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Gender-Based iTrust in E-Commerce: The Moderating Role of Cognitive Innovativeness

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Abstract: Despite the extensive academic interest in e-commerce, cognitive innovativeness in e-commerce context has been neglected. This study focuses on the moderating role of consumer cognitive innovativeness on the influencing factors of interpersonal trust (iTrust) towards online purchase intention of new product in business-to-consumer (B2C) e-commerce. Data were collected in Australia from consumers who has had prior online shopping experience. Variance-based structural equation modeling such as partial least squares (PLS-SEM) is used to test the research model. The results show men and women have different perceptions of what is important to be provided by an online store to make a positive shopping experience. We highlighted that in-addition to the e-commerce web design aspects; the individual cognitive innovativeness can influence females more to purchase online. Practitioners should adjust their online business strategies, considering consumer cognitive innovativeness to enhance their e-commerce desirable outcomes. This means online business should not treat their consumers as a uniform group with a 'one-design-fits-all' web design strategy but need to consider the individual needs of their male and female consumers.

Keywords: e-commerce; cognitive innovativeness; gender; trust

1. Introduction

The key objective of an e-commerce website is to maintain efficient interaction and communication between consumer and online vendor to enhance consumer trust. Making consumers feel engaged and committed is essential to persuasive interaction. Persuasive technology defined by [1] "any interactive product designed to change attitude or behavior by making desired outcomes easier to achieve". Interaction within the persuasive technologies involves three elements: the source, the receiver, and the message [2]. The source attempts to induce the recipient to adapt to the context via messages. Concerning the business-to-consumer (B2C) e-commerce website the message form is characterised by consumer cognitive responses with the potential to influence consumer trust and subsequently purchasing intention [3]. Persuasive interaction requires web designers to clearly define the website's objectives. Considering the e-commerce sites, the persuasion objectives are to motivate their consumers' trust. The critical factor of persuasive design is establishing trust between the consumer and the Internet Vendor [4]. Therefore, the persuasive interaction involves the interpersonal trust in achieving the desired outcome. Gefen and Straub [5], define trust as "consumer trust in Internet vendors (e-Trust)". This study extends that definition to include consumers' trust in a B2C website, terming it consumer interpersonal trust (iTrust) in B2C e-commerce website. In doing so, this study embraces two broad online consumer trust-building foundation constructs, cognitive and affect-based

trust, as persuasive interaction approach of interpersonal trust between the consumer and the online vendor. The concept of online interpersonal trust has its origins in an e-commerce context, focuses on consumers trust in specific Internet vendor [6,7].

The user-friendliness of the website is vital to determining users' experiences and behavioural intentions, such that the influence of information content quality is stronger for websites offering tangible products e.g., electronics. According to Nielsen [8], "The first law of e-commerce is that if users cannot find the product, they cannot buy it either". When a consumer visits a website for the first time, the initial trust is primarily based on initial perceptions of the trust-related attributes of the website, such as the cognition-based aspects which are formed from quick cognitive cues or first impressions [9]. For example, visual design consists of graphical and structural factors that give consumers a first impression [9]. World Wide Web is now a highly cognitive loaded environment, and individuals manage the information processing through the use of cognitive maps [10]. Rosena and Purintonb [10] discussed the website as a cognitive landscape such as coherence and legibility (understanding the environment), complexity and mystery (exploring the environment) that tap into the individual's cognitive maps to understand a website that facilitates information processing. Prior research in the Information Systems (IS) and human-computer interaction (HCI) has investigated that website design features is a key factor towards e-retailer online trust. Most studies have examined the designers' perspectives of the web design features, such as color [3], layout and the use of images [11], and on users' perspective, such as gender [12].

In addition, consumer innovativeness has been investigated extensively in marketing and related fields [13]. Nevertheless, the consumer's level of innovative about different factors of technology acceptance remains unknown by the existing studies result. The concept of innovativeness indicates to "inter-individual differences that characterize people's responses to new things" [14]. Goldsmith and Foxall [14] identified three approaches to the conceptualization of innovativeness: behavioural, global trait, and domain-specific activity. Behavioural refers to the consumer innovators or non-innovators to adopt a new product or not. The global trait is a personality trait and the domain-specific activity denotes consumer's innovativeness within specific product categories. Behaviour results from some form of cognition [15]. In this study, our concern is with the behavioural perspective of consumer innovativeness, which identified a consumer as innovator or non-innovator depending on their purchase of a new product. People's perceptions may change their attitudes towards new products and ideas and their level of innovativeness [16]. In the context of e-commerce, how consumers react to innovation, specifically whether consumers adopt new products or not, depends on their online purchasing decision-making process and a variety of internal and external influences.

Consumer perception of information is directly related to cognition [17]. However, consumers' level of cognitive innovativeness plays a significant moderating role between the influencing factors (such as web aesthetics) and the consumers' online shopping experience [18]. Yet, the role of cognitive innovativeness on the use of e-commerce toward new product purchasing intention has not been examined.

Moreover, gender differences can be explained in cognitive and behavioural levels [19]. Previous research has revealed that gender plays a vital role in e-commerce platforms [20,21]. For-example, men are more focused on value gained through purchases and women focus on trustworthiness and ability to socially interact [22]. Due to the high level of uncertainty in the virtual world, individual trust is affected [23]. To better understand the gender orientation involved in online shopping, it is important to develop effective websites that will help businesses to attract and retain online consumers [20,21]. E-commerce web design is also important because businesses can lose fifty percent due to consumer unable to find the product what they want [24]. This means that the structural assurance of the website provided by the online store has a clear understanding of the reason why consumer believe that they should shop at one specific website but not others [25]. Although the significance of website visual design and gender differences is extensively recognized in online commerce, differences in gender-based consumer cognitive innovativeness regarding the characteristics

of online store influence new product purchasing intention are not well understood nor has the topic been sufficiently investigated.

This study addresses two research objectives. First, the study investigates the impact of gender on online shopping in Australia, especially keeping in perspective certain factors such as web accessibility, visual appearance and social influence. The influence of these factors with respect to iTrust (interpersonal trust) is analyzed. Second, the study explores how consumer cognitive innovativeness moderates iTrust factors towards 'new product purchase intention' focusing on the comparison between males and females. For the purpose of this study, 'purchase intention of new product' refers to any product not purchased online in the past.

Therefore, we focus on the following research question: Do the consumer cognitive innovativeness play an important moderating role between the factors that affect new product purchase intention? Moreover, what are the differences between males' and females' consumers? To answer this research question, first, we use prior literature on gender difference in online shopping, consumer innovativeness, and trust in e-commerce. Then we present a theoretically derived research model and present the hypotheses based on the research model. This is followed by a description of the research design and the results of hypothesis tests. Finally, the paper concludes with a discussion of these results.

2. Theoretical Background and Research Model

Previous research has identified various factors that contribute to online trust in e-commerce [26–30]. Web design elements such as colour and images [3,31] and accessibility including ease of use, usefulness, navigational design, information content and design [31–35], social presence [5] and social networking services [36] are significant initial factors in establishing consumer trust in B2C websites.

The transaction complexity in an e-commerce environment makes online purchasing decision more uncertain [33], and then the need for iTrust grows between online consumers and an online vendor. Interpersonal trust refers to the individual trust formed in another specific party [37]. In an e-commerce environment, the two participating parties are the online consumer and the online vendor [7]. The literature typically differentiates two broad foundations of interpersonal trust as cognitive and affect-based trust [38,39]. Cognitive-based trust is built on the available knowledge and good reasons for decision-making, whereas affect-based trust is built on the emotional ties between the parties [40]. Furthermore, website design factors such as information design, visual design (such as webpage background colors and product images) and navigation design should be used in e-commerce websites to build consumer trust and subsequently to enhance purchase intention [31,35].

In addition, cognitive innovativeness plays an important moderator role between factors such as usefulness, service excellence, and aesthetics for creating a more persuasive online shopping experience [18]. Consumer innovativeness refers to "consumers' adoption proneness to new products" [13]. In the context of B2C e-commerce, this means the tendency of buying new products after they appear online. Scholars have enriched consumer innovativeness by measuring its various dimensions. Such as, [41] distinguish 'cognitive' from 'sensory' innovativeness. In addition, online consumers with high cognitive innovativeness put more emphasis on usefulness and aesthetics design [18]. However, "consumers with low cognitive innovativeness lack ability, knowledge, and involvement with regard to new technology; they are insensitive to the effect of the new technology in accomplishing a task" [18].

To investigate the influence of consumer iTrust aspects towards new product purchasing intention, a model is proposed based on the S-O-R paradigm. The Stimulus–Organism–Response (S–O–R) model is used to identify both cognition and emotions-based factors. The S-O-R paradigm was first proposed by Mehrabian and Russell [42] in the context of environmental psychology. The paradigm suggests that stimuli from environments influence an individual's cognitive and affective reactions, which in turn lead to some response and behavior [42]. This paradigm was later extended and has been extensively applied to shopping outcomes of online stores. In the context of online retailing, the stimuli (S) are

defined as “the total sum of all the cues that are visible and audible to the online shopper”. For-example, “cognitive states are related to a consumer’s information processing, retention, and retrieval ability, whereas affective states describe the user’s emotional responses” [43]. These internal states (Organism) affect consumer response, such as purchase intention. Eroglu, Machleit [44] studied the effect of atmospheric cues as the stimuli that influence online consumer emotional and cognitive states and then contribute to the approach/response. Research also shows the need for stimulation is a significant component of innovativeness [13].

As discussed above, web design factors (such as website accessibility, visual appearance, and social influence) are viewed as the major determinants of consumer trust in an online store [40]. Furthermore, consumers’ cognitive innovativeness is a significant moderator between the influencing factors (such as perceived usefulness, perceived ease of use and perceived aesthetics, and perceived playfulness) in a sustainable relationship behaviour towards using a technology [18]. Thus, considering the B2C e-commerce websites, the various web design factors may stimulate positive cognitive innovativeness with consumers. Since the factors that influence how consumer adopts new technology, consumers’ cognitive innovativeness would moderate the impact of web accessibility, web visual appearance (color and product images), and social influence, on consumers’ iTrust toward new product purchase intention. Previous studies also showed the gender differences in making online purchases [45–47]. Moreover, gender differences can be explained in consumer cognitive and behavioural levels [19]. This study extends the work of Sohaib and Kang [40] by including the role of cognitive innovativeness as a moderator towards new product purchase intention focusing on the comparison between males and females.

The research model, Figure 1 integrates consumer cognitive innovativeness, as moderators on the relationship between various factors and the iTrust towards new product purchasing intention.

The definitions of the key concepts used in the research model are summarized in Table 1. The general rule of choosing concepts for the proposed model is to build on the literature and to use well-studied concepts.

Table 1. Factor definition and sources.

Factor	Description	Source(s)
Interpersonal trust (iTrust)	Interpersonal trust refers to the individual trust formed in another specific party. In an e-commerce environment, the two participating parties are the online consumer and the online vendor. The two form of interpersonal trust are cognitive and affect-based trust. Cognitive-based trust develops from a “pattern of careful rational thinking and thus it reflects the customer’s confidence that an e-retailer is honest, accurate, and dependable and keeps promises.” Also called emotional trust, affect-based trust “develops from one’s instincts, intuition, or feelings concerning whether an individual, group or organization is trustworthy.”	[31,37] [48] [38,39]
Web accessibility	The web accessibility concept adopted here considers the ease of use and usefulness aspects together with various design features that contribute to the overall website quality and usability such as, navigational design, information content and design.	[31–33,35,49–54]
Visual appearance (color and product images)	Visual appearance refers to the aesthetic and emotional appeal of a website, for example, the color appeal and the product images. The colors used are perceived as pleasing, appealing and appropriate, such as the background and the font color. Product images, such as image interactive features such as 3D virtual models that consumers can operate to view product information by zooming in or out on product images, rotating a product in different angles and viewing in product colors.	[3,31,55] [56–58]
Social Influence	Social influence refers to people asking of opinions of their family/friends or online consumer groups before they make an online purchase decision. For example, social networking services such as review, rankings, forums.	[48,59,60] [5,36,61]
Consumer Cognitive Innovativeness	Consumer cognitive innovativeness’ refers to consumer’s rational thinking, problem solving and decision-making tendency related to new product purchase in a B2C website.	[18]

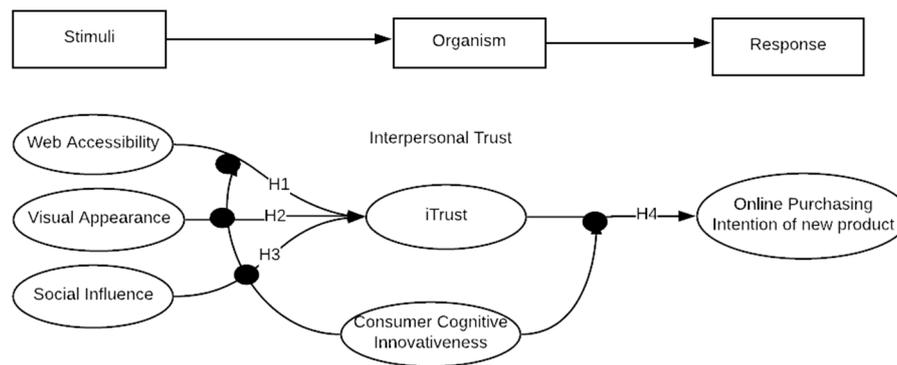


Figure 1. Research model.

3. Hypotheses Development

3.1. Web Accessibility

Sohaib and Kang [62] highlights e-commerce website accessibility positively affects consumer interpersonal trust (cognitive and affect-based trust) towards purchasing intention. E-commerce website design such as layout, graphics, and ease of use can impact consumer purchase intention [63]. According to [41], cognitive innovative consumers enjoy thinking for goal achievement, but also have a propensity to apply a great deal of mental energy to solve problems they encounter. Therefore, consumers who follow goals will focus on task performance and emphasize perceived usefulness and ease of use, that is, web accessibility. Perceived usefulness in a higher level of cognitive innovativeness is positively influencing consumers' sustainable relationship behaviour toward using a technology [18]. Therefore, website accessibility is important for cognitive innovative online consumers. In addition, men and women differ in their use of information technology such that those women's use intentions are more strongly influenced by the ease of use [22]. Thus, we propose:

Hypothesis 1 (H1). *Consumers' cognitive innovativeness will moderate the influence of web accessibility on iTrust towards online purchasing intention of new products such that the impact is greater for women than men.*

3.2. Visual Appearance

Web visual appearance elements, such as, the color and product images are important determinants of the consumer's interpersonal trust and intention to buy a product [64,65]. Cyr (2008) found a positive relationship between a good visual website design and loyalty, trust and satisfaction. The aesthetics of the online store includes a visual appeal. Pleasing visual appearance can be controlled through design such as color and images. Venkatraman and Price [41] found that cognitive innovators prefer visual strategies for processing information. Therefore, visual appearance is important for cognitive innovativeness consumers [18]. In addition, the use of color and product images creates a pleasant online experience, such that women enjoy shopping online significantly more than men [12,22]. Thus, we propose:

Hypothesis 2 (H2). *Consumers' cognitive innovativeness will moderate the influence of visual appearance on iTrust towards online purchasing intention of new products such that the impact is greater for women than men.*

3.3. Social Influence

A positive relationship exists between social influence and consumer trust in online purchasing intention [59]. Social influence is a vital factor that determines consumer behavior in social networking sites [40]. Concerning gender differences, females are more greatly influenced by social factors than

men [66]. Males have greater trust in online retailers when they are able to post their views via social media, whereas females have greater trust who value the responses of other consumers to the posts [67]. Similarly, cognitive innovativeness influences the way individuals react when faced with any new experience or communication within the environment [68]. Thus, cognitive innovativeness will moderate the impact of social influence. Thus, we propose:

Hypothesis 3 (H3). *Consumers' cognitive innovativeness will moderate the influence of social influence on iTrust towards online purchasing intention of new products such that the impact is greater for women than men.*

3.4. iTrust

Two forms of interpersonal trust (iTrust) are cognitive and affect-based aspects [69]. Cognitive-based trust is a buyer confidence to rely on the website design [70], whereas affect-based trust is the satisfying experience revealed by the website [49]. In addition, Kim and Forsythe [71] highlighted that innovativeness might affect a consumer's interaction regardless of his or her intention toward using new technology. According to Thakur and Srivastava [72], innovativeness influence purchasing intentions. Concerning the gender, the trustworthiness of online store has a higher impact on use intentions for women than men [22]. Online trust plays an essential role in intention to purchase online for women than men [68,73]. Thus, we propose:

Hypothesis 4 (H4). *Consumers' cognitive innovativeness will moderate the influence of iTrust on online purchasing intention of new products such that the impact is greater for women than men.*

4. Methodology

This study used an online survey methodology approach. The survey was announced through university webmail and social network pages. For the validation and testing of the hypotheses, data were collected from online shoppers in Australia. Criteria for selecting participants were to have a minimum of six months online shopping experience. The participants were instructed to search for a new product not purchased online before (such as electronic products which have more new products introduced each year) ignoring the price and brand factors and gather certain details to become more familiar with the chosen website [33]. After to go through the entire online buying process up to but excluding the clicking of the buy button to purchase the product the interaction with the chosen website, respondents were required to fill out a closed-ended questionnaire on seven-point Likert scale. This includes options such as (7). Strongly Disagree; (6). Disagree; (5). Somewhat Disagree; (4). Neither Agree nor Disagree; (3). Somewhat Agree; (2). Agree and (1). Strongly agree. Previously validated survey instruments were revised and used in order to ensure the measures are adequate and representative. Appendix A shows all the items used in this study.

Variance-based structural equation modeling (SEM) statistical technique, such as Partial Least Squares (PLS) path modeling using SmartPLS version 3 [74] was used to test the research model. Covariance-based SEM techniques are not appropriate for some types of research because they deal only with reflective variables [75]. The research model in this study has both formative and reflective constructs. Therefore, PLS-SEM (also called PLS path modeling) is appropriate for this study. Reinartz, Haenlein [76] provided an effective overview of variance-based and covariance-based SEM.

Partial Least Squares (PLS-SEM) approach is a preferred analysis technique in information systems and business research because it offers several flexibilities. For example, this approach is well suited for prediction-oriented research or exploratory modeling [77], does not require a large sample size, does not require normality and subsequently works without distributional assumptions and with nominal, ordinal and interval-scaled variables [78,79]. PLS is also considered appropriate as it allows

researchers to simultaneously assess measurement model parameters and structural path coefficients. Furthermore, it allows both formative and reflective constructs to be tested together [80].

In our research model, web accessibility, visual appearance, iTrust, and purchase intention were modeled as reflective indicators because they were viewed as effects of latent variables [64]. This is because reflective indicators are interchangeable. For example, different indicators reflect the website accessibility, such as easy to learn, understandable and easy to use, to which these indicators are highly correlated. This means that an increase in website accessibility is reflected by increases in all indicators. Whereas social influence is formative in nature because it is a multidimensional construct, which covers various referent groups such as social networks sites, friends and family, online help, reviews and rankings [40]. Formative constructs are not interchangeable; this means a change in one indicator does not necessarily denote a change in other indicators. For example, an increase in influence from family would influence individuals to purchase online even if there were no influence from other sources. In addition, the moderating effects of cognitive innovativeness were performed using the product indicator approach. The product indicator approach by Chin [80] refers to the products of each indicator of the independent latent construct with each indicator of the moderator construct. We used the multi-group PLS analysis method to determine whether the effect differs for males vs. females' participants, which is considered appropriate for this study [81]. Multi-group PLS analysis allows for the comparisons of structural model differences between groups [80]. The analysis was conducted by taking the standard errors of the structural models' paths by comparing equivalent paths across two groups (males and females) by performing *t*-tests on their path coefficients.

5. Results

A total of 260 responses were collected. After removing incomplete responses, a total of 250 were used to test the proposed model. 55% respondent were males and 45% was females, 87% of respondents had Internet experience 7 years or above, 58% respondents have online purchasing experience between 1–3 years.

5.1. Reliability and Validity Assessment

The measurement model's reliability and validity were evaluated by examining internal consistency, convergent validity, and discriminant validity. Table 2 shows the Cronbach's reliability, composite reliability and the AVE of all constructs values exceeds the recommended value of 0.70 [80]. A social influence is a formative construct that cannot be analyzed in this procedure. For the formative indicator, the validity of construct using outer weights was significant (*p*-value < 0.05). In addition to this, to determine the reliability of formative indicators, the variance inflation factor (VIF) value was less than 5, which means there is no multicollinearity [40]. Appendix A shows loading of all items used in the study.

PLS method requires practically no bias when estimating data from a composite model population, regardless of whether the measurement models are reflective or formative [82]. However, to examine the robustness of the results, we employed Lindell and Whitney [83] marker variable assessment method for accounting for common method variance in cross-sectional surveys. We add another variable (marker) that was theoretically dissimilar to other variables in our proposed model. The correlation between marker variable and other variables were very low, ranged from 0.02 to 0.05, providing evidence against the existence of common method bias in our data.

Henseler and Sarstedt [84] explain in detail that the GoF is useful for a PLS multi-group analysis for the same PLS path model. The model fit was assessed by examining the model fit of the PLS path models, namely, the Standardized Root Mean Square Residual (SRMR), Exact Model Fit Tests (d_LS: the squared Euclidean distance and d_G (the geodesic distance), and the Normed Fit Index (NFI) (see <http://www.smartpls.de/documentation/fit>). For the SRMR, the recommended value should be lower than 0.08; Exact Model Fit Tests (d_LS and d_G) recommended *p*-values to be greater than 5. NFI values between 0 and 1 are recommended. The fit indices for the two samples: Men sample [SRMR =

0.07; $d_{LS} = 0.24$; $d_G = 0.17$ and $NFI = 0.82$]; Women sample [$SRMR = 0.06$; $d_{LS} = 0.30$; $d_G = 0.17$ and $NFI = 0.87$] indicate a good model fit of the data.

Table 2. Reliability, Correlation, and Discriminant Validity of Constructs.

Males Sample									
	AVE	CR	C-Alpha	iTrust	WA	VA	SI	CIn	PINT
iTrust	0.76	0.93	0.89	0.87					
WA	0.79	0.86	0.83	0.11	0.88				
VA	0.74	0.86	0.88	0.14	0.10	0.86			
SI	NA	NA	NA	0.10	0.14	0.03	1		
CIn	0.72	0.85	0.73	0.11	0.11	0.20	0.09	0.84	
PINT	0.81	0.96	0.93	0.07	0.17	0.10	0.27	0.20	0.90
Females Sample									
	AVE	CR	C-Alpha	iTrust	WA	VA	SI	CIn	PINT
iTrust	0.74	0.92	0.81	0.86					
WA	0.70	0.90	0.89	0.08	0.84				
VA	0.75	0.87	0.72	0.20	0.01	0.86			
SI	NA	NA	NA	0.02	0.13	0.03	1		
CIn	0.71	0.90	0.93	0.11	0.04	0.01	0.04	0.84	
PINT	0.75	0.90	0.90	0.07	0.11	0.20	0.09	0.17	0.86

Notes: AVE: Average Variance Extracted, CR: Composite Reliability, C Alpha: Cronbach's Alpha, iTrust: Interpersonal trust, VA: Visual Appearance, PINT: Purchase Intention, SI: Social Influence, CIn: Cognitive Innovativeness, WA: Web Accessibility. Diagonal elements are the square root of AVE.

5.2. Structural Model Testing

The structural models and hypotheses were tested, by examining the significance of the path coefficients and the (R^2) variance for the dependent constructs. The significance of the paths was determined using the t -statistical test calculated with the bootstrapping technique. A five percent significance level was employed. SmartPLS version 3 can perform bootstrapping (a nonparametric procedure that can be applied to test whether coefficients such as outer weights, outer loadings and path coefficients are significant by estimating standard errors for the estimates) [74] for both the inner and outer model to specify the t -value for significance. Critical t -values for a two-tailed test are 1.65 (significance level = 10%), 1.96 (significance level = 5%) and 2.58 (significance level = 1%) [85].

The Stone-Geisser criterion Q^2 is also measured using the blindfolding method to compute the variable cross-validated redundancy for assessing the predictive relevance [75]. In this study, all Q^2 values range for the 'online purchasing intention of new product' endogenous variable (i.e., 0.32 for the overall model, 0.34 for the female sample and 0.31 for the male sample) above the threshold value of zero, thus indicating a strong predictive relevance. Further, to compare gender differences (males and females); multi-group PLS analysis method was performed also in SmartPLS version 3. According to Henseler, Christian [86], group comparison can be misleading in the SEM approach unless the measurement invariance is established. Therefore, we established the measurement invariance of composite models (MICOM) in PLS-SEM approach suggested by Henseler, Christian [86] using a 3-step approach.

The coefficients and their t -value on the structural model, and the coefficients of determination (R^2) for the dependent construct are shown in Table 3 and Figure 2. Comparing differences in coefficients of the corresponding structural paths between men and women, as shown in Table 3, the moderating effect of cognitive innovativeness * web accessibility ($t = 1.95$, $p < 0.05$), cognitive innovativeness * visual appearance ($t = 3.29$, $p < 0.001$), cognitive innovativeness * social influence ($t = 3.23$, $p < 0.001$) are found to have a significant impact on iTrust. In addition, cognitive innovativeness * iTrust ($t = 2.42$, $p < 0.01$) has strong influence towards 'online purchasing intention of new product' in both men and women.

Table 3. Hypothesis testing results.

Hypothesis	Path	Females		Males		t-Value	p-Value	Supported?
		Mean	SD	Mean	SD			
H1	WA * CIn- > iTrust	0.19	0.07	0.12	0.09	1.96	0.04 ***	Yes
H2	VA * CIn- > iTrust	0.23	0.05	0.17	0.02	3.29	0.00 *	Yes
H3	SI * CIn- > iTrust	0.22	0.22	0.15	0.05	3.23	0.00 *	Yes
H4	iTrust * CIn- > PINT	0.25	0.08	0.21	0.10	2.43	0.01 **	Yes

Notes: S.D: Standard Deviation, iTrust: Interpersonal Trust: VA: Visual Appearance, PINT: Purchase Intention, SI: Social Influence, WA: Web Accessibility. * Significant at the 0.001 level, ** significant at the 0.01 level, *** significant at the 0.05 level.

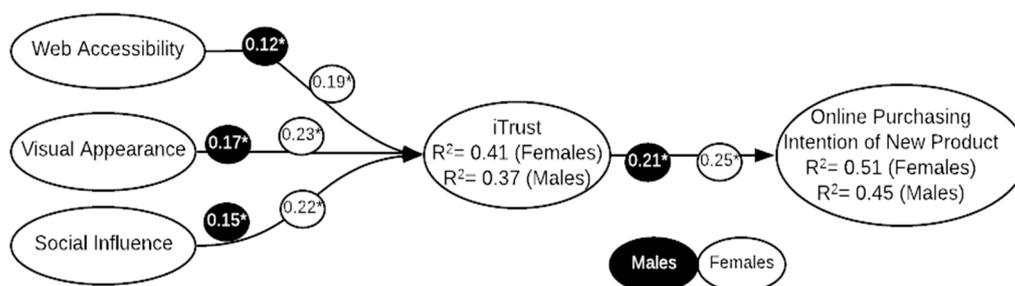


Figure 2. Path testing.

Furthermore, variance in women iTrust ($R^2 = 0.41$) is higher than men ($R^2 = 0.37$). On the other hand, variance in women purchases intention ($R^2 = 0.51$) is significant than men sample ($R^2 = 0.45$). This means women sample model indicates 51 percent variance in purchase intention while men sample explains 45 percent.

5.3. Importance-Performance Map Analysis

The importance-performance map analysis (IPMA) is also a useful method for generating additional findings and conclusions for managerial actions. Ringle and Sarstedt [87] explained the IPMA in details. Performing an IPMA requires determining a targeting construct, such as 'online purchasing of the new product' in our PLS path model. We extend the PLS-SEM results for both the males and females' sample by taking the performance of each construct, measured on a scale from 0 to 100 into account.

Table 4 and Figure 3 shows the IPMA results of all the indirect and direct constructs of the target construct 'online purchasing of new product'. The moderating role of cognitive innovativeness was also taken into consideration. The highest importance towards 'organization performance' in both males and females is 'social influence' factor as an indirect predecessor. However, the performance of iTrust as a direct predecessor of 'online purchasing of new product' is higher in females than in males.

Table 4. IPMA results (males and females).

Items	Males		Females	
	Importance	Performance	Importance	Performance
WA	0.10	50.61	0.14	66.50
VA	0.12	55.46	0.24	56.62
SI	0.15	57.06	0.21	67.42
iTrust	0.17	58.46	0.25	64.68

iTrust: Interpersonal Trust: VA: Visual Appearance, PINT: Purchase Intention, SI: Social Influence, WA: Web Accessibility.

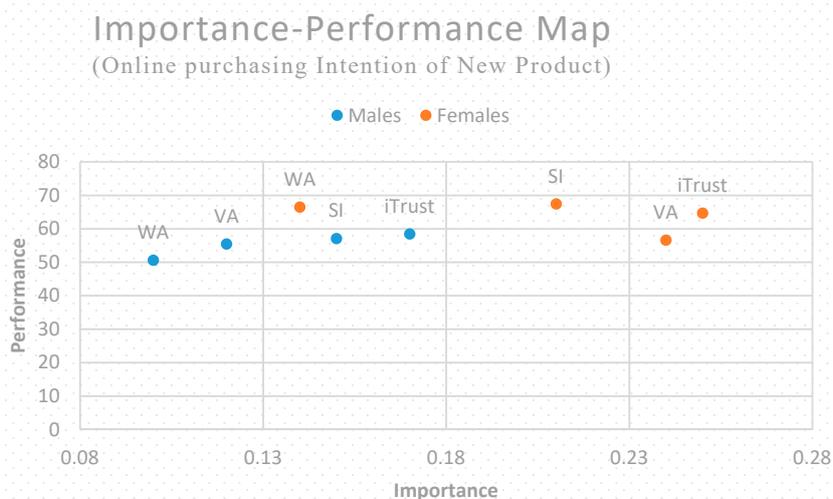


Figure 3. IPMA results of the dependent variable (males and females).

6. Discussion and Conclusions

As shown in Figure 2 path testing, the order of path coefficient value among the females that have a significant moderating effect of consumer cognitive innovativeness on iTrust is “visual appearance”, followed by “web accessibility”, “social influence”, and “security and privacy”. This indicates women show more inclination towards website visual appearance and web accessibility. In addition, the order of significance among the males that have a significant moderating effect of consumer cognitive innovativeness on iTrust is “security and privacy”, followed by “visual appearance”, “social influence”, and “web accessibility”. This indicates men are more concerned about a safe online store, confined by rules and regulation. Gender-specific performance outcomes become obvious from the IPMA results (Table 4). The findings showed that differences exist in the iTrust aspects towards online purchasing of the new product in both males and females. The findings show the most important indicators for triggering iTrust is the social influence in males and females. The findings make a strong case for target gender-specific s-commerce strategies.

The findings of this study are: First, we have learned that the factors such as web accessibility, visual appearance (color and product images) and social influence impact iTrust at the individual level towards new product purchasing intention in both males and females. The consumer cognitive innovativeness moderating effect on the relationship between web accessibility and iTrust is stronger in females’ sample than in male’s sample. This means that female individuals believe that the web design of an online store website, including technical aspects such as navigation design, web content information, website availability and accessibility is most important. In addition, visual appearance is also favored in females than in males. Website designers should pay particular attention to colors and images [31] Our results are consistent with Cyr. Second, females are more socially influenced than males to generate trust regarding online purchasing. For-example, the use intensity of social networking services, such as opinions from family/friends, online consumer groups or social media cues (such as social network site, chat rooms, discussions and blogs.) is higher in building the iTrust in females. Finally, we have found that differences exist in forming interpersonal trust in online shopping in both males and females. The results of this study show men and women have different perceptions of what is important to be provided by an online store to make a positive shopping experience. We highlighted that in-addition to the e-commerce web design; the cognitive innovativeness can influence females more to purchase online.

In conclusion, the stimulus (S) towards which a reaction is made provides a signal regarding the cognitive and affect-based trust (Organism) of an online store website that influences consumer

new product purchase intention (Response). Thus, different e-commerce strategies would be required to establish iTrust (cognitive and affect-based) between consumer and online vendors across gender, depending on the consumer's individual cognitive innovativeness.

6.1. Implications and Recommendations

The main theoretical contribution of the study is the development of a research model that can be used in further studies. Additionally, this research addresses the shortcomings in the existing literature, by applying consumer cognitive innovativeness as a moderator to a proposed model to uncover new and improved methods for fostering consumer iTrust (cognitive and affect-based) in a B2C website.

The findings also provide practical implications and guidelines for online vendors. The results of this study may help online shopping managers who could use the insights analyzed in this research to modify their approach. For example, the online store should be designed according to consumers' level of cognitive innovativeness. Online businesses need to understand, which features consumer need to consider in order to find out what is important, and how to adapt their online store platforms to be attractive to all of their consumers. Online stores could consider different web layouts on their websites for men and women, such as for men the focus should be on web accessibility aspects, while the version for women should aim to provide hedonic aspects and a clear navigation. The presentation of B2C e-commerce website design aspects should be conveyed through website accessibility guidelines aimed at the global consumer's perception, such as meeting the WCAG 2.0 (Web Content Accessibility Guidelines) developed by World Wide Web Consortium (W3C) to help make the website accessible for users of all ages and with disabilities.

This mean online business should not treat their consumers as a uniform group with a 'one-design-fits-all' design strategy but need to consider the individual needs of their male and female consumers. For-example, online vendors can capture consumer attention by providing visual aesthetics that contributed to the overall look and feel of the website. In addition, the use of product virtualization technologies such as image interactivity features (enlarged product images, 360-degree views and 3D virtual models), pictures with different color combinations, such as showing clothing on human models in different colors, enhance consumer trust in e-commerce websites. In addition, online vendors can guarantee security and privacy by displaying the logos of trusted third parties on every page of their website to enhance their consumer trust. Furthermore, the results showed that the use intensity of social networking services for online purchasing is higher in women than men. This means that the social aspects of e-commerce websites should be implemented to increase interpersonal trust between a consumer and the online vendor. For example, the integration of social networking sites, chat rooms, discussion forums and reviews of products enhance consumer cognitive and affective perception towards online retailers and subsequently their purchase intention. However, more research is required to find out the consumer behaviour on social commerce platforms [88,89].

6.2. Limitations and Future Work

Like most survey research, this study also faces some limitations. Firstly, data were collected in Australia only. Therefore, caution is advised in generalizing from the study findings. Secondly, although a sound judgment was made in the selection of factors for the research model, the study did not consider all possible factors that could impact interpersonal trust towards online purchase intention that has been used in prior studies. Moreover, an examination of consumers' cognitive innovativeness provides a good starting point in the quest to develop a greater knowledge of consumers' trust towards online purchasing intention based on their specific cultural context.

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Appendix A. Questionnaire Items

		Measures	Loadings (Males)	Loadings (Females)	p-Value
Web Accessibility [26,32–34,51]	WA1	The structure of this website is easy to understand.	0.89	0.83	0.00 **
	WA2	When I am navigating this website, I feel that I am in control of what I can do.	0.86	0.83	0.00 ***
	WA3	This website responds quickly.	0.83	0.85	0.00 **
	WA4	This website helps me correct the errors I made.	0.87	0.83	0.00 ***
Visual Appearance (Color) [3,32]	VA1	The colors used in the website are emotionally appealing.	0.73	0.74	0.00 ***
	VA2	The colors used on this website are attractive overall.	0.70	0.82	0.01 *
	VA3	The brightness of pages on this website is adequate.	0.83	0.87	0.00 ***
Visual Appearance (Product Images) [31,32]	VA4	This website has eye-catching images on the home page.	0.82	0.88	0.00 ***
	VA5	Zooming and 3D images is helpful in buying what I want through this website.	0.73	0.80	0.00 **
	VA6	Overall, the screen design (i.e., images, layout etc.) is attractive.	0.84	0.82	0.00 **
Social Influence [48,90]	SI1	This website clearly shows how I can contact the company.	0.74 (Weight)	0.62 (Weight)	0.00 **
	SI2	I believe using social networks services (YouTube/Facebook/twitter/Google+) would help me in decision making to purchase online.	0.17 (Weight)	0.21 (Weight)	0.005 *
	SI3	I believe using the other support services (such as, FAQs, ranking, online help, and contact details) would help me to buy product I really want.	0.52 (Weight)	0.45 (Weight)	0.00 ***
	SI4	My friends or family tell me about the new products.	0.62 (Weight)	0.51 (Weight)	0.00 **
Cognitive Innovativeness [13,41,91]	CInn1	I am usually among the first to buy new product.	0.81	0.84	0.00 **
	CIn2	I am continually seeking new product experiences online.	0.83	0.87	0.00 ***
	CIn3	I usually find out the meaning of words I don't know.	0.82	0.86	0.00 ***
	CIn4	I am among the last in my circle of friends to buy a new product when it appears online.	0.74	0.78	0.01 **
	CIn5	Purchasing new products online takes too much time and effort.	0.82	0.86	0.005 **
New Purchase Intention [13,34]	PINT1	I am likely to purchase the new product(s) from this retailer website.	0.87	0.87	0.00 **
	PINT2	I frequently look for new products online.	0.84	0.85	0.00 ***
	PINT3	I am eager to buy new products as soon as they come out online.	0.88	0.85	0.00 ***
Interpersonal Trust (Cognitive and Affect-based Trust) [48,53,92] [53,93]	iTrust1	Promises made by this website are likely to be reliable.(Cognitive-based trust)	0.92	0.84	0.00 **
	iTrust2	I feel comfortable using this website to achieve my goals. (Cognitive-based trust)	0.87	0.83	0.00 ***
	iTrust3	I feel that I would be able to trust this website completely. (Cognitive-based trust)	0.81	0.82	0.00 ***
	iTrust4	I expect that this retailer website is ready and willing to assist and support me. (Affect-based trust)	0.83	0.81	0.00 **
	iTrust5	Promises made by this website are likely to be reliable. (Affect-based trust)	0.87	0.84	0.00 **
	iTrust6	I expect that this retailer website is ready and willing to assist and support me. (Affect-based trust)	0.83	0.81	0.0 ***

* Significant at 0.05 level, ** Significant at 0.01 level, *** Significant at 0.001 level.

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