

# Does Change of Cultural Environment Change Attitudes towards e-Commerce? New Research Method Investigating the Effect of Culture on e-Commerce Acceptance

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**Abstract**—Nowadays it seems that businesses have no other choice but to incorporate the e-commerce platform into their business operations if they wish to have unrestricted access to beyond national borders markets. Before they will do so they have to be careful as researchers revealed that due to culture and its effect on attitudes towards e-commerce some consumers willingly participate in online shopping environment while others seem to reject this convenient form of shopping.

In the present-day global economy however, world researchers cannot follow traditional approaches and definitions of culture; instead they have to recognise many new multicultural aspects and dimensions and the effects of these on consumer processes. Consumers and their attitudes it seems are not only influenced these days by their native culture, but also by the culture where they temporarily reside. Therefore researchers are driven to provide comprehensive solutions to the challenges raised by globalisation, and to illustrate advanced research methods of cultural influences on behaviour. Hence, by investigating whether any change of cultural environment results in a change of consumer attitudes towards e-commerce, this research project aims to offer a fresh approach and method, which might guide and inform us in the face of such emerging challenges.

**Index Terms**—E-commerce acceptance, culture, TAM.

## I. LITERATURE REVIEW

Originally designed for data exchange, the Internet has now developed into a complex system for generating and facilitating all major business activities and a point of interest for all parties within the supply chain. Suppliers, retailers, and consumers seem to recognise that the Internet generates indispensable opportunities not only for effortless product search and information, but also to successfully finalise transaction electronically through so called e-commerce. As a result, e-commerce has been identified as the world's fastest growing marketplace, continuously increasing in its volume, while traditional businesses face the consequence of a falling global economy. It is suggested that the growth of e-commerce is a consequence of its many benefits over traditional shopping, outperforming in these hectic times the much more inconvenient restrictions of brick-and-mortar retail outlets. Increasingly businesses want to take part in this form of trading which is considered to be a 'win-win' situation for all parties in the supply chain. Not all companies it seems though can achieve benefits when they opt for

e-commerce. Some consumers seem more likely than others to accept the lifestyle change of shopping online.

To date, researchers have run a number of research projects investigating the reason for the apparent discrepancy in consumers' willingness to join the e-commerce shopping environment. Based on those findings the conclusion emerged that consumers not only realise the benefits of e-commerce, but also are concerned about the risk attached to this form of shopping. Hence, researchers stress that the risk associated with the intangible e-commerce environment cannot be ignored as it could be the key to consumer attitudes towards e-commerce [1].

At the present time however, despite all the attention and effort put into reducing risk perception associated with e-commerce, current statistics show that a discrepancy in frequency of use of e-shopping still exists. What is more, such a discrepancy is especially visible across the countries where e-businesses are operating.

In pursuit of further evidence into consumers' attitudes towards e-commerce, research reveals that this inconsistency across countries is most likely due to misunderstandings related to different cultural perceptions and requirements, which appear to be directly linked to consumers' risk perception. The evidence from the research by [2] for example proved that the culture has a direct effect on consumers' e-commerce acceptance decisions. This seems to be confirmed by [3] who found that culture has an effect on consumers' attitudes towards online shopping. All of this leads to the conclusion marked by [4] who said that 'national culture can affect consumers' behaviour in online shopping situations'.

Hence, it appears that it is culture that affects consumers' attitudes towards e-commerce and their willingness to shop online. Thus before businesses decide to incorporate e-commerce into their business operations, it is a key component in their decision that they make an effort to understand the cultural requirements of the target market and adjust e-strategy accordingly. As any cross-cultural miscommunication in cyberspace may leave businesses cut off from one of the most important online markets in the world.

In order to prevent businesses being 'cut off' from the fastest growing marketplace, researchers now more than ever aim to understand consumer culture and its effects on attitudes towards e-commerce. To do so they apply a number of different approaches originating in a number of disciplines that takes an interest in culture. Nowadays however, in the era of globalisation and mass migration researchers cannot follow traditional and well established approaches

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investigating culture and its effect on e-commerce acceptance. They have to realise that human nature is everywhere the same and everywhere different and thus the culture 'can be bought, sold and worn like a loose garment'[5], which seems to be especially true in the globalised world. Consequently, researchers have to develop new research frameworks to acknowledge the fact that consumer culture may change and so may its effect on consumers' attitudes, not only in the traditional physical environment but increasingly in the virtual environment that renders national boundaries less meaningful.

## II. METHODOLOGY

Nowadays, it seems to be obvious that globalisation has come to represent a powerful force, causing e-businesses to take into account not only consumers influenced by their native culture but also by culture of their temporary residence. Hence, understanding the effect of culture on consumer attitudes towards e-commerce is increasingly difficult, with the possibility of change of culture seeming to determine attitudes towards e-commerce, and hence newly adopted culture taking effect when consumers temporarily reside outside their home nation. Thus nowadays it appears to be crucial to investigate whether consumers who are encouraged to mingle and migrate from country to country are subject to any influence of culture from their temporary country of residence, and if so, what the effect of such an influence might have on their attitudes towards e-commerce acceptance.

In order to set up such an investigation there is a need to draw a new research framework originating in consumer research, and especially within Consumer Culture Theories (CCT), which focuses on socio-cultural change of consumer consumption patterns. More specifically, this research project will follow the approach of conducting cross-cultural research marked by [6]. According to their method and findings, in cross-cultural studies the priority is given to define the relevant unit of analysis, or cultural group to be studied as well as its cultural context. After the identification of the unit of analysis along with its cultural context these researchers highlight the importance of evaluation in research design. They suggest comparative examination of attitudes of consumers before and after migration or movement and/or exposure to another cultural setting.

Hence, for the purpose of this research project, a sample population of immigrants based in the UK was identified. These individuals grew up in a non-British culture and at the time of the study were residing in the UK, espoused to British culture and its values. In order to assess attitudes towards e-commerce, a Technology Acceptance Model (TAM) was adopted, which was applied to a number of studies investigating the effect of culture on e-commerce acceptance (see [7], [8]). On the basis of TAM a population of consumers' attitudes is assessed. The attitudes are termed: perceived usefulness (PU); perceived ease of use (PEOU); and subjective norms (SN); all of which attitudes are tested in the model, to attempt to determine intention to use e-commerce (IUSE).

Following direction marked by [9], the above-mentioned attitudes towards e-commerce acceptance are assessed from two cultural perspectives: culture in which respondents grew up (culture before movement) and British culture, culture where they temporarily reside (culture after movement). Such data is simultaneously compared and contrasted in order to reveal whether or not consumer's culture has determined attitudes towards e-commerce acceptance and whether such attitudes can change when and while consumers change their cultural environment. Research hypothesis and research model are listed in Table I.

TABLE I: RESEARCH HYPOTHESIS AND RESEARCH MODEL

<b>H1:</b> Perceived Usefulness influences consumers' Intention to Use e-commerce
<b>H2:</b> Perceived Ease of Use influences consumers' Intention to Use e-commerce
<b>H3:</b> Subjective Norm influences consumer's Intention to Use e-commerce.
<b>Research Model</b>
<b>H1 'culture before movement' vs. H1 'culture after movement'</b>
<b>H2 'culture before movement' vs. H2 'culture after movement'</b>
<b>H3 'culture before movement' vs. H3 'culture after movement'</b>

## III. DATA ANALYSIS

In order to test the newly designed research model, data was collected from a sample population of immigrants currently residing in the UK. The questionnaire consists of two sections; a demographic part and a section examining respondents' attitudes towards e-commerce from two cultural perspectives; culture before movement and culture after movement.

Data was collected in three separate ways. First, a field version of the questionnaire was distributed at the education and training centres as well as workplaces employing mainly immigrants. Second, an online platform was provided to sample international undergraduate and postgraduate university students. And finally, data was collected through the use of the social media website, Facebook.

Overall 160 responses were received, representing 39 residents of other countries then residing in the UK. The demographic characteristics of respondents are presented in Table II.

TABLE II: DEMOGRAPHIC CHARACTERISTICS

	Value	Frequency	Percent
<b>Gender</b>	Male	74	46.3
	Female	86	53.8
<b>Age</b>	16/23	48	30.0
	24/34	86	53.8
	35/44	21	13.1
	45/59	4	2.5
	Above 60	1	0.6
<b>Length of residence in the UK</b>	Less than 3 months	23	14.4
	3/6 months	12	7.5
	6/12 months	29	18.1
	More than 1 year	96	60.0
<b>Reason for migration</b>	Work	56	35.0
	Education	87	54.4
	Work and Education	13	8.1
	Other	4	2.5

In order to analyse the data and assess psychometric

properties of the scale, reliability and validity, and path coefficients SPSS Statistics 21 and SPSS Amos 21 are used.

#### IV. DATA ANALYSIS RESULTS

In this research project, in order to confirm the scale validity and reliability, two models are built: 'culture before movement', the model assessing consumer's attitudes towards e-commerce influenced by the culture in which respondents grew up and 'culture after movement', the model assessing attitudes towards e-commerce affected by culture in which they temporarily reside. Key statistics are summarized in Table III and Table IV.

TABLE III: VALIDITY AND RELIABILITY CHECKS - 'CULTURE BEFORE MOVEMENT'

Culture before movement	Cronbach's Alpha	Average Variance Extracted	Composite Reliability
PU	0.927	0.809	0.932
PEOU	0.898	0.839	0.746
IUSE	0.750	0.645	0.779
SN	0.862	0.793	0.859

TABLE IV: VALIDITY AND RELIABILITY CHECKS: 'CULTURE AFTER MOVEMENT'

Culture after movement	Cronbach's Alpha	Average Variance Extracted	Composite Reliability
PU	0.927	0.714	0.877
PEOU	0.867	0.603	0.785
IUSE	0.738	0.532	0.645
SN	0.877	0.810	0.874

Cronbach's Alpha test by SPSS Statistics is used to confirm the reliability of variables. In both studies the measured items meet the guidance exceeding the required 0.70 level and therefore confirm accurate reliability level of the measured items.

TABLE V: INDICES OF FIT

Goodness- of fit indices	Desired values	Native culture	Non-native culture
Absolute Fit Indices			
Chi- Square	$p > 0.50$	211.928	253.820
Df	$\geq 0$	50	51
$\chi^2/df$	$< 3.0$	4.239	4.977
GFI	$\geq 0.90$	0.846	0.821
AGFI	$\geq 0.09$	0.719	0.680
REMSEA	$\leq 0.80$	0.143	0.158
Incremental Fit Indices			
CFI	$\geq 0.90$	0.886	0.860
TLI	$\geq 0.90$	0.823	0.786
Parsimonious Fit Indices			
PNFI	$\geq 0.50$	0.551	0.545
PGFI	$\geq 0.50$	0.465	0.460

Additionally, composite reliability (CR) and average variance extracted (AVE) are performed to validate the

reliability of each study. Results show that AVE values exceed recommended value of 0.50 in both models tested; 'culture before movement' and 'culture after movement'. Furthermore in terms of CR the values for both 'culture before movement' and 'culture after movement' models for all constructs are greater than the acceptable value of 0.60 [10] and in most cases the values exceed the recommended minimum value of 0.70.

Furthermore, in order to determine the model's fitness, three indices; absolute fit, incremental fit, and parsimonious fit are examined (see Table V.)

As it can be seen from the table above, not all fitness indices match desired values. However as most of them are in the short range of desired values it was decided to run SEM and test path coefficients in both models, 'culture before movement' and 'culture after movement' in order to test research methodology.

SPSS Amos was used to test stated hypotheses. In order to examine path coefficients cross-products were created by multiplying indicators of each construct. Those cross-products were then used to examine the path coefficients of the causal relationships between constructs in each study. By these means it was possible to investigate to what extent customers' attitudes towards online shopping are affected by their native or non-native cultural values.

Hence for the purpose of this study two structural models 'culture before movement' and 'culture after movement' were built in order to validate or disprove stated hypotheses. The summary of path coefficients in the interaction models for both studies is shown in the Table VI below.

TABLE VI: PATH COEFFICIENT

				'Culture before movement'		'Culture after movement'	
				Path coefficient	$p$	Path coefficient	$p$
H1	IUSE	<---	PU	0.262	0.004	0.371	***
H2	IUSE	<---	PEOU	0.417	***	0.448	***
H3	IUSE	<---	SN	0.327	***	0.301	***

As can be seen from TABLE VI, in the 'culture before movement' model, two hypotheses, H2 and H3 are supported at  $p < 0.001$ . Consequently from the perspective of culture in which consumers grew up, perceived ease of use and subjective norms influence consumers' e-commerce acceptance decision. On the other hand, H1 appears to be rejected as the path coefficient between perceived usefulness and intention to use e-commerce appears to be insignificant at  $p < 0.001$ .

In the 'culture after movement' model all three hypotheses are supported at  $p < 0.001$ . Hence it can be said that consumers' attitudes in terms of perceived usefulness, perceived ease of use, and subjective norms, all influence the consumers' e-commerce acceptance decisions in the culture where respondents temporarily reside.

Consequently, while comparing those two models, 'culture before movement' and 'culture after movement', it appears obvious that there is a change in consumers' attitudes towards e-commerce. Consumers have more favourable

attitudes towards e-commerce while being influenced by the culture in which they temporarily reside than by the culture in which that grew up. This is especially true in terms of consumers' perception of e-commerce usefulness.

## V. CONCLUSION

Understanding the influence of culture on business operations has been one of the most enduring and challenging components of Information Systems research (IS). Nowadays IS researchers have to recognise the new challenge brought by globalisation and mass migration and thus they develop new research methods to study culture, acknowledging the fact that culture may change once the consumer changes his or her cultural environment.

This research presents the new research design, marking the direction for future studies. Through this new research methodology it has so far been possible to demonstrate successfully those consumers' attitudes towards e-commerce are not only influenced by the culture in which they grew up, but also by the culture of their current or temporary residence. What is more, the research revealed that consumers have more positive attitudes towards e-commerce from the perspective of the culture in which they temporally reside than from the perspective of the culture in which they grew up. This is especially true in terms of consumer perception of e-commerce usefulness. Consequently, based on the findings of this research, it can be concluded that there is a change in consumers' attitudes towards e-commerce caused by a change of cultural environment. Thus researchers cannot investigate the effect of culture on consumers' attitudes towards e-commerce from one cultural perspective only. They have to distinguish from which cultural perspectives consumers' assess their attitudes towards e-commerce, as it is obvious that a change in cultural environment results in a change of culturally determined attitudes towards e-commerce.

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