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The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in Russia

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Abstract

This study investigated the influence of national culture on the consumer acceptance of e-commerce in Russia. This study suggests that behavioral patterns are not universally held in different cultures, the facts define national cultural values as an important set of individual difference moderators in the adoption of technology. Hofstede's cultural dimensions, power distance, individualism, masculinity, uncertainty avoidance, and long-term orientation were taken as moderators. These cultural aspects of masculinity/femininity, individualism/collectivism, power distance, and uncertainty avoidance were included as moderators in an extended model of technology acceptance. Our model of consumer acceptance of e-commerce has considered the impact of culture on the perceived usefulness, perceived ease of use, trust and intention to use.

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Consumer acceptance; E-commerce; National cultural value; Cultural dimension

1. Introduction

In an increasingly global business environment, there is a growing need to utilize information technology to achieve efficiencies, coordination, and communication [1]. This presupposes the diffusion and use of technologies across national boundaries. However, cultural differences between countries impact the effectiveness and efficiency of international IT deployment. Motivated by research that suggests that behavioral models do not universally hold across cultures [2], we examine how national culture may influence customer acceptance of e-commerce. While national culture is a macro-level phenomenon, acceptance of technology by end-users is an individual-level concern. Thus, we take a cultural psychology and psychological anthropology perspective that assesses cultural traits by personality tests at the individual level of analysis [3].

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A few studies have focused on the effects of national culture on customer trust or perceived risk in e-commerce. Accordingly, our purpose was twofold. The first is to verify the consumer acceptance model of e-commerce developed by advanced countries' researchers when applying it to a developing country. The second is to explore the effects of national culture in the consumer e-commerce acceptance model that includes trust and the variables of perceived usefulness and perceived ease of use. To achieve these objectives, we examined consumer acceptance of e-commerce in Russia with the research model adapted from the study of Gefen et al. [4] and incorporating Hofstede's cultural dimensions as moderators in the model. The national cultural values such as masculinity/femininity, individualism/collectivism, power distance, and uncertainty avoidance are incorporated into the model as moderators of the technology acceptance relationships.

2. Theoretical Background

2.1. National Cultural Value

Hofstede [5] defines culture as "the collective programming of the mind which distinguishes the members of one human group from another." He also proposes four widely cited dimensions of national culture: individualism/collectivism, power distance, uncertainty avoidance, and masculinity/femininity. Later long-term orientation was added as a fifth dimension [6].

With globalization and advances in communication technology, people come from different cultural backgrounds travel and interact with each other easily so that the original cultures are contaminated and changed [7]. However, these critics did not provide any empirical evidences. On the contrary, many scholars perceive substantial relevancy in national cultural theories in explaining human behavior, including Hofstede [8] and Schwartz [9]. They point out that delimiting subcultural groups in a nation is almost impossible. Nation is a meaningful proxy for culture because within country commonalities and between country differences do exist. In addition, culture has centuries-old roots and thus changes very slowly. Therefore, a need still exists to study culture on national basis.

2.2. Consumer behavior

Hofstede defines culture as shopping in online environments is a fundamental aspect of consumer behavior and is influenced by complex and varying psychological processes [10]. For example, consumers shop to pursue a variety of goals, ranging from basic functional drives such as satisfying hunger to more complex motivations such as enhancing self-esteem, interacting with significant others, or just dispelling boredom [11]. Recent years have seen increased interest in the influence of culture on consumer behavior as well as increased research [12]. In this study we review the influence of national culture on the consumer acceptance of e-commerce in Russia.

2.3. Technology Acceptance Model

Technology Acceptance Model [13] suggests that perceived ease of use influences perceived usefulness and, in turn, both beliefs influence the behavioral intention to use certain IT. There, in its initial conceptualization, makes no attempt to account the social environment influence on behavioral intentions. Since culture is a collective phenomenon [14], one would expect that it is primarily manifested through the medium of social factors that affect the adoption of technology. Research in the field of social information processing [15] suggests that the attitudes, beliefs and behavior of an individual depends on their social context, and that individuals will learn about the behavior based on the study of information and the social environment to which they belong. It is obvious that culture plays a key role in determining the social context.

2.4. E-commerce in Russia

E-commerce in Russia as the basis of electronic business at the current stage contains a number of issues and problems, so the analysis and the identification of its structural elements, the basic trends, and patterns of development of two markets is a prerequisite for the further development of Russian business as a whole. In 2014, only 20% of the Russian population regularly purchased goods on the Internet. This indicator is closely linked to the percentage of Internet penetration in the country. In Russia, the number of Internet users in 2014 was 85 million that amounted to 59.2% of the total population. According to the experts of the company J'son & Partners Consulting, a compound annual growth rate (CAGR) of the Russian B2C e-commerce in 2009-2014 was equal to 42.5%. In 2013-2018 CAGR is expected to reach 7% per year. It is predicted a decline in the market in 2015 by 5% due to the severe macroeconomic situation. Then a slight recovery is expected in 2016 and a growth of the market by more than 20% by 2017.

3. Research model and hypotheses

To explore the effects of national culture on consumer e-commerce acceptance, our research model included both the consumer e-commerce acceptance model together with variables of perceived usefulness (PU) and perceived ease of use (PEOU) and incorporated Hofstede's cultural dimensions of power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAI) and long-term orientation (LTO) as moderators in the model. Followings are the hypotheses of this study.

- H1a: There exist a positive relationship between trust and intention to use e-commerce websites.
- H1b: There exist a positive relationship between trust and perceived usefulness of e-commerce websites.
- H2: There exist a positive relationship between perceived usefulness and intention to use e-commerce websites.
- H3a: There exist a positive relationship between Perceived ease of use and intention to use e-commerce websites.
- H3b: There exist a positive relationship between perceived ease of use and trust of using e-commerce websites.
- H3c: There exist a positive relationship between perceived ease of use and perceived usefulness of e-commerce websites.
- H4a: Higher uncertainty avoidance (UAI) culture negatively affects users' trust for e-commerce website.
- H4b: Higher uncertainty avoidance (UAI) culture negatively affects the users' perceived ease of using e-commerce websites.
- H5a: Higher power distance culture positively affects user's perceived ease of using of e-commerce websites.
- H5b: Higher power distance culture positively affects user's trust for e-commerce websites.

4. Research methodology

We wished to verify the validity of the consumer acceptance model of e-commerce that was developed for advanced countries' research for use in a developing country; we selected Russia as our survey area. We also wished to explore the effect of national culture on the model. For this, we employed the Mark Srite and Elena Karahanna approach [16], which assessed cultural traits at the individual level of analysis using Hofstede's cultural dimensions. Perceived ease of use, perceived usefulness, and behavioral intention to use were measured using scales adapted from Davis [17]. The cultural values of individualism/collectivism, uncertainty

avoidance, power distance, and masculinity/femininity were measured using scales derived from Hofstede (1980) and Dorfman and Howell [18]. Subjective norms were measured by examining normative beliefs for the following referent groups: family, friends, professors, and classmates at the university.

5. Results

Structural Equation Model was used to validate the research model, while PLS-Graph Version 3.0 was used to perform the analysis. Although the LISREL technique is widely used for the analysis of empirically based studies, PLS is more appropriate in analyzing the moderating effects of our study. The constructs in this research model were evaluated in terms of reliability, convergent validity, and discriminant validity. Reliability was examined using the composite reliability (CR), and all of these values were greater than 0.825, well above the common acceptance level [19]. Convergent validity was evaluated for the measurement scales using two criteria [19]. As listed in Table 3, all loading items were higher than 0.734, and all AVEs were greater than 0.612, signifying desirable convergent validity of the measurement. For satisfactory discriminant validity, the AVE from the construct should be greater than the variance shared between the construct and other constructs in the model [19]. The AVE for each construct was larger than the correlation of the construct with all other constructs in the model.

Table 1. Descriptive statistics of Research model

Constructs	Items	Factor loading	Std. error	t-value	p-value	AVE	CR	CA																																																																																																					
Intention to use	IUSE1	0.905	0.015	59.546	0.000	0.821	0.902	0.782																																																																																																					
	IUSE2	0.908	0.013	71.161	0.000				Power distance	PD11	0.762	0.079	9.602	0.000	0.612	0.825	0.711	PD12	0.846	0.051	16.718	0.000	PD13	0.734	0.097	7.577	0.000	Perceived ease of use	PEOU1	0.833	0.030	27.389	0.000	0.686	0.897	0.847	PEOU2	0.859	0.024	36.023	0.000	PEOU3	0.779	0.029	26.491	0.000	PEOU4	0.840	0.038	22.188	0.000	Perceived usefulness	PU1	0.846	0.028	29.909	0.000	0.751	0.923	0.889	PU2	0.906	0.011	81.561	0.000	PU3	0.848	0.018	46.572	0.000	PU4	0.865	0.017	51.446	0.000	Trust	TRS1	0.900	0.013	68.419	0.000	0.818	0.931	0.889	TRS2	0.914	0.015	60.926	0.000	TRS3	0.899	0.021	43.330	0.000	Uncertainty avoidance	UAI1	0.826	0.050	16.517	0.000	0.807	0.926	0.883	UAI2	0.927	0.022	42.871	0.000	UAI3
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6. Conclusion

This study investigated the influence of national culture on the consumer acceptance of e-commerce in Russia. It suggests that behavioral patterns are not universally held in different cultures. The facts define national cultural values as an important set of individual difference moderators in the adoption of technology. Hofstede's cultural dimensions were taken as moderators. These cultural aspects of masculinity, femininity, individualism, collectivism, power distance, and uncertainty avoidance were included as moderators in an extended model of technology acceptance. Our model of consumer acceptance of e-commerce has considered the impact of culture on the perceived usefulness, perceived ease of use, trust, and intention to use with the data collected in Russia. We hope that our study provides a general framework and lays the foundation for further research in this area.

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