



Does family life cycle stage influence e-shopping acceptance by Indian women? An examination using the technology acceptance model

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ABSTRACT

This study contributes to the literature that advocates the use of consumer segmentation by family life cycle (FLC) stages, which are found to have a greater influence on changes occurring in an individual's life than age. It addresses the youth bias of most research on e-shopping adoption and the emergence of older e-shoppers as an attractive market segment by covering women of all age groups. It evaluated the effect of perceptions and attitudes towards e-shopping acceptance, as well as their variations across FLC stages, by using the technology acceptance model. The 10 FLC stages were selected by modifying the Duvall FLC classification system to reflect the Indian context. The results show that the different FLC stages have a significant impact on the e-shopping behaviour of women. While deals and discounts were found to influence all groups, time-saving and better decision-making through online shopping sites also significantly influenced e-shopping behaviour. Furthermore, the perceived usefulness and/or attitude were important factors that directly affected e-shopping technology adoption and usage patterns across a majority of the FLC stages. The study proved that FLC stages had greater power than age in explaining e-shopping adoption and e-retailers should not ignore them in designing e-marketing applications.

ARTICLE HISTORY

Received 15 March 2017
Accepted 24 January 2018

KEYWORDS

Socio-demographics; family lifecycle (FLC); e-shopping; technology acceptance model (TAM); age; women

1. Introduction

Shopping today is not just an essential activity, but a form of entertainment. Online shopping has redefined the way people shop, with increased internet penetration making India a promising market for e-commerce (Assocham 2017). Socio-demographic and lifestyle-related changes have been instrumental in persuading Indian consumers to switch from brick-and-mortar retail stores to e-shopping (EY 2012). Multiple studies have attempted to quantify the role of socio-demographics on the use of e-shopping (meta-analysis by Ahmed and Sathish (2015); Huseynov and Yildirim (2016); Ari and Nasir (2014)). Considering the profound business implications, there is a need for further investigation of e-shopping behaviour of different consumer groups (Huseynov and Yildirim 2016; Ahmed and Sathish 2015; Ari and Nasir 2014; Thakur and Srivastava 2013).

The effects of socio-demographic factors like age, gender, income, education, marital status, occupation, and culture on e-shopping technology adoption have been studied (Agudo-Peregrina, Hernández-García, and Acquila-Natale 2016; Khare 2016; Pascual-Miguel, Agudo-Peregrina, and Chaparro-Peláez 2015; Lian and Yen 2014; Davis, Lang, and San Diego 2014; Khare and

Sadachar 2014; Gong, Stump, and Maddox 2013; Gehrt et al. 2012; Khare, Anshuman, and Singh 2012; Richa 2012; Hernández, Jiménez, and José Martín 2011; Naseri and Elliott 2011; Passyn, Diriker, and Settle 2011). Among them, classifying by age has been found to be most popular due to its simplicity and ready availability. Though age has been a useful and easy tool for segmentation, studies show that people of the same age may not behave similarly; hence, age is not a good segmenting factor to understand group motivations, (Parment 2013). To address this, studies have focused on generation-based grouping, rather than age (Chauke and Dhurup 2017; Bilgihan 2016; Lissitsa and Kol 2016; Tang et al. 2016; Parment 2013). Furthermore, there is a strong evidence that most situational and behavioural changes in life occur with one's family life cycle (FLC) stage rather than with age (Frey, Xu, and Ilic 2017; Passias, Sayer, and Pepin 2017; Wepfer et al. 2015; Allen and Finkelstein 2014; Jian Xiao and Yao 2014; Stalker 2014; Baxter et al. 2013; Davison and Ryley 2013; Erickson, Martinengo, and Hill 2010; Camacho and Hernández-Peinado 2009; Hand et al. 2009; Cron 2001), which influences one's shopping behaviour as well (Burningham et al. 2014; Johnstone and Todd 2012).

Studies aimed at understanding the differences in e-shopping adoption and usage patterns based on FLC stages remain limited. Kotler and Keller (2006) postulate that the characteristics of an individual, such as age and FLC stage, have a direct impact on his/her online purchase behaviour. Also, FLC stage influences the adoption and usage behaviour towards some technology applications (Kuoppamäki, Taipale, and Wilska 2017; Frey, Xu, and Ilic 2017; Fillion and Ekionea 2010; Brown and Venkatesh 2005). The impact of FLC stages on consumer behaviour is large in India, where purchase decisions are often taken collectively, with families and friends (Lim and Dubinsky 2004).

There is no clear framework to understand the influence of FLC stages on B2C e-commerce (Brown and Venkatesh 2005). Research in this area would add to the existing body of knowledge in the field of online shopping (Naseri and Elliott 2011), in understanding customer needs as they transition through their life stages (Sullivan and Heitmeyer 2008). Researchers have shown that it is important to understand the e-shopping behaviour of people at different stages of life (Law and Ng 2016; Lian and Yen 2014; Thamizhvanan and Xavier 2013; Wagner, Hassanein, and Head 2010). As most online shopping studies, including those in India, have been conducted among young university students, many of them do not consider the online behaviour of middle-aged and older adult users (Law, Kwok, and Ng 2016; Law and Ng 2016; Ahmed and Sathish 2015; Lian and Yen 2014; Hernández, Jiménez, and José Martín 2011), despite the fact that older adults are a lucrative market segment (Law and Ng 2016; Lian and Yen 2014; Hernández, Jiménez, and José Martín 2011) and understanding their adoption and use of the technology is critical for the economy (Macedo 2017; Hogeboom et al. 2010). However, studies have also shown that all older internet shoppers must not be treated alike (Kuoppamäki, Taipale, and Wilska 2017; Law and Ng 2016; Lian and Yen 2014). Hence, this study splits the entire spectrum of Indian population, on the basis of FLC stages, by including e-shoppers of all age groups. It researches the entire range of FLC stages that a person would cross in his lifetime and analyses the e-shopping behaviour at each stage, giving an overall understanding of e-shopping adoption behaviour in India, and helping e-retailers understand e-shoppers of all age groups, as well as their motivation to shop online.

Additionally, this study focuses on women e-shoppers. Some important reasons to choose women are: (a) women are largely responsible for household shopping and buying decisions (Miller 2013; Popcorn and Marigold 2000); (b) FLC stages have a larger impact

on women than men (Wepfer et al. 2015; Stalker 2014); (c) women are the primary care-givers in a family (Roman and Cortina 2016; Umberson, Thomeer, and Williams 2013); (d) very few studies have concentrated exclusively on women e-shoppers (Chou, Chen, and Lin 2015; Ruane and Wallace 2013). As studies have shown that fewer women are online in India than in other BRIC countries, and more than 80% of online women shoppers recommend their online purchases to other women, it is very important to understand the attitude and behaviour of women towards e-shopping. This will give a more comprehensive picture of the degree of e-commerce inclusion in society (EY 2015).

2. Objective of the study

The objective of the study is to find the influence of FLC stages on e-shopping adoption and usage behaviour, as well as that of e-shopping antecedents. To achieve this, the study uses the technology acceptance model (TAM). TAM is universally considered as a robust, powerful, and parsimonious model for predicting user's adoption of e-shopping technology (Lim and Ting 2012). TAM is an adaptation of the theory of reasoned action that was developed by Davis (1989) to investigate the factors driving technology adoption. TAM (the core constructs and their definitions can be found in Table 1) proposes that perceived usefulness (PU) and perceived ease of use (PEOU) affect one's attitude towards technology (ATT), which in turn affects behavioural intention (BI) to adopt a technology. PEOU has a causal effect on PU. Similarly, PU, in addition to affecting ATT, also directly affects the BI towards a technology, thereby making ATT a partial mediator. External factors such as demographic, social, and cultural factors affect PU and PEOU. While many studies have been conducted to understand the influence of external factors on TAM, the effect of FLC stages on TAM have been less extensively studied (Ari and Nasir 2014). Studies have emphasised on testing the ability of TAM to predict technology adoption (Sarkar and Khare 2017) across household

Table 1. Technology acceptance model (TAM) – core constructs and definition (Davis 1989).

PU: The degree to which a person believes that using a particular system would enhance his or her job performance
PEOU: The degree to which a person believes that using a particular system would be free of effort
ATT: Individual's positive or negative feeling about performing the target behaviour
BI: The degree to which a person has formulated conscious plans to perform or not perform some specified future behaviour
<i>Actual behaviour:</i> Buying behaviour is the decision processes and acts of people involved in buying and using products

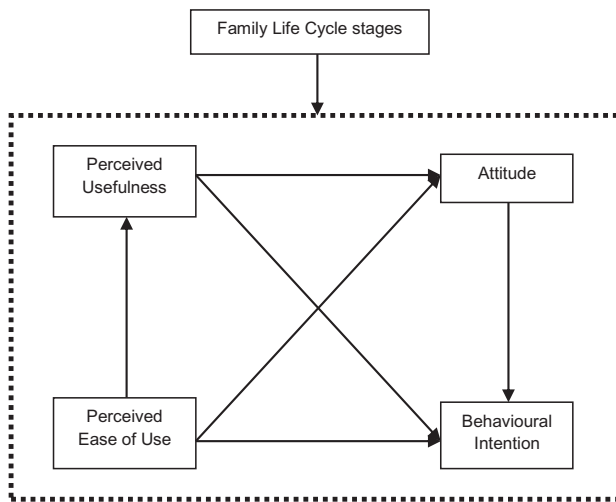


Figure 1. Influence of FLC stages on TAM variables.

(Brown and Venkatesh 2005). Therefore, the present research attempts to extend the application of TAM by including the FLC stages as external variables. Additionally, the study also tests the direct effect of PEOU on BI to adopt a technology (Sreeram, Kesharwani, and Desai 2017; Faqih 2016) (Figure 1).

Therefore, this study postulates the following research questions:

RQ1: Does the FLC stage of women affect their perception about the usefulness of e-shopping?

RQ2: Does the FLC stage to which women belong influence their PEOU of e-shopping?

RQ3: Do women at different FLC stages develop different attitudes towards e-shopping?

RQ4: How do women at different FLC stages differ in their BI to shop online?

RQ5: During e-shopping, does the buying behaviour of women vary according to the FLC stage to which they belong?

3. Review of literature

3.1. FLC stages concept

FLC stages are a multi-dimensional construct that captures multiple demographic variables, which may include the household head's age, marital status, presence or absence of children, age of the children and the employment status of the household head (Jain 1975). The life cycle concept was introduced to the domain of marketing by Wells and Gubar (1966), who found FLC to have better explanatory power than the variable 'age' and noted that irrespective of a product or a service, life cycle is likely to be a more meaningful way of

classifying consumers. Thereafter, many studies have been conducted in different areas which have shown FLC to be a good predictor variable (Trinh and Wright 2014; Bauer and Auer-Srnka 2012). Although the use of this construct declined after 2000, there has been a renewal of interest in recent years (Bauer and Auer-Srnka 2012).

FLC postulates that when a family shifts from one stage of life to the next, its members experience various changes. As a result of this there is a change in their: financial position (Jian Xiao and Yao 2014); stress level and time pressure (Stalker 2014; Erickson, Martinengo, and Hill 2010); leisure behaviour (Frey, Xu, and Ilic 2017; Passias, Sayer, and Pepin 2017; Baxter et al. 2013; Davison and Ryley 2013); consumption of services (Camacho and Hernández-Peinado 2009); brand preferences (Mathur, Moschis, and Lee 2003); work-life balance (Wepfer et al. 2015; Allen and Finkelstein 2014; Erickson, Martinengo, and Hill 2010); and job satisfaction (Cron 2001). In an attempt to manage these demanding life changes and new life situations, they modify many of their activities; shopping is no exception (Birmingham et al. 2014; Trinh and Wright 2014; Johnstone and Todd 2012; Mathur, Moschis, and Lee 2003, 2008; Hong et al. 2005; Wilkes 1995; Hawks and Ackerman 1990; Mitchell 1985; Slama and Tashchian 1985; Darden and Perreault 1976; Rich and Jain 1968; Stone and Form 1957).

3.2. Socio-demographics on e-shopping adoption

A number of studies have used TAM and unified theory of acceptance and use of technology to identify the effects of various socio-demographic factors on e-shopping adoption, especially age. Most studies have shown that younger consumers are more likely than older ones to use the internet for shopping. Khare, Anshuman, and Singh (2012) found that while age did not have a significant effect on the PU of e-shopping, it is noted that young shoppers perceive e-shopping to be easy to use and easily develop a positive attitude towards it than the older shoppers. Their comfort with technology increases their preference for online purchases (Suel, Le Vine, and Polak 2015). Older consumers may find websites intimidating, and it influences their level of acceptance (Khare and Sadachar 2014). Law and Ng (2016) studied the online shopping behaviour of mature e-shoppers (between the ages of 40 and 70 years) in Hong Kong and observed that the PEOU towards e-shopping is higher among middle-aged users (41–50 years) when compared with older users (above 50 years), which affected their ATT. Among both groups, PEOU is found to have both direct and indirect effect

(through ATT) on BI to shop online, and PU did not have a direct effect on e-shopping BI but only through ATT. Law, Kwok, and Ng (2016) study on middle-aged non-online shoppers (31–60 years) found ATT to have a full mediation effect on the PEOU–BI relationship but partial mediation on PU–BI relationship. A comparison of the e-shopping behaviours of young (20–35 years) and old adults (above 50 years) showed that performance expectation had a direct positive effect on BI to shop online, but effort expectation had no significant effect, with no significant inter group differences (Lian and Yen 2014). Hernández, Jiménez, and José Martín (2011) also observed similar results; that is, although both PU and PEOU had significant effects on ATT, only PU affected shopping behaviour and not PEOU. There are no differences between the effects of the perceptions of e-commerce on purchasing behaviour across ages (15–25, 26–45, and over 46 years). The study concluded that once the initial barriers to e-commerce are surmounted, age cannot be a barrier for e-shopping. Farag, Dijst, and Lanzendorf 2003 showed that age is inversely related to e-shopping in a nonlinear manner; people up to the age of 35 years are inclined to buy online, while the probability of buying online decreases after that age.

Other socio-demographic factors such as marital status, the presence of children, income, which also comprise the FLC stage, have also been tested. While Liebermann and Stashevsky (2009) and Bhatnagar, Misra, and Rao (2000) reported marital status to have an insignificant effect on e-shopping, other studies have found that marital status, when combined with the presence or absence of children in the household, has a significant impact on e-shopping (Gong, Stump, and Maddox 2013). The presence of children at home has been found to be a constraining factor for shopping; such families easily develop a positive attitude towards e-shopping and are more inclined to shop online (Richa 2012; Hand et al. 2009; Dholakia and Uusitalo 2002; Morganosky and Cude 2000) than in offline stores (Sondhi 2015). Studies also observed differences in perception and adoption of e-shopping across generations with respect to age, marital status, and a number of children at home (Lissitsa and Kol 2016). Helsper (2010) compared the influence of FLC stages and generations (Generation X and Generation Y) to determine the influence of gender on internet use. The result showed that while generation had no significant independent effect, FLC stages showed a significant effect on internet usage behaviour. Hernández, Jiménez, and José Martín (2011) observed that income affected the 'PEOU–ATT' relationship; that is, lower-income consumers base their attitude upon

the PEOU while performing online transactions, whereas the high-income group is not influenced by the PEOU when evaluating e-commerce.

3.3. FLC stages and technology adoption

FLC stages are found to have a significant relationship with technology adoption. The seminal studies on the influence of FLC stages on personal computers' (technology) adoption in households showed that FLC view of understanding the adoption decisions and use of technology across households improves our understanding of certain characteristics, which were not significant in the basic model of adoption of technology in the household (MATH) model but become significant when examined using certain FLC stages (Brown and Venkatesh 2005; Brown, Venkatesh, and Bala 2006). Thereafter, a number of studies have been conducted to find the influence of FLC stages on the adoption of various technologies, such as HDTV (Baaren, Van De Wijngaert, and Huizer 2008), mobile phones (Fillion and Ekionea 2010), interactive TV (Obrist, Bernhaupt, and Tscheligi 2008), e-wallet (Olsen, Hedman, and Vatrappu 2011), wireless sensor network services (Lin, Lu, and Hsieh 2011), and digital terrestrial television (Turk et al. 2016).

Studies have shown that the FLC stages had a significant effect on the adoption and usage of certain internet-based technologies like internet (Van Deursen and Helsper 2015; Helsper 2010), social networking sites (Tanis, van der Louw, and Buijzen 2017), information and communication technologies (Rudi et al. 2015), and social connectedness (Chesley and Johnson 2014). Frey, Xu, and Ilic (2017) studied the influence of FLC stages on mobile app adoption and has reported that the app adoption process differed based on the FLC stage to which one belonged. Jiang et al. (2015) included the FLC stages in the e-commerce recommendation system and found its effect on consumer product purchase in China. Sondhi (2015) conducted a qualitative study on the e-shopping behaviour of young parents (30–40 years) of multiple LC stages, while purchasing childcare products; it showed that young parents who had time constraints frequently purchased children's products and services online. Kuoppamäki, Taipale, and Wilska (2017) studied the effects of FLC stages on mobile shopping (m-shopping) behaviour among older adults (above 55–74 years). The results proved that FLC stages had a significant impact on m-shopping behaviour; the presence of children induces m-shopping, while FLC stages involving older and retired people are associated with reduced m-shopping behaviour m-shopping is best explained by FLC stages.

From the literature survey, it is evident that although various socio-demographic factors have been studied for e-shopping technology adoption, the effects of FLC stages have been explored the least. None of the above-mentioned studies compared families across the full range of FLC stages on e-shopping behaviour. They also did not consider the age of children while splitting the FLC stages. Thus, the current study focused on the influence of FLC stages on e-shopping, considering all FLC stages passed by an individual in a lifetime rather than concentrating on a particular group. FLC stages in this study are defined not only by the presence/absence of children but also by the age of children. Moreover to take this research further, our study examines the influence of FLC stages on various antecedents of e-shopping along with the actual buying behaviour (Baaren, Van De Wijngaert, and Huizer 2008; Brown and Venkatesh 2005).

4. Preferred life cycle stage typology

Considering various theories, researchers have arrived at a number of FLC typologies over the years. Duvall FLC classification system (Manyam and Junior 2014; Laszloffy 2002) is the basis for FLC stage in this study, since the classification of families based on children's age is simple and parsimonious. However, considering the Indian family system, slight modifications are made in the typology, as discussed below.

- (1) Duvall (1971) splits FLC stages based on the presence/absence of children and the age of the oldest child. Our study splits FLC stages based on the presence/absence of children and the age of the youngest child as the presence of young children in households act as a constraint for shopping. As children grow older, the demand for childcare declines, resulting in increased levels of control and lower stress for parents (Cooke and Rousseau 1984), which could result in comfortable in-store shopping.
- (2) An additional stage of 'expecting parents (EP)' – those who are pregnant with their first child – is included in the model. Studies have identified a difference between the online shopping behaviour of women before and during pregnancy (Jiang et al. 2015). The study includes this stage to understand whether pregnancy (a situation) changes the perception towards e-shopping.
- (3) Duvall explained launching families as households consisting of children above the age of 18. We further split that stage into two:
 - a. Families with adult dependents, wherein the youngest child is unmarried and financially dependent on the parents and

Table 2. Classification of stages of FLC.

S. no.	Stage	Operational definition
Early LC stages		
1	Newly married (NM)	Married women without children
2	Expecting parents (EP)	Pregnant women bearing child 0–9 months
3	Families with infants FN(I)	Families with youngest child below 3 yrs
4	Families with preschool children FN(PC)	Families with youngest child 3–5 yrs
5	Families with school children FN(SC)	Families with youngest child 6–12 yrs
Later LC stages		
6	Families with teenage children FN(TC)	Families with youngest child 13–18 yrs
7	Families with adult dependents FN(AD)	Families with youngest child 18 yrs – till they are employed
8	Families with adult independents FN(AI)	Families with youngest child employed – till they leave the parental nest
9	Families in the middle years (EN&SS)	Empty nest to retirement of either spouse
10	Aging families (EN&SS)	After retirement until the death of both spouses

- b. Families with adult independents, wherein the youngest child is unmarried and financially independent but stays with parents through choice.

This split is necessary for India because adult, unattached, and independent children often continue to stay with their parents (*Times of India*, January 27, 2010). In this case, children need not be financially supported by their parents and may, in fact, contribute to additional income to the family, which may influence e-shopping.

Table 2 shows the classification of FLC stages. There are 10 FLC stages, broadly classified as early LC stages and later LC stages for convenience. In this study, we refer to families that involve children as a full nest (FN) based on the study by Wells and Gubar (1966).

5. Integrating TAM and FLC stages

5.1. PU and FLC stages

Shopping involves expenditure of time, energy, and money. For women, the transition to parenthood increases the amount of and time spent on routine housework (Stalker 2014). Families with especially young children [FN(I), FN(PC), and FN(SC)] have been found to undergo high levels of stress (Stalker 2014; Erickson, Martinengo, and Hill 2010; Jeffrey Hill et al. 2008; Cox et al. 2008), which results in high level of both work–family and family–work conflicts among parents (Wepfer et al. 2015; Allen and Finkelstein 2014; Adkins and Premeaux 2012). To manage the time crunch, these parents are found to shop quickly (Rich and Jain 1968), avoid out-shopping (Darden and

Perreault 1976), and reduce the time spent on leisure activities such as entertainment (Frey, Xu, and Ilic 2017; Passias, Sayer, and Pepin 2017; Baxter et al. 2013). At the same time, these families are involved with purchases (Slama and Tashchian 1985) and seek convenience in their shopping activities (Sondhi 2015). In addition to time pressure, these families are found to be financially unstable (Jian Xiao and Yao 2014), employing wise buying habits (Wells and Gubar 1966) and bargain hunting (Luong and Sleg 2014; Cox, Cox, and Anderson 2005), influencing their purchase decisions. Families with no children have the lowest level of work–family and family–work conflicts (Allen and Finkelstein 2014). These families do not face time or financial pressure similar to families with children (Jian Xiao and Yao 2014). Studies have shown that when a consumer is under time pressure, the usefulness of product information increases, making e-shopping highly advantageous (Chiu et al. 2014; Childers et al. 2002) having a direct influence on the PU of e-shopping (Sreeram, Kesharwani, and Desai 2017). Thus, FLC stages with children will perceive e-shopping to be more useful than FLC stages without children.

During later LC stages that involve children, work–life pressures may not decrease but slightly change focus (Allen and Finkelstein 2014) due to the frequent combination of teenager-parenting and eldercare (Beutell and Wittig-Berman 2008; Dilworth and Kingsbury 2005). This puts a premium on time utilisation among these parents. Moreover, families involving grown-up dependent children [FN(TC) and FN(AD)] are found to undergo financial distress (Jian Xiao and Yao 2014). However, once children become independent, the family is in a better financial position and has better work–life balance and sufficient leisure time than families involving teenaged and dependent adolescent children (Allen and Finkelstein 2014; Jian Xiao and Yao 2014). Thus, FN(TC) and FN(AD) may find the time and monetary saving benefits of e-shopping useful, than FN(AI) and EN&SS. As people age, the ability to process information becomes stressful and time consuming (Bilgihan 2016; Parment 2013). Since FN(TC) and FN(AD) already have time constraints, they may not be much interested in seeking information. However, older parents with excess discretionary time are found to spend more time on the internet, to overcome their feeling of loneliness (Tanis, van der Louw, and Buijzen 2017). They get involved in various types of technology usage (Frey, Xu, and Ilic 2017; Kuoppamäki, Taipale, and Wilska 2017; Macedo 2017; Rudi et al. 2015) that resulted in information-seeking behaviour (Frey, Xu, and Ilic 2017). Thus, FN(AI) and EN&SS, who have excess discretionary time, may make better use of

information to improve their purchase decisions than FN(TC) and FN(AD).

5.2. PEOU and FLC stages

PEOU is found to be a significant motivator for e-shopping adoption (Law and Ng 2016; Law, Kwok, and Ng 2016). Younger consumers are likely to perceive the internet as easy to use and prefer it for shopping (Khare 2016; Khare, Anshuman, and Singh 2012). Families in early LC stages, with no children [NM and EP] have more discretionary time (Allen and Finkelstein 2014) to spend on the internet; belonging to the Generation Y millennial group, they are tech savvy with technology being ‘third hand and second brain’ (Bilgihan 2016). Young families with children, though may perceive e-shopping easy, such families spend less time on the leisure activities due to time constraints (Frey, Xu, and Ilic 2017; Passias, Sayer and Pepin 2017; Baxter et al. 2013). Moreover, as the family expands, product category requirement increases, which is also time-consuming. Therefore, these young families with children demand more flexibility to use online shopping sites (OSSs) with easy navigation facilities than NM and EP. Hence, among early LC stages, families without children in the NM and EP stages will perceive e-shopping to be easier to use than families with children in the FN(I), FN(PC), and FN(SC) stages.

Older consumers are more accustomed to traditional shopping formats and are not comfortable navigating e-shopping websites (Khare, Anshuman, and Singh 2012). However, Later LC stages involving children – FN(TC), FN(AD), and FN(AI) – may perceive e-shopping to be easier to use than families without children (EN&SS) due to technology transfer from the young generation (grown-up children) to the older generation (Kuoppamäki, Taipale, and Wilska 2017; Luijckx, Peek, and Wouters 2015; Brown and Venkatesh 2005).

5.3. Attitude and FLC stages

Customers’ attitude towards e-shopping was found to be affected by situational factors (Sarkar and Khare 2017; Hand et al. 2009). A shift in FLC stages is a situational change that will greatly affect both familial situations and one’s shopping behaviour. In India, socio-economic changes have put tremendous pressure on urban parents. Especially, during the transition to the parenthood stage, families with children look for convenience in their shopping (Sondhi 2015). For them, the e-channel promises to be a comfortable mode of shopping, which, in turn, helps them develop a positive attitude towards e-shopping (Morganosky and Cude 2000). Moreover,

parents with young children are particular about the purchase process and items, show more involvement with purchases (Slama and Tashchian 1985), and have wiser buying habits (Wells and Gubar 1966). This may motivate them to use the product information available online for making easy price comparisons and better choices. Young mothers also seem to recognise their necessities and make better choices based on online recommendations. However, young families with no children may like to enjoy the offline store atmosphere. Thus, young families with children – FN(I), FN(PC), and FN(SC) will develop a more positive attitude towards e-shopping than families without children – NM and EP.

Several studies have shown that, older people perceive shopping online as risky and develop a negative attitude towards it (Jing Yang, Sarathy, and Lee 2016; Lian and Yen 2014) due to the lack of the touch-and-feel aspect in e-shopping. However, among later LC stages, families with dependent children face time and financial crunch, and try spending more time with adolescent children to develop a mutual bond (Allen and Finkelstein 2014). Therefore, e-shopping is considered a wise choice, as it facilitates increased contact and time spent with children at home. Internet facilities at homes of families with children also have a positive effect on e-shopping attitude (Farag et al. 2007). Hence, older families with children – FN(TC), FN(AD), and FN(AI) – may evaluate online shopping more positively than the EN&SS stage. However, FN(AI) and EN&SS may be inclined to seek information online than any other FLC groups, due to the availability of excessive leisure time (Frey, Xu, and Ilic 2017).

5.4. BI (buying behaviour) and FLC stages

The presence of children in households was found to be a constraining factor in shopping offline, and such families seek convenience in shopping (Rohm and Swaminathan 2004), avoid socialising during shopping (Cox, Cox, and Anderson 2005) and are more likely to make in-house purchases (Hand et al. 2009; Morganosky and Cude 2000); the young energetic families without children may like to enjoy the store atmosphere than engaging in in-home shopping due to the availability of excessive free time. Thus, among early LC stages, families with children – FN(I), FN(PC), and FN(SC) – will have stronger BI to shop online. Moreover, due to the presence of children in households, they tend to purchase many product categories and buy online more frequently than families without children – NM and EP.

The perceived risk in e-shopping is generally higher among older e-shoppers than among younger ones (Lian and Yen 2014). Hence, later LC stages will have

a weaker BI to shop online than early ones. However, technology transfer from younger to older generations has been found to occur during the adoption of other technologies (Kuoppamäki, Taipale, and Wilska 2017). Hence, among later LC stages, families with children may have stronger intention to shop online than families without children. They may also plan to buy more products and try different products due to time constraints. Older families with no children at home are also found to use various technologies (Frey, Xu, and Ilic 2017; Kuoppamäki, Taipale, and Wilska 2017; Macedo 2017). On the one hand, these families are found to feel relief from strain due to reduced daily demands from children resulting in improved overall well-being (Tanis, van der Louw, and Buijzen 2017; Bouchard 2014; Erickson, Martinengo, and Hill 2010); on the other hand, they also feel loneliness after their children or partners leave (Walsh 2016). To manage this mix of emotions, women from such families would prefer offline retail outlets, as older women are found to enjoy socialising with people during shopping at offline retail stores. Thus, families with children – FN(TC), FN(AD), and FN(AI) – may have stronger BI to shop online and, because of the need for different categories of products in households, buy online more frequently than EN&SS.

6. Research methodology

6.1. The survey instrument

This study is non-experimental and quantitative in nature. The study used the pen-and-paper survey method for data collection. The survey instrument was a standardised self-report questionnaire, which comprised two sections. Section 1 focused on the demographic profile of the respondents with family-related information, including respondent's age, spouse's age, employment status, age of children, and information on children living with them or not, to determine the FLC stage to which they belong. Section 2 captured the perception towards various antecedents of e-shopping including the following TAM variables: PU (7 items), PEOU (7 items), ATT (6 items), and BI (7 items), totalling 27 scale items. The questionnaire by Lim and Ting (2012) was used in the study to measure TAM constructs. The scale items were measured on a 7-point Likert scale anchored by 'strongly disagree' to 'strongly agree' (Collis and Hussey 2013). Since the questionnaire has not been tested in the Indian scenario, a pilot study was conducted with 10 samples across all segments. Minor modifications were made in the questionnaire, which are shown in Table 5.

6.2. Participants

The sample data consisted of female respondents from metropolitan cities of India, owing to the high internet diffusion rate (ASSOCHAM India 2017). Respondents who have shopped online (online bookings such as for tickets, hotels, and movies not included) at least once in the past six months participated in the survey (Chiu et al. 2009). Care was taken to ensure the respondent remained in that particular FLC stage for the past six months, to ensure buying behaviour of that particular stage. Only nuclear families were included and not the extended/joint family system, since the nuclear family system is predominant in the metropolitan cities of India (*India Today*, March 24, 2015). As time and work pressures are higher in nuclear families than in extended/joint families, which would result in a more sensitive population for the study.

6.3. Data collection procedure

Data collection commenced in Chennai and was then extended to four cities, i.e. Bangalore, Hyderabad, Mumbai, and Pune, in order to have a wider variety of population. The study sought 100 filled questionnaires from each FLC stage. We met respondents directly at home/apartments and requested them to participate in the survey. Gifts worth Rs. 30 were announced for all participants. Additionally, a lucky prize worth Rs. 1000 was announced for 3 participants to improve the participation rate (Chou, Chen, and Lin 2015). Data were collected over a period of five months (April 2016 to August 2016). Respondents were given the time of three days to complete the questionnaire.

Two rounds of data collection were carried out. The first round was based on the convenience sampling method, which resulted in 584 respondents. As 75% of e-commerce users were 25–35 years of age (ASSOCHAM India 2016), 71% of the respondents were in early LC stages (414). Hence, in order to balance the samples across all FLC stages, we then conducted convenience and snowball sampling with the help of the

respondents participating in the survey. This resulted in 493 respondents, out of which 54% belonged to later LC stages (266). A total of 1077 samples were collected: 642 were early LC stage and 435 were later LC stage. After excluding incomplete questionnaires and treating responses with a few missing values using the AMOS maximum likelihood method, 919 usable responses were obtained. When split based on FLC stages, there were 118 NM, 90 EP, 112 FN(I), 112 FN(PC), 114 FN(SC), 97 FN(TC), 96 FN(AD), 95 FN(AI), 48 working mothers with no children, and 37 retired mothers with no children. Due to the small sample size, older mothers with no children were collated into one group, the EN&SS, as titled by Wells and Gubar (1966); thus, there were 85 EN&SS. This sample size is greater than that used in previous studies (Allen and Finkelstein 2014). We then proceeded with data analysis.

6.4. Sample demographics

The respondents were aged between 22 and 64 years in 2016. The average age of the respondents was around 43 years. In terms of employment status, 54% of the women were employed full time, 26% were part-time or work-from-home employees, and 20% were housewives. By education, 62% of the women had completed their post-graduation, 24% had an undergraduate degree, and the remaining 14% had completed higher secondary education. This is in line with the observation of previous studies that women e-shoppers are employed and educated (Sondhi 2015; Antonio and Tuffley 2014; Al-Maghrabi and Dennis 2010).

From Table 3 and Figure 2, it can be observed that the product categories bought online differed among FLC stages: there were differences in favourite sites, products purchased, and shopping frequency. Early LC stages shop online more frequently than later LC stages. No one across the early FLC stages purchased ‘rarely’, and no one purchased more than once a month in later FLC stages. Product categories such as electronics, clothing and apparel accessories, books, and accessories

Table 3. E-shopping behaviour across various FLC stages.

Date of Shopping behaviour across various LC stages									
	Early LC stages					Later LC stages			
Most favourite OSS	Amazon – 37%					Flipkart – 48%			
	Flipkart – 33%					Amazon – 24%			
	Snapdeal – 15%, Shopclues – 15%					Snapdeal – 14%, Homeshop – 14%			
Other preferred OSSs	Firstcry, babyoye, Jabong, Yepme, e-bay, voonik, limeroad					Pepperfry, Jabong, e-bay			
On an average, how often did you shop online in the past 6 months?									
Frequency	NM	EP	FN(I)	FN(PC)	FN(SC)	FN(TC)	FN(AD)	FN(AI)	EN&SS
More than once a month	10	8	17	12	8	Nil	Nil	Nil	Nil
Once a month	37	35	56	47	15	23	18	25	18
Once in 2 months	35	38	15	28	32	28	42	49	42
Once in 3 months	18	19	12	13	25	28	27	19	22
Rarely	Nil	Nil	Nil	Nil	20	21	13	7	18

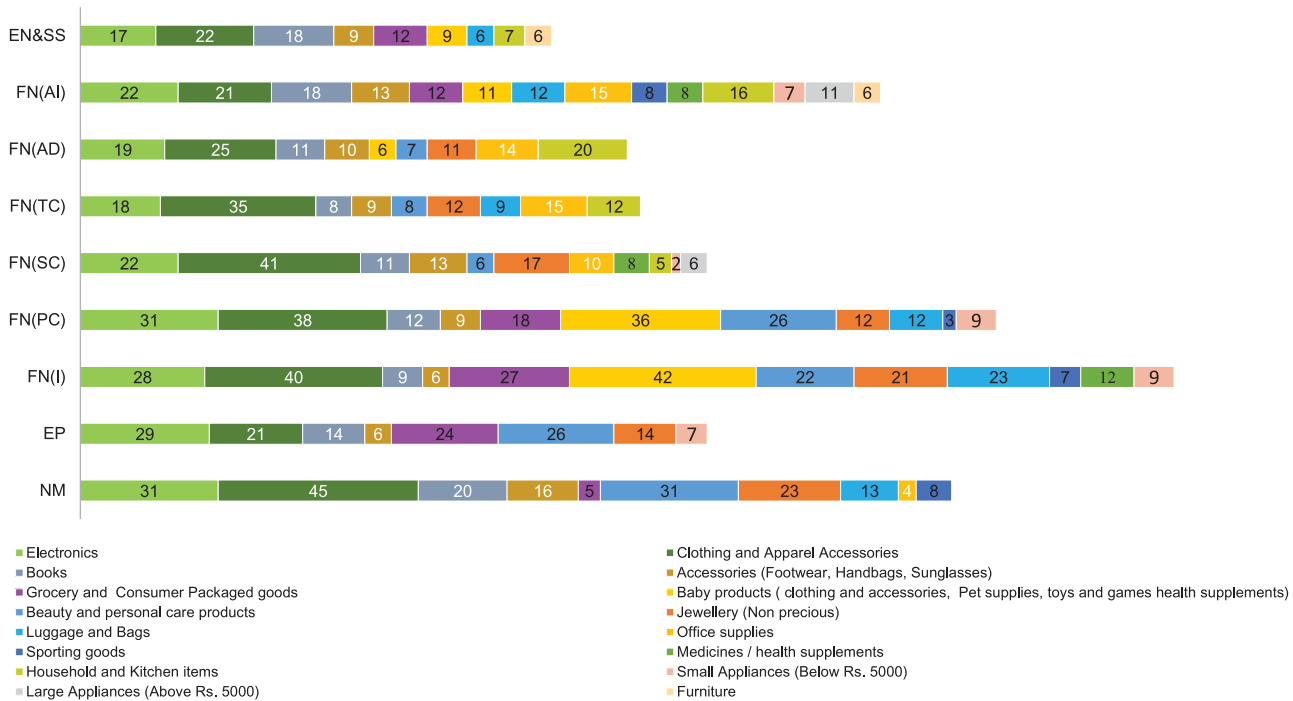


Figure 2. Product categories shopped online in the past six months (in %).

(footwear, handbags, sunglasses) are popular across all FLC stages, similar to results observed by Assocham 2016 (Assocham India 2017). Some products that are popular among early LC stages are not so popular among later LC stages and vice versa. For instance, grocery and consumer packaged goods are popular among early LC stages, while later LC stages buy household and kitchen items. Most FLC stages did not show interest in buying product categories such as large appliances, furniture, medicines, and sporting goods online. This is in line with the Ernst and Young 2015 report suggesting that Indian consumers are found to buy only low-ticket items online. In early LC stages, most shoppers prefer to buy from Amazon, while Flipkart is popular among later LC stages. This may be due to the brand loyalty possessed by older segments towards Flipkart, the first OSSs in India.

6.5. Data analysis

A four-step approach is adopted to analyse the collected data.

1. Preliminary tests: in order to check the reliability and validity of data collected, Smart PLS 3.0. software package was used, as it is a widely accepted variance-based, descriptive, and prediction-oriented approach in structural equation modelling (Ziggers and Henseler 2016; Hair et al. 2012). In order to check if the data are free from common method

variance, Harman's (1976) single factor test was adopted, which was also conducted with the help of SPSS 21.0.

2. Structural model: in order to find the relationship among the TAM variables across FLC groups, partial least square structural equation modelling (PLS-SEM) was used.

The reasons for choosing this approach are:

- (i) It is best suited for studies with small sample sizes (Hair et al. 2016),
 - (ii) It is an appropriate method for addressing multiple relationships simultaneously (Hair, Ringle, and Sarstedt 2011; Henseler, Ringle, and Sinkovics 2009),
 - (iii) PLS estimates may represent good proxies of the covariance-based structural equation modelling (CB-SEM) results if the CB-SEM premises are violated (Henseler, Ringle, and Sinkovics 2009; Fornell and Bookstein 1982).
3. Multi-group analysis (MGA): In order to understand if there are significant group differences across FLC stages in the relationship of TAM variables, PLS-MGA was adopted as it is the simplest method with greater accuracy (Afthanorhan, Nazim, and Ahmad 2014).
 4. Group differences among individual items: to further test the significant differences among individual items of the TAM variables across FLC stages, one-way MANOVA was employed using SPSS 21.0.

7. Results

7.1. Preliminary tests

In order to check the appropriateness of data collected, data were checked for mean, standard deviation, normality, and reliability (Hair et al. 2010). As shown in Table 4, the skewness and kurtosis values were within the range of ± 2.00 , which confirmed that the data are normally distributed (Garson 2008). The mean score for every item was above the midpoint (i.e. 4), indicating the affirmative response to the constructs in the study. The standard deviation values were not considerably different. To assess the measurement model, data were checked for reliability and validity (Hair et al. 2010; Yoo and Alavi 2001). The reliability test results showed that all the CR values are above 0.9 (Table 4), which is higher than the threshold value (0.7) suggesting high internal consistency (Hair, Ringle, and Sarstedt 2011). Then, the data were tested for its validity. Convergent validity of the constructs was tested with two values (Fornell and Larcker 1981): (i) factor loadings and (ii) average variance extracted (AVE). Factor analysis results showed that all items on the constructs showed high loadings (above 0.6), confirming the construct validity (refer to Table 4). Similarly, all the AVEs ranged from 0.66 to 0.77 (refer to Table 4), which exceeded the recommended level of 0.50 (MacKenzie, Podsakoff, and Podsakoff 2011). Thus, both the conditions were satisfied for convergent validity. Following this, in order to check the discriminant validity of data, shared variances between

factors were compared with the AVE of the individual factors (Chin 1998; Fornell and Larcker 1981). The result showed that the AVE of the individual factors was higher than the shared variances between the factors, confirming discriminant validity (refer to Table 5). Thus, the measurement model demonstrated adequate reliability, convergent validity, and discriminant validity. Furthermore, common method bias test was conducted with Harman's one-factor test (Podsakoff et al. 2003). The variance observed by a single factor was 49%, which is lesser than the threshold suggested by Harman (1976). Thus, data are free of common method bias issues.

7.2. SEM testing and MGA

Once the data satisfied preliminary tests, the structural model was tested to confirm the causal relationships among the constructs of the study. This study proceeded to test the path significances using a bias-corrected bootstrapping re-sampling technique (5000 samples, with 95% bias-corrected confidence intervals, no sign change option), in order to obtain stable standard errors and low differences between the entire sample estimates and means of subsamples (Hair et al. 2016; Politis and Romano 1992).

7.2.1. SEM results – overall model

Figure 3 shows the structural paths of the overall model. In PLS, the R^2 value is used as an indicator of the overall

Table 4. Reliability and validity tests.

Items	Descriptive statistics				CR	AVE	Factor loadings
	Mean	SD	Skewness	Kurtosis			
PU 1	5.148	1.576	-1.188	0.660	0.932	0.663	0.781
PU 2	5.158	1.525	-1.051	0.484			0.781
PU 3	5.003	1.648	-0.913	-0.022			0.782
PU 4	5.161	1.454	-1.002	0.480			0.809
PU 5	5.012	1.595	-1.016	0.206			0.873
PU 6	4.856	1.578	-0.978	0.06			0.853
PU 7	5.122	1.578	-1.005	0.355			0.816
PEOU 1	5.197	1.416	-1.061	1.045	0.953	0.745	0.877
PEOU 2	5.137	1.478	-1.006	0.816			0.855
PEOU 3	5.146	1.475	-0.988	0.818			0.831
PEOU 4	5.089	1.461	-0.950	0.809			0.868
PEOU 5	5.116	1.477	-1.070	1.033			0.875
PEOU 6	5.063	1.462	-1.005	0.877			0.885
PEOU 7	5.207	1.442	-0.997	0.922			0.851
ATT 1	5.033	1.594	-0.967	0.078	0.948	0.754	0.846
ATT 2	4.954	1.671	-0.917	-0.141			0.868
ATT 3	4.853	1.731	-0.774	-0.460			0.780
ATT 4	4.978	1.711	-0.92	-0.219			0.913
ATT 5	4.765	1.642	-0.827	-0.350			0.903
ATT 6	4.923	1.708	-0.949	-0.224			0.893
BI 1	5.034	1.685	-1.002	0.106	0.959	0.770	0.904
BI 2	5.015	1.729	-0.95	-0.108			0.907
BI 3	5.027	1.682	-1.02	0.177			0.873
BI 4	4.901	1.712	-0.913	-0.140			0.846
BI 5	4.917	1.736	-0.906	-0.201			0.874
BI 6	5.065	1.666	-0.981	0.158			0.868
BI 7	4.906	1.747	-0.936	-0.072			0.868

Table 5. Discriminant validity. Correlation among constructs and the square root of the AVE.

	PU	PEOU	ATT	BI
PU	0.814			
PEOU	0.617	0.863		
ATT	0.627	0.671	0.869	
BI	0.686	0.575	0.737	0.877

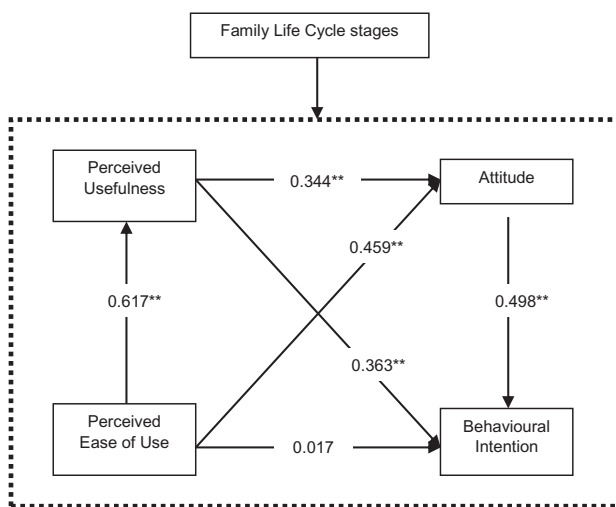
Note: Diagonal elements (in bold) represent the square root of the AVE; off-diagonal elements are the shared variance.

predictive power of the model. The multiple R^2 values were 38.0 for PEOU on PU (38%), 52.3 for PU and PEOU on ATT (52%), and 62.6 for PU, PEOU, and ATT on BI (62%), which exceed the recommended 10% benchmark (McKenna, Tuunanen, and Gardner 2013; Falk and Miller 1992). The path coefficients (β values) indicate the strengths of the relationships between the constructs. The current work accepts t -values greater than or equal to 1.96 and p -values based on a two-tail test with a significance level of .05 (Faqih 2013).

All the relationships posited by TAM were found to have significant relationships (Figure 3), which is similar to the observations in previous e-shopping studies (PEOU–PU – Faqih 2016; PU and PEOU on ATT – Ashraf, Thongpapanl, and Auh 2014; Khare and Sadachar 2014; Martínez-López et al. 2014; Panda and Narayan Swar 2013; Khare and Rakesh 2011; ATT on BI – Budzawska-Drzewiecka 2015; Ashraf, Thongpapanl, and Auh 2014; Moshrefjavadi et al. 2012; Eri, Islam, and Daud 2011; Khare and Rakesh 2011; PU on BI – Sreeram, Kesharwani, and Desai 2017; Celik 2016; Amin, Rezaei, and Tavana 2015; Lian and Yen 2014; Martínez-López et al. 2014; Ho and Chen 2014; Gong, Stump, and Maddox 2013; Panda and Narayan Swar

2013; Thakur and Srivastava 2013; Khare, Anshuman, and Singh 2012; Al-Maghrabi, Dennis, and Vaux Halliday 2011; Delafrooz, Paim, and Khatibi 2011; Hernández, Jiménez, and José Martín 2011). PEOU had a stronger impact on ATT in comparison to PU, as observed by Ashraf, Thongpapanl, and Auh (2014), who found that PEOU is more important than PU in motivating users to accept a technology in the early adoption stage. Since e-shopping is in the nascent stage in India and many e-shoppers are in the early stages of adoption, the role of PEOU is crucial.

The additional relationship tested by this study was the direct link between PEOU and BI, which was not supported (Sreeram, Kesharwani, and Desai 2017; Celik 2016; Amin, Rezaei, and Tavana 2015; Lian and Yen 2014; Gong, Stump, and Maddox 2013). Thus, PU remains a more important antecedent of BI to shop online in comparison to PEOU. Several previous studies have observed PEOU as an important antecedent of BI to shop online (Faqih 2016; Tandon, Kiran, and Sah 2016; Law and Ng 2016; Abu-Shamaa and Abu-Shanab 2015; Martínez-López et al. 2014; Panda and Narayan Swar 2013). Similar results are observed in the Indian context as well (Tandon, Kiran, and Sah 2016; Srinivasan 2015; Sareen and Jain 2014; Thakur and Srivastava 2013; Bhandari and Kaushal 2013; Panda and Narayan Swar 2013). The variation in results could be due to the use of mostly young adults, particularly student samples in most studies. Hence interpreting the importance of PEOU in e-shopping technology adoption in Indian women must be undertaken diligently. Although PEOU did not have a significant direct effect on BI, its effect on PU and ATT is noteworthy. To note, the effect PEOU has on ATT is stronger than PU. Thus, Indian women would not shop online merely because e-shopping is easy to use. PU and ATT decide whether a technology needs to be adopted or not, upon which PEOU has a crucial effect. ATT plays a partial mediation effect on PU–BI relationship and full mediation effect in PEOU–BI relationship. The effect of ATT is stronger on BI than on PU, playing a dominant role in e-shopping technology adoption among Indian women.

**Figure 3.** Influence of FLC stages on TAM variables. **denotes p -value significant at .01 level.

7.2.2. Stage-wise SEM and MGA results

The relationships among the TAM constructs are observed among women of different FLC stages (refer to Table 6). The significant group differences among FLC stages are noted in Table 7. The group differences for PU–ATT, PU–BI, and PEOU–PU relationships must be checked horizontally (no colour), while the differences in relationships for PEOU–ATT, PEOU–BI, and ATT–BI must be checked vertically (grey colour) in Table A,

Table 6: Partial Least Square - Structural Equation Modeling Results (PLS-SEM).

Groups	Beta value						T Statistics					
	PEOU -> PU	PU -> ATT	PEOU -> ATT	PU -> BI	PEOU -> BI	ATT -> BI	PEOU -> PU	PU -> ATT	PEOU -> ATT	PU -> BI	PEOU-> BI	ATT -> BI
COMP	0.617**	0.344**	0.459**	0.363**	0.017	0.498**	19.128	7.379	9.468	7.116	0.320	10.086
NM	0.487**	0.028	0.547**	0.34**	0.016	0.537**	4.265	0.263	4.074	3.353	0.122	5.398
EP	0.664**	0.605**	0.339**	0.680**	-0.195	0.342*	7.680	7.042	3.327	4.814	1.734	2.448
FN(I)	0.503**	0.512**	0.366*	0.606**	-0.117	0.325**	4.334	3.362	2.313	5.428	0.920	2.660
FN(PC)	0.619**	0.217	0.668**	0.617**	0.005	0.341**	6.291	1.591	5.361	6.830	0.058	3.914
FN(SC)	0.768**	0.359**	0.364**	0.169	0.177	0.443*	14.343	3.345	2.619	1.229	0.962	2.502
FN(TC)	0.710**	0.343*	0.356*	0.046	0.247	0.527**	15.551	2.585	2.278	0.229	1.365	3.283
FN(AD)	0.645**	0.543**	0.303*	0.125	0.121	0.599**	7.151	3.597	1.969	0.587	0.734	4.200
FN(AI)	0.643**	0.381*	0.348*	0.322**	-0.264	0.764**	8.370	2.184	2.453	3.224	1.828	8.061
EN & SS	0.464**	0.237	0.567**	0.393**	0.196	0.473**	3.018	1.906	3.705	3.040	1.227	3.306

Note: **denotes p-value significant at .01 level; *denotes p-value significant at .05 level.

B, and C, respectively. Significant group differences among the groups are denoted by * in superscript.

7.2.2.1. PEOU on PU. Having tested across FLC stages with the results of PLS-SEM (Table 6) and PLS-MGA (Table 7), one can observe that among women across all the FLC stages, PEOU has a significant effect on PU (Table 6). This result is similar to the results of Venkatesh and Morris (2000), which showed that women provide more importance to PEOU of a technology for its adoption.

The effect of PEOU on PU is much stronger among women of FN(SC) and FN(TC) stages and differ significantly with NM, FN(I), and EN&SS stages (Table 7). Law, Kwok, and Ng (2016) observed that PEOU played a crucial role in influencing e-shopping attitude formation, among the middle-aged people. The results of this study show that PEOU influences PU as well, which is not tested in the previously mentioned studies. The reason for these mid-life stages giving much preference to PEOU may be because these groups are new to technology and lack adequate knowledge and guidance. Hence, only when there is usability, they can actually consider the technology useful. PEOU aspects, such as easy navigation and comparison of products and prices, may enable perceiving it to be useful in managing time and monetary crises faced by them. The effect of PEOU on PU is less in the later LC stages of EN&SS, which is surprising. This could be interpreted in such a manner that although PEOU is a necessary aspect (relationship is significant), despite being old and lacking guidance (from children), PEOU will not hinder EN&SS's assessment of PU of e-shopping.

7.2.2.2. PEOU on ATT. PEOU has a significant effect on ATT across all FLC stages. This is similar to the findings of Hernández, Jiménez, and José Martín (2011),

who found that PEOU affects ATT across all age groups. However, while they did not observe any group differences when the samples were split based on age, FLC stage split in this study shows significant differences.

Among early LC stages, the PEOU-ATT relationship is stronger among FN(PC) groups in comparison to EP, where they significantly differed. This may be due to the young mothers' time constraints due to work and family commitments (Allen and Finkelstein 2014). Among later LC stages, no significant group differences were observed. This contradicts the findings of Law and Ng (2016) who observed that PEOU affected ATT only during middle ages (41–50 years) but did not affect older ages (51–70 years). The difference could be due to very few samples from the age group above 50 years in our study. This study may reflect the behaviour of people below 50 years with respect to FLC stages. In that case, it supports the findings of Law, Kwok, and Ng (2016) who found that PEOU affects ATT among middle-aged individuals (31–60 years). A later LC-stage FN(AD) showed the least mean value which was significantly different to the early LC-stage FN(PC), while no other later LC stage shows such difference. Hence, to improve positive attitude, ease of use must be improved among FN(PC) groups, and FN(AD) is less dependent on PEOU to develop e-shopping ATT.

7.2.2.3. PU on ATT. While PEOU has a significant effect on ATT across all FLC stages, there are certain FLC stages that are independent of PU in developing ATT. The results of this study show that NM, FN(PC), and EN&SS groups depend more on PEOU of e-shopping than PU in developing an attitude. This contradicts the findings of Hernández, Jiménez, and José Martín (2011) who found that PU affects ATT across all age groups.

Table 7: Partial least square – multi-group analysis results (PLS-MGA).

A. PEOU → ATT (grey colour)										
PU → ATT (no colour)		NM	EP	FN(I)	FN(PC)	FN(SC)	FN(TC)	FN(AD)	FN(AI)	EN & SS
	NM	0	0.208	0.181	0.121	0.183	0.191	0.244	0.198	0.021
	EP	0.577*	0	0.027	0.329*	0.025	0.017	0.036	0.01	0.229
	FN(I)	0.484*	0.093	0	0.302	0.002	0.01	0.064	0.018	0.201
	FN(PC)	0.188	0.389*	0.295	0	0.304	0.312	0.365*	0.32	0.1
	FN(SC)	0.331*	0.246*	0.152	0.143	0	0.009	0.062	0.016	0.203
	FN(TC)	0.315*	0.262*	0.169	0.127	0.016	0	0.053	0.007	0.212
	FN(AD)	0.515*	0.063	0.031	0.326	0.183	0.199	0	0.046	0.265
	FN(AI)	0.353*	0.225	0.131	0.164	0.021	0.037	0.162	0	0.219
	EN & SS	0.208	0.369*	0.275	0.02	0.123	0.107	0.306	0.144	0
B. PEOU → BI (grey colour)										
PU → BI (no colour)		NM	EP	FN(I)	FN(PC)	FN(SC)	FN(TC)	FN(AD)	FN(AI)	EN & SS
	NM	0	0.211	0.133	0.011	0.161	0.231	0.105	0.28	0.18
	EP	0.340*	0	0.078	0.2	0.372	0.441*	0.315	0.069	0.391*
	FN(I)	0.267*	0.073	0	0.122	0.294	0.364*	0.238	0.147	0.313
	FN(PC)	0.277*	0.063	0.01	0	0.172	0.242	0.116	0.269	0.191
	FN(SC)	0.171	0.511*	0.438*	0.448*	0	0.07	0.056	0.441	0.019
	FN(TC)	0.294	0.634*	0.561*	0.571*	0.123	0	0.126	0.51*	0.051
	FN(AD)	0.214	0.555*	0.481*	0.492*	0.043	0.079	0	0.384*	0.075
	FN(AI)	0.017	0.358*	0.284*	0.294*	0.154	0.277	0.197	0	0.46*
	EN & SS	0.053	0.287	0.214	0.224	0.224	0.347	0.267	0.07	0
C. ATT → BI (grey colour)										
PEOU → PU (no colour)		NM	EP	FN(I)	FN(PC)	FN(SC)	FN(TC)	FN(AD)	FN(AI)	EN & SS
	NM	0	0.195	0.211	0.196	0.093	0.01	0.063	0.228	0.063
	EP	0.177	0	0.017	0.001	0.101	0.185	0.258	0.422*	0.132
	FN(I)	0.016	0.161	0	0.016	0.118	0.202	0.274	0.439*	0.148
	FN(PC)	0.132	0.046	0.115	0	0.103	0.186	0.259	0.423*	0.133
	FN(SC)	0.281*	0.104	0.265*	0.149	0	0.084	0.156	0.321	0.03
	FN(TC)	0.223*	0.046	0.207*	0.091	0.058	0	0.073	0.237	0.053
	FN(AD)	0.158	0.019	0.142	0.027	0.123	0.065	0	0.165	0.126
	FN(AI)	0.156	0.021	0.14	0.025	0.125	0.066	0.002	0	0.291
	EN & SS	0.023	0.2	0.039	0.154	0.304*	0.245	0.181	0.179	0

Note: The group differences for PU-ATT, PU-BI, and PEOU-PU relationships must be checked horizontally (No colour), while the differences in relationships for PEOU-ATT, PEOU-BI, and ATT-BI must be checked vertically (Grey colour) in Table A, B, and C, respectively. Significant group differences among the groups are denoted by * in superscript.

Among early LC stages, significant differences could be observed between EP-NM cohorts and [FN(I),FN(SC)]-FN(PC) groups. Among later LC stages, no significant difference is observed, which is consistent with the findings of Law and Ng (2016), who also did not observe significant differences between middle and old age groups. Khare, Anshuman, and Singh (2012) also observed similar results in India. However, this study shows that EN&SS is a group that does not have significant PU-ATT relationship. This group differs significantly in the NM stage, while other later LC stages do not differ. This is marginally different to the findings of both Law and Ng (2016) and Law, Kwok, and Ng (2016), who found that among older people PU affects ATT. This study finds that the EN&SS stage is more

influenced by PEOU than PU in forming ATT towards e-shopping.

7.2.2.4. ATT on BI. ATT has a significant effect on e-shopping BI across all FLC stages. Across most FLC stages, ATT remains dominant in affecting BI, with the exceptions of EP, FN(I), and FN(PC) stages, where PU dominates in affecting BI. Particularly during the middle LC stages of FN(SC), FN(TC), and FN(AD), ATT played a full mediation effect, where neither PU nor PEOU had a direct relationship with BI as observed by Law and Ng (2016).

No group differences were observed among early and later LC stages. However, the effect of ATT on BI is much stronger among FN(AI) stages, where this

group alone differed with early LC stages EP, FN(I), and FN(PC).

7.2.2.5. PU on BI. Among the FLC groups of FN(SC), FN(TC), and FN(AD), PU did not have a direct effect on BI. However, the effect shown by age-based studies were contradictory – while Law and Ng (2016) observed that PU did not affect BI directly among middle-aged and older shoppers, Lian and Yen (2014) and Hernández, Jiménez, and José Martín (2011) observed older adults to have PU–BI relationship equally as the young. This FLC based study clarifies that among middle LC stages (FN(SC), FN(TC), and FN(AD)), PU did not affect BI (Law and Ng 2016). As women reach the FN(AI) stage, the role of PU again gains momentum with a significant direct effect on BI.

Among the early LC stages, NM and FN(SC) stages showed a weak PU–BI relationship that they differed significantly with EP, FN(I), and FN(PC) stages. Among the later LC stages, no significant difference could be observed. EN&SS stage showed an equally strong influence of PU on BI to shop online, similar to early LC stages (Lian and Yen 2014; Hernández, Jiménez, and José Martín 2011), but other later LC stages significantly differed. During the last stages of women (FN(AI) and EN&SS), PU affected BI both directly and indirectly (through ATT). The ability to develop a positive attitude towards e-shopping may be less among these older women as they are accustomed to traditional shopping formats. Hence, these groups could be attracted towards e-shopping by enhancing PU.

7.2.2.6. PEOU on BI. PEOU did not have a direct influence on BI of women to shop online across all FLC stages. This confirms our findings for the overall effect (Section 7.2.1). Also, this supports previous studies (Sreeram, Kesharwani, and Desai 2017; Lian and Yen 2014). However, it contradicts the findings of Law and Ng (2016), who found that PEOU directly affects BI among middle-aged e-shoppers. The difference in the results could be due to the difference in samples. This study concentrates on Indian women who are known for their value consciousness. Hence, merely owing to a technology being easy to use, one can adopt technologies for entertainment, but not for e-shopping that involves money; most people buy online to save money. Thus, among middle-aged Indian women, the BI to continue shopping online is dependent on ATT towards e-shopping, which is influenced by PU and PEOU. Overall, PU or ATT decide whether a technology needs to be adopted or not in all the FLC stages of women. FN(AI) showed the weakest PEOU–BI relationship, where it differed between all the later LC stages.

7.2.3. MANOVA results

To understand the item-wise difference across all FLC stages, post-hoc least significant difference (LSD) test was conducted, with multiple comparison tests to segregate the exact difference between category means that were significantly different (Allen and Finkelstein 2014). Based on the F and p -values, the significant differences between the groups were determined. The probability level was accepted as the significance was between 0.01 and 0.10. Overall, considering the MANOVA result (Table 8), the following inferences could be made. The F value across all the items is found to be significant, which means that there are significant group differences among the FLC stages studied. One item which did not show a significant F value is PU4, which dealt with the best deals. This is similar to the results of previous studies conducted in India that found Indian e-shoppers to be discount driven (Gupta and Arora 2017; Sarkar and Khare 2017; Thamizhvanan and Xavier 2013).

The significant difference between the groups is denoted by letters in the superscript for different groups. The groups significantly different to NM are denoted with ‘a’ superscript, which means that these groups are significantly different from NM at $p = .05$ level. Similarly, groups EP, FN(I), FN(PC), FN(SC), FN(TC), FN(AD), FN(AI), and EN&SS are denoted with superscripts b, c, d, e, f, g, h, and i, respectively. For further clarity, the corresponding letter denoting the group is given in brackets near the group title.

7.2.3.1. Newly married [NM]. NM women perceived e-shopping to be equally useful, though the study showed marginally lesser mean values in comparison to families with young children (no significant difference observed across items). This could be attributed to the fact that young households spend more time at work than at home (Dotsey, Li, and Yang 2014). The corporate world’s hectic schedule may urge this LC stage to perceive E-shopping as a means to save time, money, and making better purchase decisions. As expected, these groups, in comparison to any other group, perceived e-shopping to be easier, showed a positive ATT towards e-shopping and a strong BI to shop online. This is not surprising as this stage mainly consists of Gen Y Millennials, the first high-technology generation (Lissitsa and Kol 2016; Norum 2003) who are perceived to be sophisticated in terms of shopping (Jackson, Stoel, and Brantley 2011). Thus, this LC stage does not look for any special reason to adopt e-shopping technology, but adopts it as an end in itself.

7.2.3.2. Expecting parents [EP]. EP, half way through the family expansion stage, also perceived e-shopping to be

Table 8: MANOVA table explaining the group differences based on the FLC stages.

Item No.	Items	NM (a) (n=105)	EP (b) (n=106)	FN(I) (c) (n=106)	FN(PC) (d) (n=91)	FN(SC) (e) (n = 92)	FN(TC) (f) (n = 98)	FN(AD) (g) (n=96)	FN(AI) (h) (n=98)	EN&SS (i) (n=85)	F value
PU 1	I am able to accomplish my shopping goals more quickly when I shop online	5.27 ^{af}	5.38 ^{bfi}	5.57 ^{cefg}	5.32 ^d	5.06 ^{ce}	4.80 ^{ab}	4.96 ^{cg}	4.98 ^{ch}	4.86 ^{bcdi}	2.841*
PU 2	I am able to improve my shopping performance when I shop online (e.g. save time or money)	5.19 ^{ai}	5.17 ^{bi}	5.57 ^{cefg}	5.54 ^{defghi}	5.11 ^{cdei}	4.93 ^{cd}	5.02 ^{cdg}	5.07 ^{cdh}	4.64 ^{abcdei}	3.649**
PU 3	I am able to increase my shopping productivity when I shop online (e.g. make purchase decisions or find product information within the shortest time frame)	5.32 ^{aefgi}	5.24 ^{bfgi}	5.21 ^{cf}	5.48 ^{defgi}	4.90 ^{adei}	4.55 ^{abcd}	4.61 ^{abcdg}	5.15 ^{fghi}	4.34 ^{abcdehi}	5.874**
PU 4	I am able to increase my shopping effectiveness when I shop online (e.g. get the best deal or find the most information about a product).	5.36 ^{agi}	5.27 ^{bi}	5.21	5.57 ^{defghi}	5.07 ^{de}	5.03 ^{df}	4.95 ^{adg}	5.06 ^{dh}	4.80 ^{abdi}	2.604
PU 5	I find the online shopping sites (OSSs) useful in aiding my purchase decisions	5.35 ^{aefgi}	5.26 ^{bfgi}	5.31 ^{cefgi}	5.39 ^{defgi}	4.90 ^{acdef}	4.42 ^{abcde}	4.71 ^{abcdg}	5.04 ^{fhi}	4.52 ^{abcdhi}	5.604**
PU 6	Shopping online improves my purchase decisions	5.26 ^{aefgi}	5.17 ^{befgi}	5.18 ^{cefgi}	5.24 ^{defgi}	4.69 ^{abcde}	4.23 ^{abcde}	4.49 ^{abcdg}	4.92 ^{fhi}	4.32 ^{abcdhi}	7.172**
PU 7	Shopping from OSS(s) makes it easier for me to satisfy my needs	5.28 ^{afi}	5.33 ^{bfi}	5.46 ^{cefgi}	5.46 ^{defgi}	5.03 ^{cde}	4.70 ^{abcd}	4.92 ^{cdg}	5.13 ^{hi}	4.62 ^{abcdhi}	3.904**
PEOU 1	I find OSS(s) easy to use	5.72 ^{aefghi}	5.78 ^{befghi}	5.59 ^{cefg}	5.49 ^{dfghi}	5.16 ^{abcegi}	4.82 ^{abcd}	4.69 ^{abcdeg}	4.85 ^{abcdhi}	4.39 ^{abcdehi}	13.473**
PEOU 2	I find it easy learning to use OSS(s)	5.75 ^{aefghi}	5.63 ^{befghi}	5.39 ^{cfghi}	5.43 ^{dfgi}	5.14 ^{abefgi}	4.68 ^{abcde}	4.60 ^{abcdeg}	4.99 ^{abcdhi}	4.32 ^{abcdehi}	11.924**
PEOU 3	I find it easy to use OSS(s) to find what I want	5.68 ^{aefghi}	5.67 ^{befghi}	5.36 ^{cfghi}	5.46 ^{defghi}	5.05 ^{abdei}	4.78 ^{abcd}	4.81 ^{abcdgi}	4.89 ^{abcdhi}	4.36 ^{abcdeghi}	9.608**
PEOU 4	I find it easy to become skilful at using OSS(s)	5.68 ^{aefghi}	5.67 ^{befghi}	5.44 ^{cefg}	5.39 ^{defghi}	5.01 ^{abcdegi}	4.77 ^{abcd}	4.63 ^{abcdeg}	4.65 ^{abcdh}	4.28 ^{abcde}	12.877**
PEOU 5	I find it easier to compare products when shopping from the OSS(s)	5.65 ^{aefghi}	5.52 ^{befghi}	5.51 ^{cefg}	5.47 ^{defghi}	5.07 ^{abcdegi}	4.70 ^{abcd}	4.60 ^{abcdeg}	4.80 ^{abcdh}	4.42 ^{abcde}	10.727**
PEOU 6	I feel that OSS(s) are flexible to interact with	5.68 ^{acefghi}	5.38 ^{bfgi}	5.28 ^{acfg}	5.45 ^{defghi}	5.03 ^{adei}	4.68 ^{abcd}	4.71 ^{abcdg}	4.72 ^{abcdh}	4.36 ^{abcde}	9.707**
PEOU 7	I am able to browse OSS(s) with ease	5.80 ^{aefghi}	5.63 ^{befghi}	5.52 ^{cefg}	5.48 ^{dfghi}	5.13 ^{abcegi}	4.93 ^{abcd}	4.65 ^{abcdeg}	4.94 ^{abcdhi}	4.52 ^{abcdehi}	10.569**
ATT 1	I am comfortable to shop from OSS(s)	5.28 ^{aefi}	5.48 ^{befghi}	5.42 ^{cefg}	5.35 ^{defgi}	4.77 ^{abcde}	4.42 ^{abcd}	4.88 ^{bcd}	4.95 ^{bcdh}	4.61 ^{abcdi}	5.889**
ATT 2	I like to purchase what I need from OSS(s)	5.27 ^{aefi}	5.24 ^{befi}	5.23 ^{cefi}	5.40 ^{defgi}	4.51 ^{abcde}	4.38 ^{abcd}	4.84 ^{dg}	5.05 ^{efhi}	4.52 ^{abcdhi}	5.740**
ATT 3	I like to seek for product information from OSS(s)	5.31 ^{aefgi}	5.18 ^{befgi}	5.06 ^{cfgi}	5.44 ^{defghi}	4.69 ^{abcde}	4.15 ^{abcde}	4.40 ^{abcdg}	4.97 ^{dfghi}	4.22 ^{abcdhi}	8.090**
ATT 4	I feel shopping online is a good idea	5.27 ^{aefgi}	5.37 ^{befghi}	5.35 ^{cefg}	5.35 ^{defghi}	4.69 ^{abcde}	4.39 ^{abcd}	4.73 ^{abcdg}	4.86 ^{bcdh}	4.61 ^{abcdi}	5.217**
ATT 5	I feel shopping online is a wise choice	5.15 ^{aefgi}	5.24 ^{befghi}	5.01 ^{cefi}	5.24 ^{defghi}	4.41 ^{abcde}	3.99 ^{abcd}	4.64 ^{abdfg}	4.73 ^{bdfh}	4.32 ^{abcdi}	7.937**
ATT 6	I hold a positive evaluation of shopping online	5.16 ^{aefi}	5.39 ^{befgi}	5.14 ^{cefi}	5.29 ^{defgi}	4.60 ^{abcde}	4.32 ^{abcd}	4.79 ^{bdg}	5.00 ^{bfi}	4.51 ^{abcdhi}	4.943**
BI 1	It is likely that I will continue to purchase products from online retailers in the future	5.31 ^{aefgi}	5.47 ^{befgi}	5.42 ^{cefg}	5.42 ^{defgi}	4.82 ^{abcde}	4.45 ^{abcd}	4.69 ^{abcdg}	4.98 ^{bfi}	4.58 ^{abcdi}	5.780**
BI 2	I intend to continue purchase products from the Internet in the future	5.26 ^{aefgi}	5.39 ^{befgi}	5.36 ^{cefg}	5.38 ^{defgi}	4.78 ^{abcde}	4.41 ^{abcd}	4.80 ^{abcdg}	4.95 ^{bfi}	4.67 ^{abcdi}	4.469**
BI 3	I would likely visit an online shopping site to shop for my needs	5.25 ^{aefgi}	5.39 ^{befgi}	5.43 ^{cefg}	5.40 ^{defgi}	4.80 ^{abcde}	4.41 ^{abcd}	4.77 ^{abcdg}	4.99 ^{bfi}	4.65 ^{abcdi}	5.167**
BI 4	I plan to do more of my shopping via online shopping sites	5.29 ^{aefgi}	5.40 ^{befghi}	5.43 ^{cefg}	5.16 ^{defgi}	4.56 ^{abcde}	4.16 ^{abcd}	4.70 ^{abcdg}	4.92 ^{bcdhi}	4.31 ^{abcdhi}	8.077**
BI 5	When I need to buy a particular product, I would search for an online retailer which has the product	5.23 ^{aefgi}	5.36 ^{befgi}	5.32 ^{cefg}	5.35 ^{defgi}	4.50 ^{abcde}	4.09 ^{abcd}	4.69 ^{abcdg}	4.94 ^{fi}	4.66 ^{abcd}	7.178**
BI 6	There is a substantial chance that I would purchase the same product from an online retailer	5.43 ^{aefghi}	5.53 ^{befghi}	5.50 ^{cefg}	5.46 ^{defghi}	4.65 ^{abcde}	4.47 ^{abcd}	4.73 ^{abcdg}	4.96 ^{abcd}	4.69 ^{abcdi}	7.204**
BI 7	There is a substantial chance that I would purchase different products from an online retailer	5.29 ^{aefghi}	5.49 ^{bdefghi}	5.41 ^{cefg}	4.98 ^{bdfi}	4.78 ^{abcefi}	4.29 ^{abcd}	4.73 ^{abcegi}	4.78 ^{abcfhi}	4.21 ^{abcdeghi}	6.941**

Notes: PU, perceived usefulness; PEOU, perceived ease of use; ATT, attitude; BI, behavioural intention. The significant difference between the groups is denoted by alphabets in the superscript for different groups. The groups significantly different from NM are denoted with 'a' superscript, which means the groups which carry superscript 'a' are significantly different from NM at $p=0.05$ level. Similarly groups EP, FN (I), FN (PC), FN (SC), FN(TC), FN(AD), FN(AI) and EN&SS are shown with superscripts b,c,d,e,f,g,h and i respectively. For further clarity, the corresponding alphabet denoting the group is given in bracket near the group title.

(F value with 0.01 significance is shown with ** in superscript, with .05 significance is denoted with * in superscript and values with no superscript differed at .1 significance level). All items were measured on verbally anchored 7-point Likert scale, with a 7 representing strongly agree, 4 representing neutral, 1 representing strongly disagree.

Summary of MANOVA test								
Test name	Value	F	Hypothesis df	Error df	Sig. of F	Partial eta squared	Noncent. parameter	Observed power ^b
Pillai's Trace	.475	2.081	216.000	7128.000	.000	.059	449.463	1.000
Wilks' Lambda	.605	2.130	216.000	6817.916	.000	.061	441.941	1.000
Hotelling's Trace	.534	2.179	216.000	7058.000	.000	.063	470.729	1.000
Roy's Largest Root	.223	7.351	27.000	891.000	.000	.182	198.488	1.000

^aThe statistic is an upper bound on F that yields a lower bound on the significance level.

^bComputed using $\alpha = .05$.

useful, equalling families with children. Their PEOU was higher than families with children, but no significant difference is observed. Contrary to expectations, this FLC stage without children, in comparison to any other group (including early LC stages with children), possessed a positive attitude towards e-shopping, were much comfortable to shop from OSSs, and considered it to be a better choice. This group had strong e-shopping continuance behaviour than any other group (showing the highest mean values across most items). Thus, it can be understood that even before the birth of a child, women start preparing for their motherhood (Jiang et al. (2015)). It must be noted that this group starts buying groceries and consumer packaged goods online, which is not observed in the NM stage. As these are routine purchases and there is no need to look for varieties, these segments may try to avail the comfort of e-shopping. This group was found to buy very few (10) product categories online and most of their purchases were basic monthly necessities (such as grocery); other expenses, such as clothing, apparel accessories, and footwear, show a decline. Hence, this group behaved more similar to FN(I) in comparison to the NM stage in e-shopping intentions. However, their frequency of shopping online is lesser than families with children.

7.2.3.3. Full nest (infants) [FN(I)]. This stage perceived e-shopping to be (more) useful in comparison to families with no children/older children. Women in this stage are able to manage their time pressures with e-shopping as saving time and shopping quickly are predominant benefits reaped from OSSs by these groups. While making use of other usefulness aspects, contradicting our expectation, this group does not consider e-shopping to improve their shopping effectiveness (low mean value), showing insignificant difference with even later LC stages. This could be attributed to the fact that larger percentage of FN(I) buy consumable goods, such as groceries and children's products (see Figure 2), and there is a perception of compromise on quality with discounts. Such families could conceivably be more concerned about health and safety of the family members than cost benefits. Also, as the youngest child is not yet in

school, the expenses maybe less in comparison to the following LC stages, where both the children are in school, which would increase financial burden. This is similar to the results of Sondhi (2015) who found that young mothers are not discount driven and for them quality is more important than price savings. PEOU towards e-shopping is less in comparison to NM & EP stages. This group was challenged in finding products across OSSs and also in interacting with them. This segment considers more flexible OSSs interface. A majority of this group falls into Gen Y; yet a decline could be observed. As expected, this may be a premium demand on ease of use due to time pressure. Also, this group buys new product categories, such as children's products due to the change in the LC. They may address the complexity involved in buying children's products and also groceries (as it is observed in EP stage as well). As expected, this stage enjoys comfort from OSSs. However, this stage is not interested in gathering information from OSSs like other stages. This could be due to a lack of time as these parents tend to spend a lot of time in child rearing and household activities, which places a premium on the time available for shopping and searching for information. Similarly, FN(I) found e-shopping to be a good idea but did not consider it to be a wise choice by those such as in FN(PC). Despite this, FN(I) seem to buy a variety of product categories from OSSs and their frequency of shopping online is also high. Managing physical shopping with children is challenging, the situation that may force this group to shop most of their necessities online. Similarly, it is not surprising that FN(I) intend to continue purchasing products from OSSs. This group is also interested in buying different products from OSSs similar to EP. Moreover, this group did not show considerable interest in offers from OSSs; yet they had a strong BI to shop online. Studies have shown that offers and deals are the predominant motivations to shop online. However, this stage sought several other benefits from e-shopping. Baby products are predominantly popular among FN(I), which continues in the next (FN(PC)) stage as well. This raises a question-why do people in the FN(I) group, who are ready to buy different products from OSSs, not consider it to be a wise choice similar to the FN(PC) group?

7.2.3.4. Full nest (preschool children) [FN(PC)]. Women at this stage, who also had young children, like FN(I), behaved slightly different from them. While these groups did not shop as quickly as FN(I) (lesser mean value), they made use of maximum advantages of e-shopping (deals, information, and better purchase decisions). Among all the groups, this group showed highest mean value in increasing shopping productivity and effectiveness with the help of e-shopping. This group found e-shopping useful in aiding their purchase decision, which is less observed in other LC stages (except NM). With PEOU, this group felt e-shopping was easier for product discovery and interaction than FN(I). This may be due to shopping experience that they might have gained previously when buying children's products. They also displayed a very positive attitude towards e-shopping. Among all groups, women of this stage predominantly preferred to purchase online, with high interest in gathering information from OSSs. This raises a question. Though FN(I) and FN(PC) had young children, why were the latter more interested in making use of most e-shopping benefits, while the former weren't? This could be attributed to lack of time to process information when the child is too young. As children start going to (pre)-schools, mothers likely have spare time that could be utilised for effective e-shopping. This could also be the reason why this group does not shop as quickly as the FN(I) stages. It is likely that this group may look for more beneficial shopping in all aspects (time and money). Not surprisingly, intention to shop online is high among this group like FN(I). However, surprisingly, these groups neither plan to do more of their shopping online nor like to try different products from OSSs like FN(I) or EP stages. This raises the following question – while FN(PC) seem to find e-shopping a wiser choice than FN(I), why are they not willing to try more products from OSSs?

7.2.3.5. Full nest (school children) [FN(SC)]. As women reach the FN(SC) stage, a slight decline is observed in PU of e-shopping. This group showed the least mean value among early LC stages, across all the items. Studies have shown that the work–family conflict is at its peak in this stage due to schooling demands (Erickson, Martiengo, and Hill 2010); work interference in family is the same as the FN(PC) stage (Allen and Finkelstein 2014). Moreover, these families struggle financially (Jian Xiao and Yao 2014). Yet, this stage showed notable difference with FN(I) and FN(PC). However, these women found e-shopping useful in saving time and money, similar to those in NM and EP. A prominent difference was also noted with early LC stages in 'making decisions'. This stage felt e-shopping sites neither aided nor improved

their purchase decision, like other early LC stages. This may be due to the fact that they have sufficient shopping experience, making them confident of their buying decisions. Given that the shopping medium also differs for this group, they perceived the risk of trying new products more than other groups, being considerably older (mostly above 35 years) and less tech savvy. The PEOU towards e-shopping seems to be less, compared to other early LC stages that it differed from in most items. This may be attributed to their age. They may be new to technology compared to early LC stages. Additionally, their children were not mature enough to assist them in e-shopping.

This group neither had a positive attitude towards e-shopping, nor a strong BI to shop online, like other early LC stages from which it significantly differs. Furthermore, it did not show significant difference from any of the later LC stages. Studies also have shown that online shopping has often increased the number of shopping trips, rather than decreasing it (Nomaguchi and Milkie 2003). This group, due to uncertainty involved in e-shopping, may think that, instead of wasting time in product returns and delivery, it is better to buy from offline stores. While differing from early LC stages across all (ATT) items, the FN(SC) cohort showed a higher level of interest in gathering information from OSSs – it did not differ from the FN(I) stage. Seeking information before making actual purchases significantly impacts purchase decisions (Sondhi 2015). While this trend could be noted in other early LC stages, this segment did not find e-shopping useful in improving their purchase decisions. The FN(SC) group, who were highly interested in seeking information from OSSs, did not have the intention to continue purchasing online. These groups may use OSSs to prepare for in-store shopping by gaining basic information from OSSs, thus reducing time spent in stores. With BI, we found that, while not ready to buy the same product from OSSs (BI 6), surprisingly, this segment showed a higher level of willingness to buy different products from OSSs (BI 7). This is the only item wherein the group differed from certain later LC stages, but did not differ from early LC stage, FN(PC). Furthermore, this is the only group to exhibit such behaviour. This may be due to prior experience of dissatisfaction in purchasing certain products online, which reduces their BI to shop online for the same items. However, they are not averse to buying other products from OSSs. These groups bought large appliances online, which are high ticket items. This could also be a possible reason, as these products are not bought frequently. These segments also buy medicines online, which is observed in FN(I) stages as well. This group showed strong PEOU–PU and PEOU–ATT relationship

in PLS-SEM analysis (Table 6). MANOVA results show lower PEOU value. Thus, PEOU among these groups must be improved for these groups to adopt this technology.

7.2.3.6. Full nest (teenage children) [FN(TC)]. Unexpectedly, this later LC stage (though not so old as other later LC stages (mean age = 44 years)) found e-shopping less useful compared to all other LC stages (least mean value across all items, except PU 4). While it differed from early LC stages across all items, we observe that this group believed e-shopping improved shopping effectiveness as equally as those in early LC stages. This may be due to their financial distress, as observed by Jian Xiao and Yao (2014). Better deals by OSSs may make them perceive e-shopping to be useful, as this would encourage households to buy preferred products at discounted prices or switch brands to find cheaper alternatives. Though they did not perceive the usefulness of e-shopping, they found it more user-friendly than those from FN(AD) and EN&SS groups. This is also the group that shows a weak positive attitude and BI when it comes to e-shopping. Recent studies have observed that teenagers have short attention spans while searching the Internet; they tend to search for items that do not always reflect their preferences (Cantoni, Marchiori, and Cantoni 2017). This segment shows lower level of patience; it is less cautious in using websites, compared to adolescents. In terms of accomplishing tasks, their success rate is lower than adults (Loranger and Nielsen 2013). This tendency reduces teenagers' level of confidence, which may, in turn, also impact their parents. As children age, household chores also reduce. Parents who want to spend more time with their children (Allen and Finkelstein 2014) may enjoy taking them out. Since taking a grown-up child does not present any hassles, it could be a source of entertainment, which is not available in e-shopping. In fact, teenagers like to do in-store shopping than online shopping (Forbes 2017). Furthermore, in this group, the mothers have likely been accustomed to conventional shopping for years. FN(TC) found e-shopping useful in improving shopping effectiveness. In our study, shopping effectiveness was used to indicate two aspects – getting the best deal and most product information. FN(TC) showed low mean value in gathering information (refer ATT 3 item in Table 8), which means that they do not use OSSs to gather information. Thus, this segment perceives e-shopping useful in getting the best deals. While, they do believe in getting the best bargains from OSSs, their BI to shop online is low. Thus, discounts alone cannot be a reason to shop online. Other benefits, like convenience and time-saving, may overrule availability of discounts in online shopping.

7.2.3.7. Full nest (adult dependents) [FN(AD)]. As women reach this stage, their interest in e-shopping gradually increases. This group perceived more usefulness of e-shopping compared to the FLC stage FN(TC), but did not show significant difference from them. This group, however, showed lesser mean value than FN(TC) in item PU4, which dealt with shopping effectiveness. While the best deal factor was attractive to most groups, it was not so for this segment. This may be due to the fear of deception, which could be a product of their (old) age. Though the PU of e-shopping is higher than FN(TC), this group perceived lower ease-of-use than FN(TC) stages. Recent website usage studies show that, while young adolescent children are not skilled in using technology, they are still more skilled in using websites than teenagers (Loranger and Nielsen 2013). Yet, the difficulty in bottom-up technology transfer may be due to the attitude towards e-shopping among adolescent children. Gen Z shoppers seemingly prefer offline stores, though they search for products online (Forbes 2017). Hence, when adolescent children are more inclined towards offline shopping, they want parents to take them to brick-and-mortar stores over online stores. This group showed a more positive attitude and strong BI to shop online than its previous stages, FN(TC) and FN(SC). Moreover, they also felt e-shopping was a wiser and more comfortable way of shopping than those in FN(TC) (from which they significantly differed). They also like to shop online as much as most early LC stages groups. Their attraction could be due to the fact that old parent, who become accustomed to innovative technology, also have children assist them. Hence, parents may try making use of technology convenience due to ready access to internet. The presence of an older child may also influence their behaviour, as they would gain more knowledge of technologies. However, their information-seeking behaviour is still relatively lower in comparison to other groups, other than FN(SC). This may be due to their older age. Studies also have shown that older people do not search for more products or product information online (Parment 2013). The presence of dependent children at home may also reduce the availability of discretionary time, since meeting children's requirements takes priority (Allen and Finkelstein 2014). The BI to shop online was also slightly higher in this group than FN(SC) groups, and much higher than FN(TC), showing a higher mean value. We also noted that, those in FN(AD), a later LC stage, were equally interested in buying the same products and trying different ones from OSSs. This cohort, which considered e-shopping more useful than the FN(TC) group, did not perceive its ease-of-use as FN(TC) did. However, ATT was affected more by PU than

PEOU among these groups, contradictory to what is observed in FN(TC). This stage overcame the complexity of using a technology, and then, adopted it.

7.2.3.8. Full nest (adult independents) [FN(AI)]. This group, in spite of belonging to a later LC stage, makes use of e-shopping benefits in the same way as early LC stages, except for few differences. With PU, in addition to saving time and money by shopping online (despite being free of time and financial pressure), this group strongly believed that OSSs improved their shopping productivity, which is different from all later LC stages. Moreover, they showed a higher mean value than FN(SC), an early FLC stage. This group is open enough to accept change as equally as early LC stages, in spite of their old age. This raises the following question – while OSSs influenced FN(AI), why did FN(AD), which also had adolescent children in the family, not find e-shopping useful in their purchase decision-making process? One reason might be that, at the post family stage with no dependent children, households maybe in a better financial position. Hence, with a likely reduction in responsibilities, families may start renovating their homes by buying new goods. Thus, in this case, they can afford to buy their preferred brands. The wider choice available online may influence their purchase decisions. Furthermore, independent children at home (skilled in technology) may also indulge in e-shopping, thereby influencing and supporting parents in the process (Kuoppamäki, Taipale, and Wilska 2017). They also have sufficient free time to explore new/different products. Although FN(AI) perceived e-shopping as useful as young groups in FLC stages, this group did not perceive ease-of-use in e-shopping, differing from all early FLC stages, except FN(SC). However, not surprisingly, among later LC stages, this is the group that showed the highest mean value across all PEOU items, differing significantly from EN&SS group. This may also be attributed to technology transfer across generations (Kuoppamäki, Taipale, and Wilska 2017).

FN(AI) group showed a strong positive attitude towards e-shopping than other later LC stages groups. Though both LC stages with adolescent children (FN(AI) and FN(AD)) had a strong positive attitude towards e-shopping, they exhibited a stark difference in their information-seeking behaviour. This may be due to both availability of discretionary time and proper guidance from children with information processing. Among later LC stages, this is the only group that has strong intention to repurchase from OSSs and as much as early LC stages. This is similar to the result of the m-shopping study which showed that people aged

above 55, with children, shop online as much as young shoppers, while families without children did not (Kuoppamäki, Taipale, and Wilska 2017). In spite of elevation towards e-shopping, this group neither planned to buy more nor was interested in trying different products from OSSs, similar to early LC stages. This could be due to their older age; the perceived risk towards e-shopping is generally higher in this group than among young shoppers (Lian and Yen 2014). Additionally, there is no time or financial pressure that forces them to buy all products online. Hence, they might choose to buy only products they are confident of purchasing online. Similarly, while those in early LC stages are confident that they will buy the same product from OSSs, this group does not have the same attitude. It is possible that this group does not do planned purchases, only shops online when necessary. The presence of children at home may also influence their behaviour. This older segment, which is more attractive, is also more likely to buy high ticket items (large appliances and furniture), which e-retailers can utilise.

7.2.3.9. Empty nest & solitary survivors [EN&SS]. EN&SS, who are expected to be tech-averse, in contrast, showed good interest towards e-shopping. Although this group showed the least mean value across most (PU) items, they felt e-shopping to be equally useful as the FN(SC), an early LC stage, in all aspects, except improving shopping productivity. However, improving shopping productivity requires more clarity. This group is able to accomplish their shopping goals quickly, and thus, save time. However, it showed least mean value in saving time and money, which is contradictory, and did not make use of deals (PU 4). It felt e-shopping saved time more than money. This may be due to the risk involved in buying discounted products online. Moreover, this stage is found to be financially better than other LC stages (Davison and Ryley 2013). Financial freedom may encourage them to shop freely; so they are less likely to be discount driven. This group felt e-shopping aided and improved their purchase decision better than FN(TC) group (higher mean value). Since there are no children at home, the recommendations from OSSs may be useful to this segment to make better purchase decisions. As expected, being old and independent of the young generation at home, PEOU is very low at this stage. It differed from even later LC stages across most items (Law and Ng 2016; Brown and Venkatesh 2005). This group felt more difficulty in finding the products they want from OSSs than any other group, and thus, significantly differed from all the other stages.

In spite of having less PEOU to shop online, this group possessed positive attitude towards e-shopping, similar to FN(AD), which is not observed in FN(TC), a relatively younger segment. Surprisingly, this group preferred online shopping more than an early LC stage, FN(SC). Furthermore, EN&SS showed an equal interest in purchasing from OSSs, equally as families with adolescent children (FN(AD) and FN(AI)); however, it showed a lower mean value. Studies show that retirees spend most of their time at home, which allows them to maintain their consumption with lower spending. This time, allocation affects their decisions considerably (Asiye Aydılek 2016), which may also be a reason for them to shop online. Studies also show that living alone makes one adopt technologies (Kuoppamäki, Taipale, and Wilska 2017; Berner, Aartsen, and Deeg 2017). E-shopping has the ability to reduce shopping-related travel (Zhai et al. 2017). The convenience of e-shopping may be helpful for even later FLC stages, as older age increases the difficulty of travelling. Door delivery options are helpful in such cases. This group showed a higher level of interest in visiting OSSs whenever they were in need of a particular product than FN(TC), from whom they differed significantly. While they were ready to repeat a purchase of the same product from OSSs, like FN(AD/AI), they did not risk buying different products online. A similar trend is observed in FN(AI) stage as well. Availability of excess discretionary time, due to the absence of children at home, does not force them to buy all products online, like FN(I). This group also comprised retired people, whose age may affect their risk-taking ability. Their decreased income and non-availability of guidance from children may restrict them from making full use of technology. Moreover, grandchildren are found to be the most influential family members in making this older segment adopt technology (Luijkx, Peek, and Wouters 2015). The trend of buying children's products online by EN&SS and FN(AI) may be due to this. Thus, the e-retailers must not only focus on young mothers, but also on older grandmothers, who could very likely be a lucrative market segment. More than any other product needs, for families, grocery items take more priority. Hence, older segments must be introduced to online grocery shopping, which increases convenient access for them and improves online grocery market share among e-retailers. Studies have also shown that, once the child leaves the familial nest, empty nesters start renovating their home by buying new furniture and accessories. If this segment is targeted, high ticket items, such as furniture, could also be sold online – this area of e-retail is also in its nascent stage in India.

8. Discussion, implications, and conclusion

With the advent of information technology, the complexities of shopping is simplified, helping women lead lives of convenience. This study contributes to a relatively unexplored field, and hence, it is a pioneering effort to understand the role of FLC stages on e-shopping adoption among Indian women. Additionally, the study is focussed on Indian women across all LC stages, which is hardly available in the literature. This study comprehensively studied how perceptions, attitudes, and behaviours varied as one transcends through various FLC stages. It also tested the relationship between various TAM variables across FLC stages. This is the first study to (a) differentiate expecting women (EP) from NM women and (b) split the launching families' stages into FN(AD) and FN(AI) to understand e-shopping behaviour. This study also uses various analytical methods (PLS-SEM, PLS-MGA, and one-way MANOVA) for an in-depth understanding of women across each FLC stage, and the aspects in which they differ from others.

The findings provide empirical support for the claim that FLC stage is an important factor that affects e-shopping behaviour of Indian women. It is found to have a significant effect on all the TAM variables – PU, PEOU, ATT, and BI – thus giving an affirmative response to all our research questions. Consequently, one can understand that FLC stages change the situation at home and behaviour of women who begin to seek and adopt e-shopping technology for increased convenience. Similar results are observed in various other studies that found the effect of FLC stages on technology adoption and usage (Frey, Xu, and Ilic 2017; Kuoppamäki, Taipale, and Wilska 2017; Tanis, van der Louw, and Buijzen 2017; Van Deursen and Helsper 2015; Rudi et al. 2015; Chesley and Johnson 2014; Helsper 2010). Thus, e-shopping is one such technology that has supported women of all FLC stages, in one way or the other, by offering different benefits to manage their life effectively, thereby improve their quality of life.

A number of studies have been conducted to understand the influence of consumer age on e-shopping. As discussed in Section 3, the results are mixed (Appendix 1). While some studies showed that young people are more inclined to shop online, whereas older ones are not (Khare, Anshuman, and Singh 2012), others show that age does not have any effect on behaviour (Lian and Yen 2014). Our study contradicts both, concluding that FLC stage is a better predictor of e-shopping behaviour than age. Difference in e-shopping behaviour could be observed not only between FLC stages (early and later), but also among the cohorts – without children (NM, EP, EN&SS), with children [FN(I), FN(PC), FN

(SC), (FN(TC), FN(AD), FN(AI)]. There are certain segments among later LC stages that show interest in e-shopping (FN(AI)) equally as young. There are certain FLC stages, which, despite the presence of dependent children, are not attracted towards e-shopping [FN(SC), FN(TC)], and certain stages, despite being child-free, are inclined towards e-shopping (EP, EN&SS). This shows that the e-shopping behaviour of a woman, in particular, can be better determined by the FLC stage, to which she belongs, than by her age.

These differences were not observed in previous studies that split the sample by age (Law and Ng 2016; Law, Kwok, and Ng 2016; Lian and Yen 2014) or the presence of children at home (Gong, Stump, and Maddox 2013; Sondhi 2015). For instance, Sondhi (2015) studied e-shopping behaviour of young mothers, and concluded that the presence of children at home affects e-shopping. However, the FLC stage split made by our study states that there are certain segments which, in spite of being young and having young children at home, are not much attracted to e-shopping (FN(SC)). Furthermore, the priorities for these young mothers (FN(I), FN(PC), and FN(SC)) who engage in e-shopping also differ. These differences among 'young mothers with children' cohort makes us raise a particular question – does the presence of children or their age affect e-shopping behaviour? Thus, this study shows that the combination of FLC variables (age, presence/absence of children, and age of children) is more effective than measuring them separately.

As shown in the literature, the needs and preferences of customers differ at each FLC stage. Our study results also reveal something similar. Different LC stages seek different benefits from e-shopping; for example, FN(I) seek time-saving; FN(PC) seek time and money savings, along with improved decision-making; FN(SC) seek information; FN(TC) are inclined towards deals; FN(AI) and NM seek to make better purchase decisions; and EN&SS and EP seek comfort. While discounts maybe more important for FN(PC), FN(AI) do not require such cost saving. Thus, it is important for e-retailers to understand the needs of women across different LC stages in order to provide customised services.

Jiang et al. (2015) in a study based in China, successfully incorporated the FLC concept in their e-commerce recommendation systems. This practice could also aid Indian e-retailers, since, like China, it is a collectivistic country. Indian e-retailers could begin to identify e-shoppers' FLC stage, and hence, predict the needs and preferences of customers in order to strengthen their recommendation systems (Guo, Dou, and Kuang 2016; Jiang et al. 2015). Additionally, it could also be beneficial to cross selling – e-retailers would not just consider the

customer, but her entire family while making recommendations. Instead of recommending similar products for the same person, the e-commerce firm can give recommendations considering the whole family, based on the LC stage to which he/she belongs. Furthermore, e-shopping advertisements could stress on convenience, time-saving and abundance of choice to attract women across FLC stages, rather than focusing on ephemeral sales and discounts that are frequently available in offline stores. Consequently, e-retailers would be able to reduce discount rates, which has caused massive losses to e-retail firms (*Economic Times*, January 20, 2017).

9. Limitations and future research directions

As with other studies, this study has a few limitations. First, this study concentrated on the effect of FLC stages on women e-shoppers. Although women take the core responsibility of household chores and childcare, studies show that men in this age often play an equal role due to the dynamics of a dual career family system (Roman and Cortina 2016). Hence, it would be valuable to expand the study to men as well. Second, the study was not product specific. Shoppers who purchased any product online during the last six months participated in the study. Although this contributes to the generalisation of research, studies have shown that online shopping behaviour differs with the type of products bought online (Naseri and Elliott 2011). Thus, a product-specific study would further benefit extant literature. Third, this cross-sectional study observed the e-shopping behaviour of women belonging to a particular LC stage at one point of time. However, a better understanding of how the perception and behaviour towards e-shopping differs when a person moves from one stage to the next is important, which, in turn, could help anticipate e-shoppers' needs as they transition life stages. Thus, a longitudinal study would be worth conducting. Fourth, we used the age of the youngest child to split the LC stages. However, studies have shown that older children have more responsibility and influence in family decision-making processes than younger children (Batounis-Ronner, Hunt, and Mallalieu 2007). Thus, by splitting the LC stages based on the age of older children, one could compare e-shopping behaviour influences between the youngest and oldest child in the family.

Regarding FLC stages formation, the following points must be considered: The study considers the Indian nuclear family system while framing the model. Although the nuclear family system is on a rise in metropolitan cities, extended family systems still exist in the country. Hence, these joint family systems must also be

studied, since the cohabitation of two or three generations in the same home may influence online shopping behaviour, too. Furthermore, more studies should be conducted in different cultural contexts, especially because FLC stages have a different effect on people across countries. Similarly, as insisted by Schaninger and Lee (2002), full nesters can be split as full nesters and delayed full nesters in future. Studies have shown a difference in behaviour of full and delayed full nesters – the latter are relatively financially stable than the former, and willing to spend lavishly for their children. Above all, the ‘bachelorhood’ stage is also important for future studies, since they form the major part of online shoppers. Studies have shown that technology usage skills differ with teenagers and college students (Cantoni, Marchiori, and Cantoni 2017; Loranger and Nielsen 2013). This may also be a good research topic to understand the e-shopping behavioural difference among teenagers and dependent and independent bachelors in India, which could, in turn, affect their parents’ e-shopping adoption behaviour. Additionally, the topic of customised FLC stages designed in this study could be a topic of research in itself. The design could be further modified, possibly on the basis of the Indian census. This would render the model further parsimoniousness.

This research focused on studying the influence of FLC stages on various antecedents of e-shopping adoption. Since e-shopping is in its nascent stage in India, it is important to understand the adoption behaviour of e-shopping in the regional context. At the same time, it is equally important to understand the post-adoption behaviour of e-shoppers, like perceived e-service quality, perceived value, customer satisfaction, loyalty, among others, which could help e-retailers in a long-run (Chiu et al. 2014). Hence, future research should attempt to understand the influence FLC stages on post-adoption behaviour. Though this study provides a clear picture of FLC effect on the adopters of e-shopping, non-adopters must also be attracted. Hence, the factors that would act as drivers and barriers of e-shopping among non-adopters, across FLC stages, could be a fruitful future research area. This would also help the e-retailers understand market prospects and suspects based on their FLC stage, and serve accordingly. Moreover, the utility of the variable FLC stages does not stop with technology adoption in shopping. Several other technologies, like adoption of PayTM, PayPal, and m-shopping, could also be tested. Moreover, FLC stages are known to affect psychological aspects of women, thus affecting factors like work–life balance and job satisfaction. Studying the influence of FLC stages on those areas will also give a better understanding of the general female psyche.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix - 1 Influence of Age on e-shopping using TAM/UTAUT

Study	Model, Variables used	Age group	Sample	Results	Influence of Age
Law, Kwok, Ng, 2016	TAM IV: Security, personal innovativeness, perceived ease-of-use, perceived usefulness, DV: Attitude, habitual online usage, purchase intention	Middle – 31-60	Non-online buyers	PU-ATT* PEOU-ATT* PU-BI* PEOU-BI ^{ns} ATT-BI*	No group comparisons made
Law, Ng, 2016	TAM IV: Security, personal innovativeness, perceived ease-of-use, perceived usefulness DV: Attitude, purchase intention MOD: Age, gender	Middle – 41-50 Old – 51-70	Online buyers	PU-ATT* PEOU-ATT* PU-BI ^{ns} PEOU-BI* ATT-BI*	Significant PEOU is high among middle aged shoppers that affected their ATT, but is low among old.
Lian and Yen, 2014	UTAUT IV: performance expectancy, effort expectancy, social influence, facilitating conditions DV: behavioural intention, user behaviour MOD: gender, age, experience, volume of use	Young-20-35 Old-51-75	Both	PE on BI* EE on BI*	Insignificant
Hernandez 2011	TAM IV: acceptance of the internet, frequency of use of the internet, satisfaction with the internet DV: perceived self efficacy, perceived ease of use, usefulness, online shopping Attitude, current online shopping behaviour, future online shopping behaviour MOD: age, gender, income	15-25 (junior), 26-45 (adult), over 46 (senior)	Online buyers	PU-ATT* PEOU-ATT* PU-BI* PEOU-BI ^{ns} ATT-BI*	Insignificant
Gong et al., 2013	TAM IV: Demographic factors (Age, gender, education, income, marital status), Perceived Risk, Perceived ease of use, Perceived usefulness DV: Purchase intention	Age 16-17, 18-24 25-34, 35-44, 45-54, 55-64, 65-74, 75 and above	Online buyers	PEOU-BI ^{ns} PU-BI* Age ^{ns} Marital status with presence of children*	Insignificant
Khare, Khare and Singh (2012)	IV: Perceived usefulness, perceived ease-of-use, age, gender DV: Attitude towards e-shopping convenience and enjoyment	20–30 30–40 years, 40–50 years, >50 years age (70% of the respondents below the age of 40)	Online buyers	PU-ATT* PEOU-ATT*	Significant PEOU and ATT are more positive among young than old, while PU did not differ with age.

*denotes statistically significant relationship among the constructs.^{ns}

denotes statistically non-significant relationship among the constructs

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