphone (SMART).*

The absence of time and space constrains in shopping using a smartphone makes this channel extremely time convenient (Childers et al., 2001). Thus, we postulate that:

*H2: Time Convenience (TIME) has a significant and positive impact on the intention to buy online using a smartphone (SMART).*

When consumer perceive online shopping as risky, with lacks in payment security, they will shop less online (Forsythe et al., 2006). Then, we hypothesize that:

*H3: Shopping Risk (RISK) has a significant and negative impact on the intention to buy online using a smartphone (SMART).*

Price is key in online purchase (Reibstein, 2002), particularly for price sensitive consumers that use to compare retailers and channels in order to get the best value. Price comparison was favoured by the emergence of mobile technologies. A recent study found that the online/offline perceived price differentiation leads consumer to buy online to save money (Fassnacht and Unterhuber, 2016). So, we assume that:

*H4: The Perceived Price Differentiation (PRICE) has a significant and positive impact on the intention to buy online using a smartphone (SMART).*

Consumers shopping socialization (SOCIAL) is under investigation by scholars since long (Moschis and Churchill, 1978). Arnould and Reynolds (2003) defined SOCIAL as the pleasure experienced by consumers by sharing their shopping task with relatives

and friends. The increasing adoption of digital technologies is opening up new opportunities for consumers that can nowadays socialize their shopping online through social networks. Accordingly, we postulate the following hypothesis:

*H5: Shopping socialization (SOCIAL) has a significant and positive impact on the intention to buy online using a smartphone (SMART).*

**Methodology**

To empirically investigate the above theoretical hypotheses, an online survey was designed on Survey Monkey and distributed through social networks. The questionnaire was translated in Chinese due to the low percentage of English speakers among the population. The questionnaire, pre-tested on a small sample of Chinese consumers in November 2018, was launched online in January 2019. In one week, 903 responses were collected. Responses with missing data were dropped from the dataset. The empirical analysis was performed on a total of 818 valid and completed questionnaires, is filled mainly by men (60.4% of respondents). Referring to the age of respondents, the sample is as follows: 38.8% are aged 18-24 years; 51.5% are aged 25-35 years, 9.2% are aged 36-50 years and 0.6% of the sample is older than 50 years.
The determinant variable (BUYSMART: 4 items) was derived by Overby and Lee (2006). The Ease of Use construct (EoU: 3 items) was adapted from the original scale of Harris and Goode (2010). Time convenience (TIME: 2 items) was derived by Childers et at. (2001). The empirical analysis of Forsythe et al. (2006) was used to define Shopping Risk (RISK: 3 items). Perceived price differentiation (PRICE: 2 items) was measured based on the results of the study conducted by Fassnacht and Unterhuber (2016). Finally, Shopping Socialization (SOCIAL: 3 items) was adapted from the study of Arnould and Reynolds (2003). All items were measured using a 7 point-Likert scale.

**Results**

The software Lisrel 8.80 was used to estimate the covariance-based structural equation model with the maximum likelihood method (CB-SEM) identified in the theoretical section. Table 1 shows that the value for *Average Variance Extracted* (AVE) and for *Composite Reliability* (CR) of the investigated constructs is higher than their cut-offs (0.5 for AVE and 0.7 for CR), except for the AVE of BUYSMART. Nevertheless, the discriminant validity is proved using the Fornell and Larcker criterion (1981): all the square root of each AVE in the diagonal (in bold) is higher than the correlation (off-diagonal) for each construct in the relevant rows and columns.

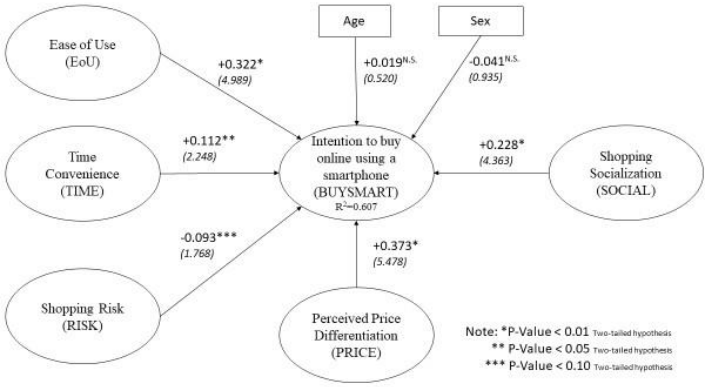
**Tab. 1 – Internal and External Validity of Constructs.**

| Constructs | | AVE | CR | Correlation Matrix | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Intention to buy using a smartphone* | **BUYSMART** | 0.483 | 0.835 | **0.695** | | | | | |
| *Ease of Use* | **EoU** | 0.615 | 0.761 | 0.663 | **0.784** | | | | |
| *Time Convenience* | **TIME** | 0.757 | 0.861 | 0.467 | 0.507 | **0.870** | | | |
| *Price Convenience* | **PRICE** | 0.581 | 0.735 | 0.667 | 0.587 | 0.421 | **0.762** | | |
| *Shopping Risk* | **RISK** | 0.526 | 0.768 | 0.372 | 0.445 | 0.369 | 0.490 | **0.725** | |
| *Shopping Socialization* | **SOCIAL** | 0.637 | 0.840 | 0.552 | 0.465 | 0.351 | 0.470 | 0.463 | **0.798** |

The overall model fit can be considered enough good. Although the significant Satorra-Bentler Chi-Squared ($\chi^2_{(109)}$=318.144), other indexes not as heavily influenced by

sample size indicated a good overall fit such as for example the not-significant Test of Close Fit for the RMSEA that shows no particular multicollinearity problems (RMSEA= 0.486 - Test of Close Fit (RMSEA < 0,05)=0.630). No problems with residuals are proved by the good value of the Standardized RMR (0.035). Moreover, the main fit indexes show appreciable results higher than their cut-offs (Hu and Bentler, 1999), as follows: Goodness of Fit Index (GFI)=0.948; Comparative Fit Index (CFI)=0.983; Normed Fit Index (NFI)=0.974.

**Fig. 1 – Results of the Structural Model.**




The structural model explains a large percentage of the variance of the intention to buy using a smartphone by Chinese people, being the $R^2$=0.607.
In line with the main literature, ease of use of mobile apps and convenience to buy with no time and space constraints have a positive impact on consumers' intention to buy using a smartphone, confirming our first and second hypotheses (H1: β=0.322*; H2: 0.112**). Although with a weak significant effect, results confirm that when the mobile shopping task is considered as risky, the intention to buy online decreases (H3: β= -0.093***). Interesting are the results concerning the perceived online/offline price differentiation; the opportunity to save money buying online resulted to be the main antecedent for mobile shopping intentions (H4: β= 0.373*). Positive and significant is also the effect of shopping socialization on the intention to buy using a smartphone (H5: β= 0.228*). Chinese appreciate the opportunity to socialize their shopping task and ask relatives, friends and followers suggestions on their shopping. Sex and age of the respondents were both found not significant.

**Conclusions and implications**

This paper contributes to the retailing literature exploring traditional and new drivers of Chinese consumers' intention to purchase through the mobile channel. The online Chinese retailing context is very peculiar due to the spread of multifunctional mobile apps that simultaneously act as social networks, online stores, payment methods, etc. Online commerce giants (e.g. Alibaba, JD, Taobao) are reshaping the retailing context making the online shopping an unique and engaging activity. Findings show that mobile

shopping is not only perceived as easy to perform and timely convenient, but also cheap and socially engaging. The micromarketing activity carried out by Chinese retailers customize the promotional activity to the user by differentiating products and discounts based on the place and time where he/she is/has, making perceived price differentiation between online and offline channels the main driver of the intention to buy using a smartphone. Furthermore, the opportunity to socialize the shopping with relatives, friends and followers, strongly influences Chinese intention to buy online using a smartphone. A final interesting result concerns the perceived risk of the online shopping. Indeed, although negative, its effect is weak in size and significance. The retailers' control and centralization of the payment systems is making the perceived risk of shopping online even weakly negative.

Although presenting new insights regarding the consumer online shopping behaviour, in what is considered today the most evolved context to this regard, this paper presents several limitations that future studies should overcome. First, the present study does not consider specific product categories in its empirical analysis, while extant literature suggests that the product category can strongly moderates buying behaviours. Accordingly, in future studies, similar empirical analyses should be replicated on specific product categories. Second, although the large dataset, the overall Chinese population can be not completely represented, limiting the generalizability of results. A further test evaluating the representability of the sample should be implemented.

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