An Integrated Model for E-commerce Adoption at the Customer Level with the Impact of Social Commerce

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Abstract
Advancement in e-commerce technologies and emergence of web 2.0 applications developed e-commerce. Nowadays, customers are entering new platform, where they are more active than before through participating in business process with the Web 2.0 applications. By the impact of the new stream in e-commerce, social commerce, we propose and test an adoption model at the customer level. Impact of social commerce in the e-commerce has been examined in this research to have a better understanding of consumers’ behavior. This research proposes an integrated model drawing on TAM and SCAM. We collected the data through a survey and applied structural equation modeling (SEM) approach with the aim of partial least square (PLS) to analyze the data. According to the results social commerce components are impacting e-commerce adoption process. In the end conclusion, implications for e-commerce research, practical implications, implementation for IS researchers, key results, limitation and future direction of this research discussed.

Keywords: E-commerce adoption, Social Commerce, Trust, SCAM, TAM, Web 2.0.

Introduction
The emergence of Web 2.0 and the applications related to this technology, such as Social Networking Sites (SNSs) and social media has affected many platforms and strategies in business and research (Cooke & Buckley, 2008). This change highlights the importance of researching people in ‘groups’ or ‘tribe’ (Cooke and Buckley, 2008).

The future of e-commerce is social commerce (Hajli, 2012). The adoption of e-commerce is now being influenced by the emergence of social commerce (s-commerce). Web 2.0 tools and applications give scholars an opportunity to investigate arising SNSs in adoption processes of e-commerce (Cooke and Buckley, 2008). We can analyze e-vendors and consumers as they interact in these platforms.

In the current literature of e-commerce adoption, there are many conceptual frameworks which are mostly affected by two main streams, Technology Acceptance
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Model (TAM) (Davis, 1989) and Theory of Planned Behaviour (TPB) (Ajzen, 1989) (e.g., Gefen, Karahanna, & Straub, 2003; Pavlou & Fygenson, 2006). There are also some other researches in e-commerce adoption which are affected by TEO and other theories. However, there are few studies conducted at the customer level (e.g. Pavlou and Fygenson, 2006) and the impact of social commerce components (e.g. Hajli, 2012).

Business-to-consumer or B2C e-commerce is related to the activity of the customers to buy a product over the internet; this type of e-commerce has received very limited attention for research (e.g. Pavlou and Fygenson, 2006). However, e-commerce adoption mostly comes from IS literature, where is within the setting of IT acceptance and use with marketing elements (Pavlou and Fygenson, 2006).

In this research e-commerce adoption mostly influenced by the new stream in e-commerce called, s-commerce. We aim to examine the role of s-commerce components in e-commerce adoption at the customer level. More specifically, we recognized the underlying components of s-commerce, which are social media, ratings and reviews, social shopping, social advertising, recommendations and referrals, and forums and communities (Hajli, 2012) and integrated them into TAM and SCAM other influential constructs on e-commerce adoption. The author also offers an empirical test of integrated model, which is proposed in this research to discover more about the theoretical relationship between variables. It is predicted that by focusing on these constructs, it is possible to enhance the level of e-commerce adoption with at customer level.

Theoretical Foundations of the Research

Electronic Commerce Adoption

Electronic commerce is a phenomena described by many authors (Gefen & Straub, 2000; Pavlou & Fygenson, 2006) as the user’s engagement in online trade connection with an e-vendor (Pavlou and Fygenson 2006). Purchasing behaviour is a key as well as getting information about a product for online consumer behaviour (Geffen and Straub 2000; Pavlou and Fygenson, 2006) and these two are the most important parts of long-held consumer behaviour models (Pavlou and Fygenson, 2006).

According to Pavlou and Fygenson (2006) online customer behaviour is not only about purchasing a product, but also acquiring product information before buying the product. This is a right scenario as investigated by Pavlou and Fygenson (2006) and now in the s-commerce era SNSs and Web 2.0 technologies create platforms that customers get information through the s-commerce components before they intend to buy. One of the important these components are Forums and communities (Hajli, 2012). Getting information of shopping process is similar to window shopping (Gefen 2000), which transfer information related to a product from e-vendor website to a consumer (Pavlou and Fygenson, 2006) and it is investigated by the effect of s-commerce component in this
research.

**Social Commerce**

Forrester research report (Owyang et.al, 2009) indicates that the era of social commerce has started recently will reach the maturity on 2013. They will be more influential than business websites and CRM systems (Owyang et.al, 2009). They indicate that forums and communities as showed in our previous research (Hajli, 2012) will become the motivating power for innovation. In this proposal brands and marketing success will transfer toward the customers connect in SNSs (Owyang et.al, 2009).

*Social commerce is a new concept which enables customers to have an active position in cyber space. It is a development in e-commerce based on a network of buyers and sellers. It is more commonly found in social and interactive forms of e-commerce (Hajli, 2012).*

By this, S-commerce has many influences on the future direction of business strategies in marketing research, which offers new marketing tools, act as a driving force for innovation (Cooke and Buckley, 2008). S-commerce also affects customer behaviour (Hajli, 2012). Therefore, we need to carefully apply this new stream in commerce to direct future research on e-commerce adoption or marketing strategy.

**TAM**

Technology Acceptance Model (TAM) (Davis, 1989) is one of the core streams on investigating a user’s intention to use a system and is used by many scholars. TAM assumes higher Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of a system causes a greater intention to use a system.

**SCAM**

Social Commerce Acceptance Model (SCAM) (Hajli, 2012) indicated the importance of s-commerce components in intention to buy behaviour of customers. Trust as well as forums and online communities play key roles in the SCAM model. According to SCAM, forums and communities positively increase customers’ trust and consequently intention to buy increases. This is the first model in s-commerce to date. This model validated through an empirical study that SNSs are highly influential upon business platforms and make customers more active and involved in the business process.

**Research Model**

The proposed model as shown in Fig 2.0 has nine constructs, which are discussed here.
Learning and Training

According to Darch and Lucas (2002), people who have not embarked on e-commerce usually believe that they cannot use it and also might have less certainty about e-vendors. The literature related to the role of training and learning on e-commerce adoption is not substantive, but some research (Darch & Lucas, 2002) indicates that learning and training in e-commerce will increase people’s awareness of e-commerce benefits, and consequently will also increase e-commerce adoption.

Putting information on the internet about a product or service so that consumers can evaluate it is likely to assist them in deciding which purchase to make, which is predicted to increase PEOU in customers (Pavlou and Fygenson, 2006).

With the introduction of many user-friendly software applications, users do not require specific training. The author is investigating to see if learning and training in computer literacy and e-commerce at user level can help to increase the awareness of customers about the benefits of e-commerce. This factor might increase intention to use a website as well as PEOU in customers. Customers feel easier to order online instead of going to the high street if they know more about the benefits related to the technology. It may be easier for customers to book and pay for an airline flight from a website perceived to be reliable, easy to navigate and user-friendly. According to this statement:

H1: Learning and training can affect user’s intention to use internet or a website,
H2: Learning and training can affect user’s PEOU.

User Experience

Users’ experience can affect their shopping behaviour in different situations. When users have more experience on the internet they have less difficulties and barriers to buy online but have more concern for the security and privacy issues over the internet (Corbitt et. al, 2003). There are many reasons why people prefer to shop in a high street rather than online; lack of knowledge and online shopping experience are examples. Consequently, when customers have more web experiences they are more likely to perceive the internet as easier to use for shopping. Customers with internet experience have a sense of comfort with websites and this increases their decision making ability and also reduces their perception of risk and uncertainty (Rodgers & Nicewander, 1988), which affect trust.

How customers’ web experience will affect their trust and perceived ease of use of e-vendors is an under-researched subject. Accordingly we are propose that:

H3: Customer’s web experience is affecting their trust,
H4: Customer’s web experience is related to their perceived ease of use.

In regard to the previous researches (Weisberg, Te’eni, & Arman, 2011) on the impact of user experience on social presence, we agree that when a user gets more experience on the internet and with online shopping, that user may achieve a greater social presence.
Accordingly we hypothesise:

\( H5: \) Customer`s web experience affects their social presence.

**Social Presence**

According to some authors (Luhmann, 1979)(Gefen & Straub, 2004), trust will increase in consumers when the product or e-vendor interacts with customers in accordance with the expectations of consumers. Customer has an insight that online shopper is representing a good extent of social presence in its website, which also can increase the trust in customers (Luhmann, 1979; Gefen & Straub, 2004). Consequently, social presence is an important aspect in e-commerce adoption.

Social presence can also create a level of trust in customers throughout the insight that e-vendors have in their websites with some characteristics such as sociable, a sense of personal and sensitive human contact (Gefen & Straub, 2004). In the literature related to trust (Gefen & Straub 2004; Luhmann, 1979) social presence plays a key role. Therefore, we can hypothesize that:

\( H6: \) The level of social presence embedded in an online shopping website is positively related to customer trust.

**Familiarity**

Familiarity enables customers to reduce ambiguity in the online environment (Gefen, 2000) and familiarity is a sympathetic knowledge of everything surrounding people (Luhmann, 1979). These experiences and knowledge can help a customer to have a better understanding of the online environment. It can also link to trust on them. For instance, familiarity with some websites such as e-Bay can increase the level of trust on people, and as a result can affect the intention to use the website.

Familiarity of a website can construct trust when an online shopper demonstrates trustworthy behaviour, or in contrast, familiarity can destroy the relationship if e-vendor unsuccessful to show it (Gefen, 2000). By this, increasing familiarity, which can happen with the Web 2.0 applications and social networking platforms, it is possible to develop customer’s aptitude to retain certainty and trust of online shopper behaviour. Consequently:

\( H7: \) Increased degrees of familiarity with a website or online vendor environment will increase trust in the online shopper.

**Social Commerce Components (SCCs)**

The advancement in e-commerce technologies developed the new stream called social commerce. S-commerce has some new opportunities for customers and businesses such as more customer satisfaction and loyalty (Leitner and Grechenig, 2007). In the environment that s-commerce was created, customers are participating in the business process by their
comments, ratings and reviews of products. This phenomenon is mostly affected by SNSs such as Facebook. The buzz word of ‘Like’ in Facebook is a good example of customer support in the marketing process of a business. In regard to this participation, customers might change their shopping behaviour and move from high street shopping to online shopping, where their friend liked a product or supported a product. Social media and social advertising as well as other SCCs such as forums, communities, ratings, reviews and referrals shapes a new structure for business.

On the other side, social commerce components will make users familiar with a website as their friends leave comments on products or a website, for instance in forums and communities or in facebook.

These will increase the familiarity, therefore reducing ambiguity in online environment (Gefen, 2000) and knowledge of customer will increase. Consequently, trust will be affected in the customer with good or bad comments, ‘Like’ or ‘Unlike’ button.

**H8: Social commerce components will increase user’s familiarity of a website.**

Moreover, as investigated before in some research (Weisberg, Te’eni and Arman, 2011), media richness and now by s-commerce components can affect user’s social presence. A higher level of social presence can be attained through SNSs such as Facebook that connect buyers to e-vendors by the aim of s-commerce components (Weisberg, Te’eni and Arman, 2011). As such in this model we hypothesise:

**H9: Social commerce components can affect user’s social presence.**

**Perceived Usefulness and Perceived Ease of Use**

Technology Acceptance Model (TAM) is a widely accepted theory of user’s technology acceptance. Two important variables of this model are perceived usefulness and perceived ease of use, which have been extensively applied and validated in different research studies. These two variables are a base of proposed model of this research.

There are many reasons people accept or reject a technology but among them there are two reasons that are more influential. Initially, users believe that by using a new technology, their performance will improve; this is referred to as perceived usefulness (Davis, 1989). The second reason would be users assume that the technology will be easy to use; Davis (1989) theorized this as perceived ease of use. These two are fundamental determinants of user intention to use a system (Davis, 1989) and also have a significant influence on intention to shop online, which can be extend into investigations on user online behaviour in acceptance of B2C model in e-commerce (Pavlou, 2003). The paths in TAM can also apply in e-commerce (Gefen et al. 2003). As indicated in previous research (Hajli, 2012), these paths can apply in social commerce adoption model to develop an integrated model with the impact of social components. Accordingly we can hypothesise:

**H10: The user’s perceived usefulness has a positive effect on the user’s intention to use**
a website in B2C model.

H11: The user’s perceived ease of use has a positive effect on the user’s perceived usefulness of a website in the B2C model.

H12: The user’s perceived ease of use has a positive effect on the user’s intention to use a website in the B2C model.

It is also possible that perceived ease of use affect trusts in customers by perception of customers about an e-vendors and the commitments that businesses provide for a customer (Gefen et al., 2003). These perceptions can create by different character such as being easy to use of a website and good navigation on that and influence of social commerce components. Gefen et al. (2003) mentioned that when e-vendors configure websites to be easy to use and navigate, they are building a relationship with customers. This subsequently increases the trust that customers hold for the e-vendors. Accordingly:

H13: The user’s perceived ease of use has a positive effect on the user’s trust.

Social commerce components such as forums and communities, rating and review websites or social media and advertising websites can create a platform for customers to make their shopping decisions easier. They can use for instance other friends’ comments or Facebook ‘like’ to make their decision about a specific product and shop for it online. Facebook as such can improve this platform and is making it easier to navigate to the targeted website and at the final line customers find it easier to use the website for shopping. We can therefore hypothesise:

H14: Social commerce components can affect the user’s perceived ease of use.

**Trust**

Trust is a feature linked to uncertainty in most economic and social transactions (Pavlou, 2003) and it is as key factor to enable e-commerce. This feature needs more attention in cyber space as e-vendor and customers are not face to face. However, social commerce components (Hajli, 2012) with the development in e-commerce and platforms can help to improve the trust in customers. Customers in these platforms are active and virtually can support each other with their recommendations, ‘Likes’ or comments.

According to Pavlou (2003), trust has a direct affect on intention to buy online and on reducing uncertainty in e-commerce sites; trust is a key aspect of e-commerce adoption. This has been found in many research studies on e-commerce adoption (Pavlou 2003; Luhmann, 1979; Gefen & Straub, 2004) and now is a main construct in s-commerce (Hajli, 2012).

According to research on the impact of trust on e-commerce (Pavlou, 2003; Gefen & Straub, 2004), trust influences PU. Pavlou (2003) argues that there is no motive for customers to perceive usefulness in a website if they’re e-vendor cannot be trusted. Therefore according to previous statement and findings of previous research we can link
trust to intention to use and PU:

- **H15**: Trust in user’s is positively related to the PU of a web interface.
- **H16**: Trust in user’s is positively related to their intention to use a web interface.

### Research Methodology

#### Measurement Development

The proposed model is drawn from TAM and SCAM. In this process the target is to use an e-commerce site and consumer behaviour. Most of the measurement items were drawn from the existing literature in e-commerce adoption and s-commerce. These constructs were adopted to the proposed model based on the experience we got in the pilot study and the previous research done by the author.

Social commerce components are social media, social advertising, forums and communities, ratings and reviews, recommendations and referrals. These were all tested in previous research (Hajli, 2012). Learning and training was not used in e-commerce adoption models but the author is proposing this to see the influence of this variable on user’s behaviour.

Trust, PU and intention to use were adapted from Hajli (2012) and Gefen et. Al, (2003). Familiarity was based on Gefen (2000). PEOU was adopted from Gefen, Karahanna and Straub (2003). User experience was adopted from Corbitt, Thanasankit (2003) and social presence was based on Gefen and Straub (2004).

#### Survey Administration

In this research we used paper and e-survey. We used a paper questionnaire for the people in the UK and electronic questionnaire for the people around the world through different mailing lists that we had access.

In the administration of e-survey we considered different issues which might affect people participation. For instance we launched a webpage with a nice graphic and easy to navigate email to the survey. In an invitation letter email we requested people to participate by simply clicking on the survey link and participating in the research.

We also discussed the ethics approval around the release of this survey to Birkbeck, University of London staff with the ethics officer for our department. Moreover, informed consent, confidentiality that needs to be considered in a survey proficiently investigated and related forms were signed. This is an ethical procedure in relation to research involving human subjects, which many researchers ignored.

However, before we use the main questionnaire for the development of constructs of the proposed model and their operationalization we performed pre-tests in small scales in the UK to make sure the questionnaire is measuring exactly what the author is looking for. We also had a number of interviews with different groups. The pre-test was conducted with
a total of 50 users to enhance the measurement scales. We contact the people in pre-test to conduct the main survey.

The main sample of this research is based on the cooperation of 209 internet users. The main survey used conducted electronically mostly. We sent almost 1000 emails and paper questionnaire. We asked respondents to use their previous online shopping experience if they have to answer the questions.

**Research Design**

King et al. (1994) divide research design into four different components which are: research questions, the theory which will shape the research framework, the data, and finally the use of collected data. Usually these are not developing separately or in any preordained order (King, et al., 1994). The primary objective of this research is to develop an integrated model for e-commerce adoption with the impact of social commerce and testing the model by its constructs. To achieve this objective some research questions are posed, which are presented in Table 1.0.

**Table 1**

<table>
<thead>
<tr>
<th>Research questions</th>
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<tbody>
<tr>
<td>RQ1</td>
</tr>
<tr>
<td>RQ2</td>
</tr>
<tr>
<td>RQ3</td>
</tr>
<tr>
<td>RQ4</td>
</tr>
</tbody>
</table>

**Data Analysis**

Some author agreed (Pavlou and Fygenson, 2006) that there are not significant differences between the result from students and the consumers sample. Then we used students for our pilot study. To make sure the results are not significantly different, the author performed a separate analysis for consumers and student. We received almost indistinguishable results. Consequently the results we have for the survey is from combined data from students and consumers.

**Data Analysis Approach**

**Structural Equation Modeling**

SEM is substantially used in IS discipline and there are a number of publications which
have used this approach (Chin, 1998). This research uses Structural Equation Modeling (SEM) in the data analysis, as other authors (Gefen, et al., 2000; Chin, 1998) believe this approach has many advantages over other methods, for instance Multiple Regression.

With the aim of SEM researcher in social science can perform path analytic modeling with the variables, which cannot be observed and called latent variables (Chin, 1998). SEM is also good in terms of path and factor analysis; especially when we are looking for reliability and validity of a research outcome from different angles, which is available through this approach.

In SEM the goal is to produce a non significant result, instead of testing hypothesis which is done in the traditional approaches (Chin, 1998). Moreover, the high and low R-square does not have a substantive effect on the suitability of the model, which models with not high R-square and/or factor loadings can still surrender a good goodness of their model fit (Chin, 1998).

**Partial Least Square**

In SEM approach we selected Partial Least Squares (PLS) method as this method has good advantages compared to others, for example LISREL. Whereas sample size is important in SEM, PLS is good for a small sample size research (Gefen et al., 2000) such as our sample, of 300 people. PLS has the capability to contain secondary data, which make this method in SEM a suited tool for exploratory research (Gefen et al., 2011). PLS is a tool for the time that theory is emerging and the data is rich and emphasis is not on latent variables but on prediction (Gefen et al., 2011).

According to Gefen et al. (2000) and Chin (1998), in PLS the minimum sample size need to be 10 times the number of items related to the most complex variable or constructs. In the proposed model we have six constructs and three complex variables, which with a sample size of 300 is more than adequate for a proper PLS process. Moreover, PLS is also good for exploratory research (Chin 1998, Gefen and Straub, 2004), which is the nature of this research. This method is also suitable for testing a new model and theory as it can be good for confirmatory and exploratory research (Gefen, et al., 2000). Therefore, this method is used in this study in order to test proposed model (SCAM) and is an exploratory work.

“PLS combines a factor analysis with multiple linear regressions to estimate the parameters of the measurement model (item loadings on constructs) together with those of the structural model (regression paths among the constructs) by minimizing residual variance.” (Gefen and Straub, 2004). With the help of PLS we are able to test validity of discriminant and convergent scales which is important when we test a new model. “Convergent validity is adequate when constructs have an Average Variance Extracted (AVE) of at least .5 (Fornell and Larcker, 1981).” (Wixom and Watson, 2001, p.28)
Findings

In this research we conduct an empirical study to validate the SCAM model and test related hypotheses. The constructs of this survey, including sources from previous research, are shown in the Table 2.

Table 2
Sources of proposed model constructs

<table>
<thead>
<tr>
<th>Codes</th>
<th>Scales</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Q5. Promises made by the Website that I used for my last online shopping are likely to be reliable.</td>
<td>0.772638</td>
</tr>
<tr>
<td>T2</td>
<td>Q6. I do not doubt the honesty of the Website that I used for my last online shopping.</td>
<td>0.731549</td>
</tr>
<tr>
<td>T3</td>
<td>Q12. Based on my experience with the online vendor in the past, I know it is honest.</td>
<td>0.764900</td>
</tr>
<tr>
<td>T4</td>
<td>Q13. Based on my experience with the online vendor in the past, I know they care about customers.</td>
<td>0.652289</td>
</tr>
<tr>
<td>PU1</td>
<td>Q1. Searching and buying on the internet is useful for me.</td>
<td>0.816748</td>
</tr>
<tr>
<td>PU2</td>
<td>Q2. Searching and buying on the internet makes my life easier.</td>
<td>0.830740</td>
</tr>
<tr>
<td>PU3</td>
<td>Q7. The Websites on the internet enable me to search and buy materials faster.</td>
<td>0.745992</td>
</tr>
<tr>
<td>PU4</td>
<td>Q8. The Web sites increase my productivity in searching and purchasing products on the internet.</td>
<td>0.714750</td>
</tr>
<tr>
<td>IU1</td>
<td>Q14. I am very likely to provide the online vendor with the information it needs to better serve my needs.</td>
<td>0.552900</td>
</tr>
<tr>
<td>IU2</td>
<td>Q31. I am happy to use my credit card to purchase from an online vendor.</td>
<td>0.907445</td>
</tr>
</tbody>
</table>

**Familiarity**  

| FA1 | Q3. I am familiar with searching for materials on the Internet. | 0.831856 |
| FA2 | Q4. I am familiar with buying materials on the Internet. | 0.843213 |
| FA3 | Q9. I am familiar with inquiring about material ratings on the Internet. | 0.675021 |

**Social commerce components**  
Adapted from Hajli, M. (2012)

| FC1 | Q10. I trust my friends on online forums and communities. | 0.326537 |
| FC2 | Q11. I use online forums and communities for acquiring information about a product. | 0.612206 |
| FC3 | Q15. I usually use people ratings and reviews about products on the internet. | 0.851757 |
| FC4 | Q18. I usually use people’s recommendations to buy a product on the internet. | 0.794406 |

**Perceived Ease of Use**  

| PE1 | Q16. It is easy to become skillful at using the Web sites. | 0.719395 |
| PE2 | Q17. Learning to operate the Web sites on the internet is easy. | 0.739268 |
| PE3 | Q19. The Web site that I use for my online shopping is flexible to interact with. | 0.757334 |
| PE4 | Q20. My interaction with the Web sites in the internet is clear and understandable. | 0.750735 |

**User experience**  
New items; B J. Corbitt, T Thanasankit, H Yi. (2003)

| UE1 | Q23. I perceive myself pretty experienced in using the computer. | 0.883162 |
| UE2 | Q24. I perceive myself pretty experienced in using the Internet. | 0.874845 |
| UE3 | Q25. I have been using the Internet for a long time. | 0.857090 |

**Social presence**  

| SP1 | Q26. There is a sense of human contact in the website. | 0.867760 |
| SP2 | Q27. There is a sense of sociability in the Website that I use for internet shopping. | 0.797639 |
Q21. There is a sense of human warmth in the Website that I use for my online shopping.

Q22. There is a sense of human sensitivity in the Website that I use for my last online shopping.

<table>
<thead>
<tr>
<th>Learning and training</th>
<th>New items</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>Q28. I have had training to use computers and the internet. 0.564510</td>
</tr>
<tr>
<td>L2</td>
<td>Q29. I have learned to use the internet to shop online. 0.751514</td>
</tr>
<tr>
<td>L3</td>
<td>Q30. My learning and training is/was useful for online shopping. 0.869628</td>
</tr>
</tbody>
</table>

**Reliability**

Reliability in a survey is the stability of the measures it uses (Sapsford, 2007). The aim of this is to seek constant results in repetitive measurement. To measure reliability of this research we tested the internal consistency, which can be calculated by Cranach’s alpha. Since Cronbach reliability coefficients need 0.70 or higher, this research has the value of Cranach’s alpha greater than 0.70 as shown in Table 3.0, which indicates adequate internal consistency.

<table>
<thead>
<tr>
<th>Reliability statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
</tr>
<tr>
<td>.877</td>
</tr>
</tbody>
</table>

Moreover, to improve the reliability of the test, we amended the questionnaire after the pilot test, as the check for reliability of the research depends on piloting of the instrument and question wording (Bell, 2010). These two types of reliability tests ensure we can analyse the data for the survey.

**Validity**

As this research is exploratory work which is trying to work on a new stream in e-commerce, called social commerce and probing an area which is not well understood, validities stressed on content validity; construct validity with initial factorial tests and for reliability test researcher should go for internal consistency (Straub, et al. 2004). An overview of PLS quality criteria has shown in table 4.0, which we will discuss them as follow.
Table 4
PLS quality criteria overview

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE</th>
<th>Composite Reliability</th>
<th>R Square</th>
<th>Cronbachs Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity</td>
<td>0.619549</td>
<td>0.828736</td>
<td>0.136007</td>
<td>0.716014</td>
</tr>
<tr>
<td>Intention to buy</td>
<td>0.564577</td>
<td>0.710052</td>
<td>0.392588</td>
<td>0.703315</td>
</tr>
<tr>
<td>Learning &amp; Training</td>
<td>0.546566</td>
<td>0.778358</td>
<td>0.029840</td>
<td>0.729029</td>
</tr>
<tr>
<td>PEOU</td>
<td>0.550301</td>
<td>0.830307</td>
<td>0.291596</td>
<td>0.729294</td>
</tr>
<tr>
<td>PU</td>
<td>0.606145</td>
<td>0.859794</td>
<td>0.322740</td>
<td>0.782089</td>
</tr>
<tr>
<td>Social Commerce Components</td>
<td>0.509498</td>
<td>0.755532</td>
<td></td>
<td>0.712548</td>
</tr>
<tr>
<td>Social Presence</td>
<td>0.661446</td>
<td>0.886382</td>
<td>0.042473</td>
<td>0.837164</td>
</tr>
<tr>
<td>Trust</td>
<td>0.535672</td>
<td>0.821271</td>
<td>0.367410</td>
<td>0.710740</td>
</tr>
<tr>
<td>User Experience</td>
<td>0.759978</td>
<td>0.904738</td>
<td></td>
<td>0.842131</td>
</tr>
</tbody>
</table>

**Content Validity**

In content validity we are looking for a way to make sure that the questionnaire measures are drawn from all potential measures of material under investigation (Straub, 1989). To have a high content validity we undertook a substantial literature review in the area of social commerce and piloted it on 25 students. Moreover some of the constructs – perceived usefulness, trust and intention to buy – are taken from existing literature and have been frequently shown to demonstrate evidence of strong content validity. The literature source for each construct, which has been used in the literature review, is indicated in Table 2.0. Noticeably, constructs drew their items from different validated sources, which improved the validity of this research in regards to the measurement of the constructs. However, we also considered Face validity of the research by simply showing the survey to untrained people to make sure questions are understood by respondents. We conducted the main survey after these steps.

**Construct Validity**

Construct validity can be checked by discriminant and convergent validity (Chin and Salisbury, 1997). To test convergent validity, as mentioned above, we considered AVE, which should be at least 0.50 (Wixom and Watson, 2001). We used PLS as recommended by Gefen and Straub (2005). According to the results of PLS quality criteria overview, AVE in all constructs is more than .50 and we conclude that this research achieved this criteria.
As Gefen and Straub (2005) recommend we performed PLS for discriminant validity. According to Gefen and Straub (2005), there is not an exact threshold to apply for discriminant validity but they presented an example: “if one of the measurement items loads with a 0.70 coefficient on its latent construct, then the loadings of all the measurement items on any latent construct but their own should be below 0.60”. This is achieved in this study and we can conclude that this model has discriminant validity.

Table 5
Path coefficients (Mean, STDEV, T-Values)

<table>
<thead>
<tr>
<th>Path Coefficients</th>
<th>Original Sample (O)</th>
<th>Sample Mean (M)</th>
<th>Standard Deviation (STDEV)</th>
<th>Standard Error (STERR)</th>
<th>T Statistics (O/STERR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity -&gt; Trust</td>
<td>0.185494</td>
<td>0.184845</td>
<td>0.073419</td>
<td>0.073419</td>
<td>2.526497</td>
</tr>
<tr>
<td>Learning &amp; Training -&gt; Intention to buy</td>
<td>0.143133</td>
<td>0.141317</td>
<td>0.070382</td>
<td>0.070382</td>
<td>2.033652</td>
</tr>
<tr>
<td>PEOU -&gt; Intention to buy</td>
<td>0.295739</td>
<td>0.297004</td>
<td>0.079074</td>
<td>0.079074</td>
<td>3.740017</td>
</tr>
<tr>
<td>PEOU -&gt; Learning &amp; Training</td>
<td>0.172742</td>
<td>0.184891</td>
<td>0.086062</td>
<td>0.086062</td>
<td>2.007183</td>
</tr>
<tr>
<td>PEOU -&gt; PU</td>
<td>0.245415</td>
<td>0.253646</td>
<td>0.074447</td>
<td>0.074447</td>
<td>3.296512</td>
</tr>
<tr>
<td>Social Commerce Components -&gt; Familiarity</td>
<td>0.368791</td>
<td>0.377567</td>
<td>0.064606</td>
<td>0.064606</td>
<td>5.708303</td>
</tr>
<tr>
<td>Social Commerce Components -&gt; PEOU</td>
<td>0.311734</td>
<td>0.319426</td>
<td>0.067185</td>
<td>0.067185</td>
<td>4.639912</td>
</tr>
<tr>
<td>Social Commerce Components -&gt; Social Presence</td>
<td>0.145980</td>
<td>0.164852</td>
<td>0.077400</td>
<td>0.077400</td>
<td>2.186048</td>
</tr>
<tr>
<td>Social Presence -&gt; Trust</td>
<td>0.118025</td>
<td>0.115127</td>
<td>0.068515</td>
<td>0.068515</td>
<td>2.122620</td>
</tr>
<tr>
<td>Trust -&gt; Intention to buy</td>
<td>0.287060</td>
<td>0.275883</td>
<td>0.067301</td>
<td>0.067301</td>
<td>4.265304</td>
</tr>
<tr>
<td>Trust -&gt; PU</td>
<td>0.391270</td>
<td>0.389676</td>
<td>0.079625</td>
<td>0.079625</td>
<td>4.913914</td>
</tr>
<tr>
<td>User Experience -&gt; PEOU</td>
<td>0.409555</td>
<td>0.407419</td>
<td>0.070999</td>
<td>0.070999</td>
<td>5.768448</td>
</tr>
<tr>
<td>User Experience -&gt; Social Presence</td>
<td>0.131016</td>
<td>0.126807</td>
<td>0.087312</td>
<td>0.087312</td>
<td>1.500553</td>
</tr>
<tr>
<td>User Experience -&gt; Trust</td>
<td>0.011920</td>
<td>0.002238</td>
<td>0.072146</td>
<td>0.072146</td>
<td>0.165224</td>
</tr>
</tbody>
</table>
Results

The test results are shown in Fig 2.0. The test performed by SmartPLS software, which is software for PLS method.

The model validity is assessed by R square value and the structural paths (Chwelos, et al., 2001). To do this we performed bootstrapping to test the statistical significance of constructs path coefficient by means of t-tests. In this model user experience path coefficients of its causal links with social presence and trust are not significant. It means user experience is not influencing social presence and trust in this model. However, all of other constructs are significant and the finding supports their hypotheses at p<0.05 level. This is indicated in Table 5.0 with the t- values.

In the Table 4.0 the R squares has been shown and indicates that almost 40% of the variance in the intention to buy was accounted by the constructs in the model. It means intention to buy was, as hypothesized, affected by PU, PEOU, learning and trust.

Trust also has a good R square as mentioned in previous researches (Hajli, 2012; Gefen et al., 2003). The results show that 37% of the variance in this construct was accounted by familiarity, social presence and PEOU. The other construct with good R square is PU, which almost 33% of its variance was accounted by trust and PEOU in the model. PEOU has the R square of 30%, which accounted by s-commerce components and user experience.

![Figure 2. PLS structural model](image-url)
Discussion

The aim of this paper is to reach a better understanding of consumer behaviour with the emerge of s-commerce and platforms that can help user’s for more e-commerce adoption. We specifically investigated the adoption of B2C e-commerce by means of TAM and SCAM. The present research is based on existing theories on information systems, marketing, psychology and economics to build an integrated model for e-commerce adoption with the emergence of Web 2.0 applications such as social media.

In the proposed model H8, H9, H14 predict that SCCs, the key construct of this research, will increase familiarity, social presence and PEOU and there would be a direct effect on them. The model is presented on Fig 3.0.

![Figure 3. Final model](image_url)

Trust is an on-going issue in e-commerce and now in social commerce (Hajli, 2012). This concern is of rising importance among consumers as social commerce platforms like Facebook commerce expand (Grazioli and Jarvenpaa, 2000). The results support the previous researches on the rule of trust on adoption process (Hajli 2012; Gefen et al., 2003).

The role of IS constructs on predicting customers behaviour as mentioned by others (Pavlou and Fygenson, 2006; Hajli 2012) is emphasizing in this research once again. The other concluding mark of this study is the increasing attention to the s-commerce (Baird and Parasnis, 2011; Weisberg, Te'eni and Arman, 2011; Hajli, 2012).

Key Results

This research investigates the role of s-commerce components and the emergence of
Web 2.0, which affect consumer behaviour by the new platforms. These platforms are mostly growing by the development of SNSs. The aim was to propose an integrated model based on TAM, SCAM and other constructs that introduced by different authors. We applied SCCs and the effect of s-commerce, which is a new framework to date of this research.

The results of researches (Pavlou and Fygenson, 2006; Hajli, 2012) investigation on B2C highlighted the importance of IS and IT in consumer behaviour in online environment. This research provides further evidence that IT adoption and IS theories having a fundamental role in predicting customer behaviour. This also highlights the importance of expanding and linking researches in different disciplines like IT, IS marketing and psychology. Moreover, the Web 2.0 application and advancement of e-commerce make closer IS and marketing and the role of B2C researches.

**Implementation for IS Researchers**

Studying and examining the impact of SNSs and s-commerce components, which respondents interact not only with a scholar (Cooke and Buckley, 2008) but also they cooperate e-vendors and each other is a new opportunity for IS researchers. This occasion increases our ability to manage multiple sources of data, which preferred to traditional data collection (Cooke and Buckley, 2008).

As we mentioned before the key constructs of the model (PEOU, PU, IU, Trust, etc) come from the domain of information systems. This is confirming the important role of IT in predicting customer behaviour in an online environment. As others stated (Pavlou and Fygenson, 2006), the impact of IT constructs highlight that IS can be a reference discipline for online customer behavior in marking researches. Customer behaviour is widely studied by economic and marketing theories, but the results of research (Gefen et al., 2003; Pavlou and Fygenson, 2006) shows that the constructs in ICT and IS has a crucial impact on customers behaviour. And this impact is much more than before with the emergence of Web 2.0 applications and new streams such as social commerce. This is also the motivating power for innovation. Customer behaviour in an online environment is important in management studies. The existing literature in the study of customer behaviour is neglecting the role of ICT as customers today are engaging themselves in IT from their smart phones to their social life in cyber space and their interactions with IT in their daily lives. This is clear with the growth of SNSs.

**Implications for e-commerce Research**

E-commerce studies mostly use two main streams, TRA and TAM and have not used some constructs such as SCCs and learning and training. This research concentrated mostly on the role of s-commerce and its components on costumer’s behaviour and introduced an
integrated model.

Considering SCCs in B2C e-commerce adoption not only extent the e-commerce adoption models and give a more holistic understanding of the behaviour of online customers, but highlights the importance of social aspect of online environment in adoption processes. This is a new integrated model in e-commerce adoption to data. This also improves the predictive power of e-commerce adoption model. Because this model considers main aspects related to the adoption process of e-commerce.

**Practical Implications**

As we can see from the results, SCCs, SNSs and the platforms introduced by s-commerce can increase familiarity of the consumers. By this trust will increase in users and consequently intention to use a system will be achieved in users, which highlight the role of s-commerce components in e-commerce adoption. Accordingly, SCCs will increase PEOU in the consumers, which consumers will receive more usefulness and their intention to buy will increase.

In the managerial perspective, businesses are getting aware of the importance of SCCs and try their best to catch up the train (Baird and Parasnis, 2011). This is confirmed in this research that SCCs have enough influence in the consumer’s attention to increase intention to buy a product online. Businesses should see this as an emerging opportunity to retain and attract new customers (Baird and Parasnis, 2011), which can create better CRM in businesses.

**Conclusion**

The Web 2.0 applications will continue to grow and enable scholars to explore the fast changing social surroundings by innovative ways (Cooke and Buckley, 2008) and improve e-commerce adoption or s-commerce adoption. In the new business environment of content generation by users, as indicated in the model trust will increase, users perceive more usefulness and e-commerce adoption will improve in customer level.

As documented that trust is a key factor to enable e-commerce (Gefen and Straub, 2003), the results of this research at B2C clearly validate that trust is still a central factor, which strong enough affect intention to buy and PU at consumers.

On the other side of the results from the model, SCCs increase user’s familiarity and trust, which will affect intention to use in users. This result was shown in other researches as well that SNSs can play an important role in today’s cyber market (Weisberg, Te'eni and Arman, 2011).

Forums and communities as a key component of SCCs have strong affect on s-commerce. Additionally, businesses need match their structure with the new environment that social media is growing (Hajli, 2012).
This research with a systematic approach, based on widely accepted theories such as TAM introduced an integrated model to have a better understanding of online customer behaviour. This construct has been used by many researchers and in this study, they were integrated by SCCs and some new constructs. The results confirm the recommendation of other researches (Pavlou and Fygenson, 2006) to use IS on the study of online customer behaviour. The results of this research from a B2C level are valuable as there is not enough research on that.

**Limitations and Future Research**

There may be many other issues affecting e-commerce adoption, which we use some aspect with strong impact. However, the focus of this survey was on some crucial aspects in social commerce. Hence, as this research has high reliability and good validity in proposed model, it could provide a useful tool for academics and practitioners.

In regard to trust as a main construct in proposed model, it is important to mention that there are many issues around consumer trust (Geffen and Straub, 2004). For example, we must consider the issue of how the vendor is to trust consumer transactions. The advent of e-commerce has created an opportunity for developing new forms of deception (Grazioli and Jarvenpaa 2001, 2003).

This is research conducted mostly in the UK and it should be extended to other regions. It can be a future direction for this research. We also recommend the model with each s-commerce components should be considered. Some components might have more impact such as communities and social media.

Moreover, a follow up study for rejected hypotheses can be useful to see why this constructs, which are important could not be supported by survey. A follow up interview is recommended.

**References**


