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PhD Thesis

**Factors Influencing Merchandise Online Shopping:
The Mediating Role of Trust**

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Abstract

To date, most of the commercial enterprises such as public, private sectors, SMEs as well as entrepreneurs have invested highly to deploy their digital marketing and/or e-commerce strategies efficiently to sell more of their products and services to customers through this online channel in order to make further profits, and to retain their share of market as well.

However, the sustainability of this kind of trading merely depends on the satisfaction of the consumers as it plays the most important role in the matter of profitability. Thus, e-vendors should always consider the customers' needs should they wish to maintain their stability in the highly competitive online environment, and hence keep their business development.

The primary objective of this doctoral dissertation was to identify the key factors influencing consumers' purchasing decisions in the electronic commerce, with particular emphasis on the behavioral perspective and the mediating role of trust. To achieve this objective, a major quantitative study was conducted between 2022 and 2026 on a sample of 371 respondents, using e-survey method. The questionnaire was developed using the Lime Survey system made available by the IT resources of Nicolaus Copernicus University in Toruń. A total of 304 fully completed and valid questionnaires were collected. The research sample consisted of Polish university students from several institutions. The reliability and validity of the questionnaire were assessed using Cronbach's alpha coefficient and measurement scale development procedures (Content Validity). Data analysis was carried out using the partial least squares (PLS) method and structural equation modeling (SEM) with the WarpPLS software.

The results revealed that perceived product awareness and payment transaction safety were positively significant with perceived online trust. Besides, perceived online trust, perceived web quality and past online shopping experience were positively significant with online shopping. It was also concluded that perceived price advantage, perceived social influence, perceived web quality and past online shopping experience had no significance with perceived online trust.

Keywords: Online trust, payment transaction safety, perceived price advantage, perceived product awareness, past online shopping experience, perceived web quality, social influence.

Streszczenie

Dotychczas, w obliczu dynamicznego rozwoju marketingu cyfrowego i e-commerce, podmioty gospodarcze – zarówno sektor publiczny, prywatny, MŚP, jak i przedsiębiorcy indywidualni – intensyfikują inwestycje w wdrażanie strategii e-commerce oraz marketingu cyfrowego, aby skuteczniej sprzedawać produkty i usługi online, zwiększać zyski, a także utrzymywać udział rynkowy. Trwałość tego modelu handlu zależy jednak przede wszystkim od satysfakcji konsumentów, która stanowi fundamentalny warunek rentowności. Z tego względu e-sprzedawcy powinni konsekwentnie uwzględniać potrzeby swoich klientów, aby utrzymać stabilność funkcjonowania w wysoce konkurencyjnym środowisku internetowym, a tym samym zapewnić dalszy rozwój swojej działalności.

Głównym celem niniejszej rozprawy doktorskiej było zidentyfikowanie kluczowych czynników wpływających na decyzje zakupowe klientów w handlu elektronicznym, ze szczególnym uwzględnieniem perspektywy behawioralnej oraz mediującej roli zaufania. Dla realizacji celu rozprawy przeprowadzono główne ilościowe badania w latach 2022–2026 na grupie 371 respondentów, metodą ankiety przy użyciu narzędzia kwestionariusza ankiety internetowej. Kwestionariusz został opracowany za pomocą systemu LimeSurvey z zasobów informatycznych Uniwersytetu Mikołaja Kopernika w Toruniu. Łącznie zebrano 304 pełnych i poprawnie wypełnionych kwestionariuszy. Próba badawcza została wybrana spośród polskich studentów z kilku Uniwersytetów. Rzetelność i trafność ankiety oceniono testami współczynnika alfa Cronbacha oraz metodami opracowania skali pomiarowej (Content Validity). Do analizy danych wykorzystano modelowanie równań strukturalnych (SEM) i metodę najmniejszych kwadratów cząstkowych (PLS) przy użyciu oprogramowania WarpPLS.

Wyniki wykazały, że postrzegana świadomość produktu oraz bezpieczeństwo transakcji płatniczych miały pozytywny i istotny wpływ na postrzegane zaufanie online. Ponadto postrzegane zaufanie online, postrzegana jakość strony internetowej oraz wcześniejsze doświadczenia w zakupach online pozytywnie i istotnie oddziałują na skłonność do zakupów online. Jednocześnie wykazano, że postrzegana przewaga cenowa, postrzegany wpływ społeczny, postrzegana jakość strony oraz wcześniejsze doświadczenia zakupowe nie mają istotnego wpływu na poziom postrzeganego zaufania online.

Słowa kluczowe: zaufanie online, bezpieczeństwo transakcji płatniczych, postrzegana przewaga cenowa, postrzegana świadomość produktu, doświadczenia zakupowe online, jakość strony internetowej, wpływ społeczny.

Introduction

By the advent of daily development of smart phones and Internet utility, consumers tend to modify their life-style by shopping from traditional (physical) way to online (virtual) buying for the sake of its comfort, easiness and the enjoyment that such a new technology may bring with them. By diffusion of such an innovation, the business of varied merchandises also paved its path into the virtual market and became a favourable marketing spot for the e-vendors.

Indeed, most of the commercial enterprises such as public, private sectors and SMEs entrepreneurs have invested highly in digital marketing and/or e-commerce industry to sell more of their products and services to customers through this channel in order to make further profits, and to retain their share of market as well. Nonetheless, the sustainability of this kind of trading would be viable if only the satisfaction of the consumer had been met; as it plays a vital role in the matter of profitability (Jeddy, 2024). Thus, e-vendors have to always beware of their customers' needs should they wish to have a stable business in the highly competitive online environment, and hence maintain their sustainable selling development.

There are various factors involving in the online shopping sphere. Some of them may emanate from psychological (behavioural intentions) point of view (Ajzen, 1987, 1991), and the others from a user tendency (user-friendly interfaces) in utilizing a new invented technology system (Davis, 1985).

This empirical study generally tries to detect the key factors affecting merchandise online shopping from the behavioural aspect, and thus elucidates in details their influence on the trust element, which ultimately yields to the online buying context (Abu-Alsondos et al., 2023; Chung & Park 2009).

In terms of **the overall purpose** of this study, it is important to note that the number of financial transactions processed through online businesses has been growing at an unprecedented global pace. Enterprises that only operated their business in the traditional (in-store) manner in the past, now try to adapt and upgrade themselves by finding a new pathway to run their merchandizing through the new gift of innovation—Internet. It is relatively a new phenomenon invented in the last decades, could have already contributed to the selling/buying process of enterprises during the whole 24 hours of a day, when it was not possible to have such a facility in the past. Thus, further studies pertaining to the realm of online shopping is vital (Emamdin et al., 2020; Smith

& Rupp;2003; Venkatesh et al., 2022) as it enables a huge financial circulation amongst the people that creates cash-flow, less bargaining between the buyer and seller, saving time, competitive pricing between sellers and so forth.

However, there are still some vivid or hidden major/minor factors that applying it or not may accelerate, or lessen the selling/buying process (Bhalero & Gujar, 2019; Ahmed & Sathish, 2015; Kalia et al., 2016; Corbitt et al., 2003; Papas, 2016). Thus, ignoring such factors may challenge the rate of profitability, companies' share of market and sustainability in the competitive online environment, too. As finding what factors could contribute e-clients to purchase commodities would be beneficial both for digital marketers and e-vendors, the study; therefore, is opted to detect the most common relevant factors enabling better shopping output in the scope of the virtual networks.

Hence, the research provides insights into the purchase behaviour of consumers confronting with the sellers of virtual shops for finalizing their making-decisions. This process will be conducted by discussing relevant factors by considering the Theory of Planned Behaviour (TPB) proposed by Ajzen (1987, 1991), as well as reviewing the extant literature on the topic.

In delineating the **research problem**, it is important to recognize that, despite the rapid expansion of e-commerce, virtual buying continues to be perceived as a mix of benefits and risks (Bhalero & Gujar, 2019; Kumar,2015). In the meantime, there are still some people around the world that do not trust to purchase their items online, and are used to shopping in traditional (physical) manner. This may be due to either technical—lack of knowledge on how to use PC's or smartphones, avoiding risk of disclosing personal and banking information (risk of hackers!), or the product bought may not match with the web item information (Macknight et. al., 2002) as well as money paid but no product/service delivered, and other cognitive/psychological reasons.

In a similar vein, in the history of e-business activities, there has been an everlasting question of how an e-vendor can sell more of his online-products to the customers? or how may he attract the attention of e-customers to his own web-domain? Having the least amount of selling in the fiscal year, or having a stagnant situation in the selling process, has been an issue that would have been always a great concern to them.

Hence, if an e-vendor endeavours to tackle such mentioned barriers, he may very well get connected with a huge number of available e-consumers ready to shop from his business. Thus,

the study attempts to find the answers of the above problems by arising the following specific questions for conducting the research:

1. What factors influence consumers' online purchase decision-making of merchandises?
2. Which factors have more weighting impact on the e-clients' online shopping relatively?

The empirical study; therefore, intends to find the key factors influencing merchandise online shopping by referring to the extant literature, and utilization of the Theory of Planned Behaviour (TPB), (Chung & Park, 2009). From the novelty point of view, in the e-commerce literature—on the topic of online shopping – the combination of all the constructs of TPB model have not been examined so far; rather some separate parts of the constructs of the model were only used for investigation depending on the scope of research questions. Thus, this study, for the first time, has aimed to utilize appropriately all the constructs of TPB model for its investigation in the area of online shopping context to remove such a gap (Grabner-Kräuter & Kaluscha, 2003; Darley et al., 2020; Lăzăroiu et al., 2020; Monsuwé & Benedict, 2004; Kaur & Khanam Quareshi, 2015). In a nutshell, few studies have been conducted by the Theory of Planned Behaviour (TPB) on the online shopping context. Understanding the impacts of such influencing factors is significant both for theoretical stability and consistency and business practices. As a result, this study fills the gap in this way.

With regard to the **conceptual model** underpinning this study, it is important to note that online purchasing behaviour is closely tied to human psychology and cognitive processes. For this reason, the Theory of Planned Behaviour (TPB), as a behavioural framework, offers an appropriate lens through which the key factors influencing online shopping can be more accurately measured and evaluated. As buying-decision in the virtual mode has also relation to the human's psychology, cognition; consequently, through TPB conceptual model— a behavioural model – the concepts of online shopping factors could be better measured and evaluated.

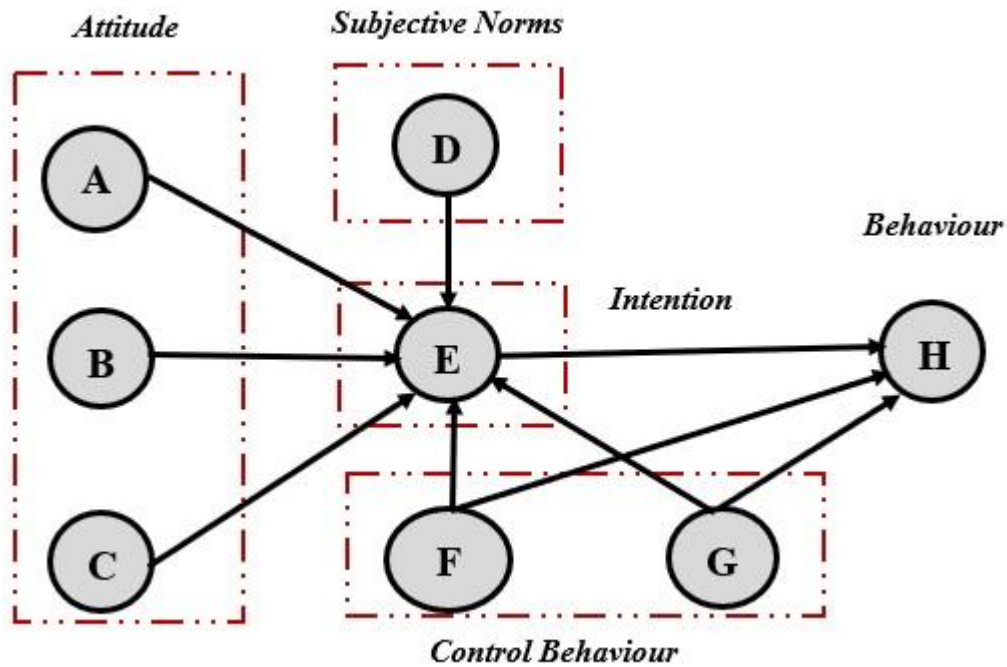


Figure 0-1: Conceptual Model of the Theory of Planned Behaviour (Ajzen, 1987, 1991)

A= Perceived product awareness

B= Perceived price advantage

C= Perceived payment transaction safety

D= Perceived social influence

E= Perceived online trust

F= Perceived web quality

G= Past online shopping experience

H= Online shopping

To describe the above conceptual model, in a reflective model, the causal action flows from the latent variable to the indicators. The latent variable (perceived web quality [F], or past online shopping experience [G] and finally perceived online trust [E]) are posited as the common cause of indicator behaviour. The manipulation of the latent variable via changing web quality, past online shopping experience, or trust causes a change in indicator behaviour. The causal action flows from the independent variables (indicators) to the composite variable. In this model, the indicators are A, B, C, D, F, G, which influence (shape) perceived online trust [E], Bollen & Lennox (1991).

For clarity and consistency throughout the dissertation, **several key terms** used frequently in the analysis are defined below to ensure a common understanding of their meaning:

- **Perceived product awareness:** refers to “the valence, intensity and the extent of the information that a product-image may have on the web” (Sindhav & Balaz,1999).
- **Perceived price advantage:** refers to “the degree to which a consumer believes that the price of the product is more reasonable and economically attractive than the other similar ones” (Zhu et al., 2018).
- **Perceived payment transaction safety:** refers to “potentially malicious activities related to online transactions such as unauthorized transactions, altering and breaching transaction information.” (Mousavizadeh et al., 2016).
- **Perceived social influence:** refers to “accepting information from others as evidence of reality” (Ali et al., 2021).
- **Perceived web quality:** refers to “user’s evaluation of a web site’s features meeting user’s needs and reflecting overall excellence of the web site” (Aladwani & Palvia,2002).
- **Past online shopping experience:** refers to “past history of the online user for actual product or service purchase, using Internet medium from an e-retailer” (Mathew & Mishra, 2014).
- **Perceived online trust:** refers to “the belief that the online seller can be trusted; it is a feeling of confidence and security towards the online transactions” (Sahney & Ghosh,2013).

The **main research objective** of this study is to find and investigate the factors influencing merchandise online shopping. Apart from the main objective, there are several **sub-objectives** in this study:

- Reviewing the impact of perceived product awareness on the perceived online trust.
- Reviewing the impact of perceived price advantage on the perceived online trust.
- Reviewing the impact of perceived payment transaction safety on the perceived online trust.
- Reviewing the impact of perceived social influence on the perceived online trust.
- Reviewing the impact of perceived web quality on the perceived online trust.
- Reviewing the impact of perceived past online shopping experience on the perceived online trust.
- Reviewing the impact of perceived web quality on the online shopping.
- Reviewing the impact of past online shopping experience on the online shopping.
- Reviewing the impact of online trust on the online shopping.

In alignment with the principal objective of this dissertation – to identify and assess the factors that drive consumers’ online shopping behaviour – **the research questions and hypotheses** were formulated to capture systematically the relationships among those determinants and to support empirical verification of the proposed conceptual model. The extant literature in the fields of e-commerce, consumer behaviour, and technology acceptance models indicate that online purchasing decisions are influenced by a complex set of cognitive, technological, social, and experiential determinants. Despite extensive studies, the relative importance of those determinants and the mechanisms through which they influence online trust and purchasing behaviour remain unclear and require empirical verification in a contemporary digital environment. Therefore, the following research questions have been developed to structure the investigation and ensure a comprehensive examination of the key constructs included in the conceptual model. The major questions address the overarching problem of which factors affect online shopping decisions and which of them have the strongest influence. Complementary sub-questions focus on specific relationships between selected independent variables and the central construct of perceived online trust, as well as its subsequent impact on online purchasing behaviour.

Principal (major) questions:

- 1) What factors influence consumer’s online shopping decision?
- 2) Which factors have more weighting impact on the e-clients shopping decision?

Sub-questions:

- 1) Does perceived product awareness have impact on the perceived online trust?
- 2) Does perceived price advantage have impact on the perceived online trust?
- 3) Does perceived payment transaction safety have impact on the perceived online trust?
- 4) Does perceived social influence have impact on the perceived online trust?
- 5) Does perceived web quality have impact on the perceived online trust?
- 6) Does perceived past online shopping experience have impact on the perceived online trust?
- 7) Does perceived web quality have impact on the online shopping?
- 8) Does perceived past online shopping experience have impact on the online shopping?
- 9) Does perceived online trust have impact on the online shopping?
- 10) Which factors have more weighting impact on the e-clients’ online shopping relatively?

In order to empirically verify the conceptual model and answer the research questions, a set of hypotheses have been formulated. The hypotheses reflect the theoretical assumptions derived from prior studies and assume positive and statistically significant relationships between perceptions of product-related, price-related, technological, and experiential factors on both perceived online trust and online shopping behaviour. Verification of these hypotheses is essential for achieving the objectives of the dissertation and for assessing the explanatory power of the proposed research model.

Principal (major) hypothesis:

H₁: Perceived online trust has a positive significance on the online shopping.

Sub-hypothesis:

H₂: Perceived product awareness has a positive significance on the perceived online trust.

H₃: Perceived price advantage has a positive significance on the perceived online trust.

H₄: Perceived payment transaction safety has a positive significance on the perceived online trust.

H₅: Perceived social influence has a positive significance on the perceived online trust.

H₆: Perceived web quality has a positive significance on the perceived online trust.

H_{6a}: Perceived web quality has a positive significance on the online shopping.

H₇: Perceived past online shopping experience has a positive significance on the perceived online trust.

H_{7a}: Perceived past online shopping experience has a positive significance on the online shopping.

Methodologically, the study is grounded in the online shopping environment and has been developed in fulfilment of the requirements for the PhD degree in Management and Quality Sciences at Nicolaus Copernicus University in Toruń, Poland. As an applied research project, it employs a survey-based design, enabling the systematic collection of empirical data and the examination of correlations between the constructs included in the conceptual model. The population of the study for investigation is opted from the students of Nicolaus Copernicus University in Toruń, Poznan University of Economics & Business, the University of Economics in Katowice, Bydgoszcz University of Technology, the University of Rzeszów, and University of

Gdańsk who had at least one-time of online shopping experience in their life-time. Gathering data is provided by online survey (questionnaire). It includes demographic data, general questions as well as five-point Likert scales. The validity of survey would be examined by content validity examination as well as Cronbach's alpha for reliability. For the analysis of data, confirmatory factor analysis (CFA) and structural equation modeling (SEM) would be applied. The research is conducted between the years of 2022-26 as well.

With regard to **the outline of the dissertation**, the thesis is structured into five chapters. Chapters 1 and 2 provide an extensive literature review, organised into several thematic sections. The first chapter discusses the basic theoretical foundations relevant to the study, including the Technology Acceptance Model (TAM), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), and the broader evolution of e-commerce. The second chapter provides an in-depth analysis of the antecedents of trust in online purchasing, encompassing psychological, technological, experiential, and institutional dimensions. It further examines various categories of factors influencing online purchasing behaviour—consumer, product, environmental, web-related, institutional, and economical orientations. The chapter concludes with a structured critical analysis of prior empirical studies, thereby establishing the theoretical basis for the proposed conceptual model. Chapter 3 sets out the methodological framework of the research and explains the philosophical assumptions underpinning the chosen research approach. It describes ontological, epistemological, and methodological positions, discusses relevant paradigms such as positivism and interpretivism, and explains the logic of both inductive and deductive reasoning. The chapter then elaborates the research design, including the justification for adopting a quantitative survey approach, the development of the measurement instruments, the localization of constructs, and the formulation of hypotheses. Further sections detail the population, sampling techniques, and the data collection procedures. Particular emphasis is placed on scale development, content validity, and reliability testing, followed by an outline of the statistical techniques used—such as Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)—which are crucial for validating the measurement and structural components of the research model. Chapter 4 presents the empirical results, beginning with descriptive analyses of the sample characteristics and proceeding with the analytical procedures applied to test the validity of the model. This includes the outcomes of factor analyses, reliability assessments, and the examination of relationships between variables according to the theoretical structure proposed earlier. Step by step, the chapter demonstrates how the collected data support or challenge the

assumptions embedded in the research model. And finally, Chapter 5 provides the discussion and conclusions, interpreting the findings in the context of existing literature and the theoretical framework. It presents the final assessment of the hypotheses, highlights the contributions of the study to academic knowledge and practical applications, and addresses its limitations. The chapter concludes with recommendations for future research directions and practical suggestions for industry professionals, policymakers, and e-commerce stakeholders. The dissertation is supplemented with appendices containing the survey questionnaire, additional statistical outputs, and technical details necessary for full transparency and replicability of the research process.

Chapter 1. Theoretical Framework

1.1. Introduction

Regardless of demographic factors, which are effective on client's online shopping decisions such as income, education, age, occupation, gender, etc., this chapter intends to elicit major factors dealing with e-shopping practice through e-literature for investigation. In this chapter, the prevalent theories about consumer behaviour in the area of online shopping elucidated.

There are two distinct and widely used theories applicable to human intentional behaviour for performing an action as well as utilization of technology as a means of new communication and convenience tools for daily-life situations. It was first stipulated by Ajzen (1985) regarding the intentions of the people for doing an action with behavioural aspect known as the Theory of Planned Behaviour (TPB). Davis (1985) also proposed Technology Acceptance Model (TAM) for examining a user tendency to utilize a new invented technology system. *Both TPB and TAM are adopted from the theory of Reasoned Action (TRA) once proposed by Fishbein & Ajzen (1975, 2011; Taylor & Todd, 1995).* While TRA and TPB model apply to predict any particular human behaviour in general, TAM model designed specifically to predict human behaviour for computers and/or a new technology innovation acceptance (Gillenson et al., 2002). In light of versatile conceptual models existed within the e-commerce literature, TPB as well as TAM are the most common, popular and highly cited used theories (Chau & Hu, 2002; Madden et al., 1992; Chan et al., 2003).

1.2. Technology Acceptance Model (TAM)

TAM, an influential conceptual model framework in the field of information systems (IS), first stipulated by Davis in 1985. This model, which is the adaptation of the Theory of Reasoned Action (TRA), once posited by Ajzen & Fishbein (1975), conveys the adoption and usage between consumer and a computer-based technology service (Bhattacharjee, 2000; Monsuwé et al., 2004; Taylor & Todd, 1995; Lin, 2007; Chau & Hu, 2002). It is comprised of two determinants; respectively, perceived ease of use, and perceived usefulness as attitudinal aspect of the end-user, which reflects the acceptance of utilization of a new e-technology (behavioural intention). The new technologies could be mentioned as the Internet utilization by computers, laptops, mobile phones, websites, Wi-Fi networks as well as any type of new technological inventions in general.

The *perceived ease of use* is “the extent to which a person believes that using the new technology will be free of effort,” whereas *perceived usefulness* refers to “the degree to which a person believes using the new technology will improve his/her performance or productivity” (Monsuwé et al., 2004; Davis, 1989). Later on, this model was extended and the attribute of enjoyment (hedonic sphere) added to attitudinal construct. By the *enjoyment*, it refers to “the extent to which the activity of using computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated” as it was found that hedonic motivations have a high influence on using an innovative application, because of the enjoyable feelings it may bring with itself to the user (Davis et al., 1992; Ha & Stole, 2009; Monsuwé et al., 2004). ***Albeit this model is applicable for examining online adoption by the end-user; however, due to its few attributes underlying, and that the model does not bear social influence as an important construct for technology acceptance being considered, it is usually incorporated with exogenous factors or integrated with decomposed models to better scrutinize online buying decisions*** (Monsuwé et al., 2004; Gillenson et al., 2002; Lin, 2007; Gefen et al., 2003; Ha & Stole, 2009; Taylor & Todd, 1995). TAM conceptual model is drawn as below.

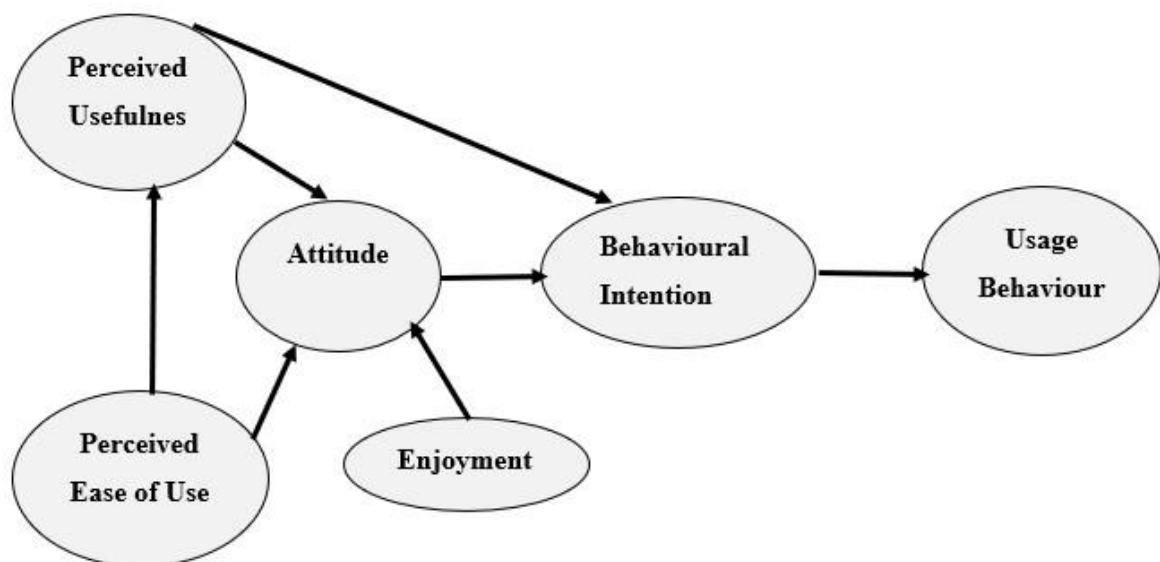


Figure 1-1: TAM Conceptual Model (Davis, 1985, 1992)

To describe the model above, perceived usefulness (PU), perceived ease of use (PEU) and enjoyment flow directly to attitude as belief determinants of attitude. PEU also flows directly to

perceived (PU). Attitude; consequently, directs to behavioural intention, which ultimately leads to the actual information technology (IT) usage behaviour (Lin, 2007).

1.3. Theory of Reasoned Action (TRA)

Posited first by Fishbein and Ajzen (1975, 2011), the Theory of Reasoned Action is the basic conceptual model for the prediction of behavioural intentions (Gillenson et al., 2001). It stipulates that a behaviour will be performed and affected by the influence of one's volition and beliefs, which are the antecedents of behaviour (action). They split up the beliefs dimension in two categories; behavioural and normative beliefs as well. The behavioural beliefs are those underlying beliefs that influence an individual's attitude towards performing an action, and normative beliefs, on the other hand, postulates that beliefs influence a person's subjective norm about performing an action (Madden et al., 1992). Thus, beliefs either as normative or behavioural influence intention, which accordingly impacts on behaviour itself. Fishbein and Ajzen (1975), argued that other exogenous variables to the model may have impact on intention as much as they affect either attitudes or subjective norms. Thus, the model consists of four predictors namely, attitude, subjective norms, intention and behaviour. *Attitude* refers to the *beliefs* and “*the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question*” (Ajzen, 1991). In other words, it denotes to a consistent assessment, feelings, and tendency of an individual, who likes or dislikes an object or ideas (Sutisna & Handra, 2022). Second, *subjective norms* or social factors imply to “*the perceived social pressure to perform or not to perform the behaviour*” (Ajzen, 1991). This can be inferred as opinion of friends, peers, family, reference groups and social position (Mehreen et al., 2021). Subjective norms dramatically impact upon online shopping behaviour (Taylor & Todd, 1995; Mehreen et al., 2021; Taylor & Todd; Mainardes et al., 2020). As such, *intention* refers to “*indications of a person's readiness to perform a behaviour*” (Fishbein & Ajzen, 2011), and lastly, *behaviour* is *the actual action or use of an intended behaviour*. The figure below demonstrates TRA conceptual model. Here, attitude and subjective norm are the latent variables, which directly flow to behavioural intention in which results in behaviour afterwards.

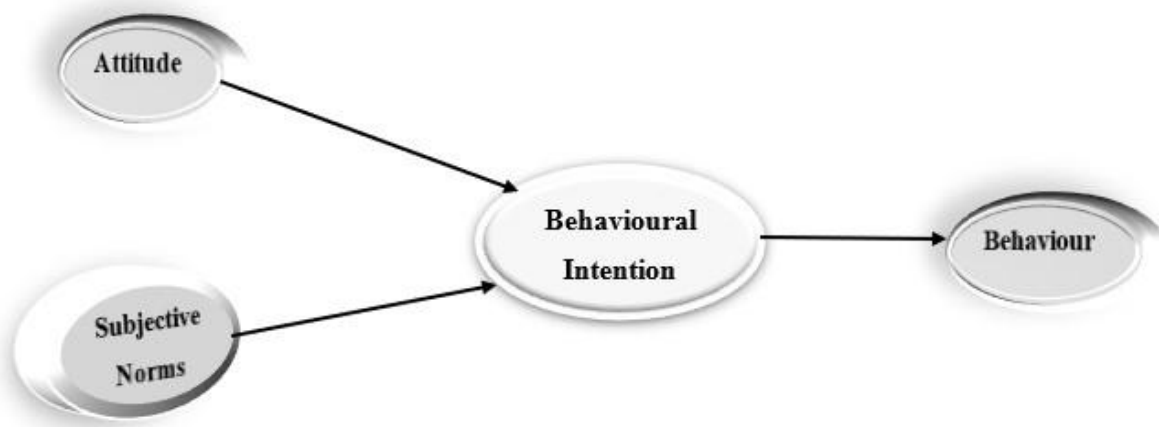


Figure 1-2: The conceptual model of the Theory of Reasoned Action (TRA); (Fishbein & Ajzen, 1975, 2011)

1.4. Theory of Planned Behaviour (TPB): Conceptual Model of the Study

TPB is the extension of TRA by Ajzen (1991). Later, the perceived control behaviour, another exogenous construct, incorporated to the TRA model as an antecedent of behavioural intention (Madden et al., 1992). Such a construct appended to TRA model due to its limitations in measuring behaviours that individuals have over incomplete volitional control (Ajzen, 1991). Ajzen (1991) posited that *“a behavioural intention can lead to behaviour, if only the behaviour is under volitional control.”* That is to say, *“if the person can decide at his/her own will to perform or not to perform a behaviour”*. Akin to TRA, TPB applies customers’ attitude and subjective norm towards intentional behaviour, the focal point and motivational zone of the model that influences behaviour, the new additional perceived behavioural control, and behaviour as the five main constructs for predicting the outcome of social and behavioural action of the people.

According to TPB, an individual is assumed to perform certain behavioural action if the person has actual control (ability) over the behaviour. The *perceived behavioural control* (control beliefs) refers to *“people’s perception of the ease or difficulty of performing the behaviour in question, which reflects to the past experience as well as impediments onwards”* (Ajzen, 1991). This notion of perceived behavioural control indeed assesses the degree of intention, rooted in motivation towards behaviour itself in that the behaviour could be accomplished or not. Thus, the greater the favourable attitude, subjective norm as well as behavioural controls towards

behaviour, the greater an individual's intention may be triggered to execute the behaviour (Ajzen, 1991). The logical aspect behind the influence of perceived control on behaviour is that perceived control has a motivational impact over behavioural intention. As the level of control over accomplishing a definite behaviour is low, individual's intention to perform that behaviour is probably to be low, even if a positive attitude is obtained (Madden et al., 1992). ***For online shopping context, perceived control is not only implied as an interaction with the product itself but also as a consequence of the interaction behaviour with the website and its features (Koufaris, 2002).*** Unlike physical shopping, online buying entails more information leading to a higher efficiency and less efforts, which ultimately results in demanding further control by customers (Jarvenpaa & Todd, 1996). Prior studies demonstrated the significance of perceived control for online shopping (Karjaluoto, Lehto & Jayewardene, 2008, Koufaris, 2002; Wang, 2014; Wolfinbarger & Gilly, 2001). ***Wolfinbarger & Gilly (2001) posited that finding the desired information on a website and following a system that allows information to be personalized are likely to develop the level of perceived control.***

The perceived behaviour control construct is made up of two components: ***self-efficacy and facilitating conditions respectively, which are another set of belief attributes impacting on perceived behavioural control*** (Taylor & Todd, 1995). Self-efficacy refers to “*an individual's self-confidence in his/her ability to perform an action, or one's judgment about his competency/ability to use IT/Internet purchase*” (Lin, 2007; George, 2004; Taylor & Todd, 1995; Fishbein & Ajzen, 2011; Ajzen, 1991). Compeau & Higgins (1995), referred to self-efficacy as a potential and personal characteristic, which incurs individual's making-decisions on using computers. Such influences can heighten a person's emotional reactions, which ultimately leads to positive attitudes and trusting in this type of technology i.e., information and communication technology (ICT). Self-efficacy resembles perceived ease of use in TAM model, and in the online shopping sphere, if a person has self-confidence enough in purchasing online, he will feel rigorously positive towards his behavioural control over online purchasing (George, 2004; Lin, 2007; Davis, 1989). Another component of the perceived control behaviour relates to ***facilitating conditions***, which refers to “*the availability of resources needed to engage in a behaviour;*” ***either having the equipment or externally based resource constraints such as money, time, technology and other specialized resources, which may contribute or inhibit online purchasing*** (Taylor & Todd, 1995; Fishbein & Ajzen, 2011; Lin, 2007). In a similar vein, Venkatesh et al.

(2003), defined, in proposing his UTAUT¹ conceptual model, facilitating conditions as “*the degree to which an individual believes that an organizational and/or technical infrastructure exists to support/facilitate use of the system*”. He then postulated that this concept entails “*the aspects of technological or organizational environment that are designed to remove the impediments to use.*” As a result, **the conception of self-efficacy considered as an internal factor, while facilitating conditions as the external one.** Facilitating conditions may adjust an individual’s attitude on a personal situation, and hence could have the influence on one’s intention on online-buying decisions as it is a significant determinant of perceived behavioural control (Taylor & Todd, 1995). In view of above, the following illustration demonstrates TPB conceptual model. In this model, attitude as well as subjective norm, the latent independent variables, flow directly to intentional behaviour (dependent variable). The perceived behavioural control, the independent latent variable, also directs to intentional behaviour and behaviour itself (dependent variables) accordingly.

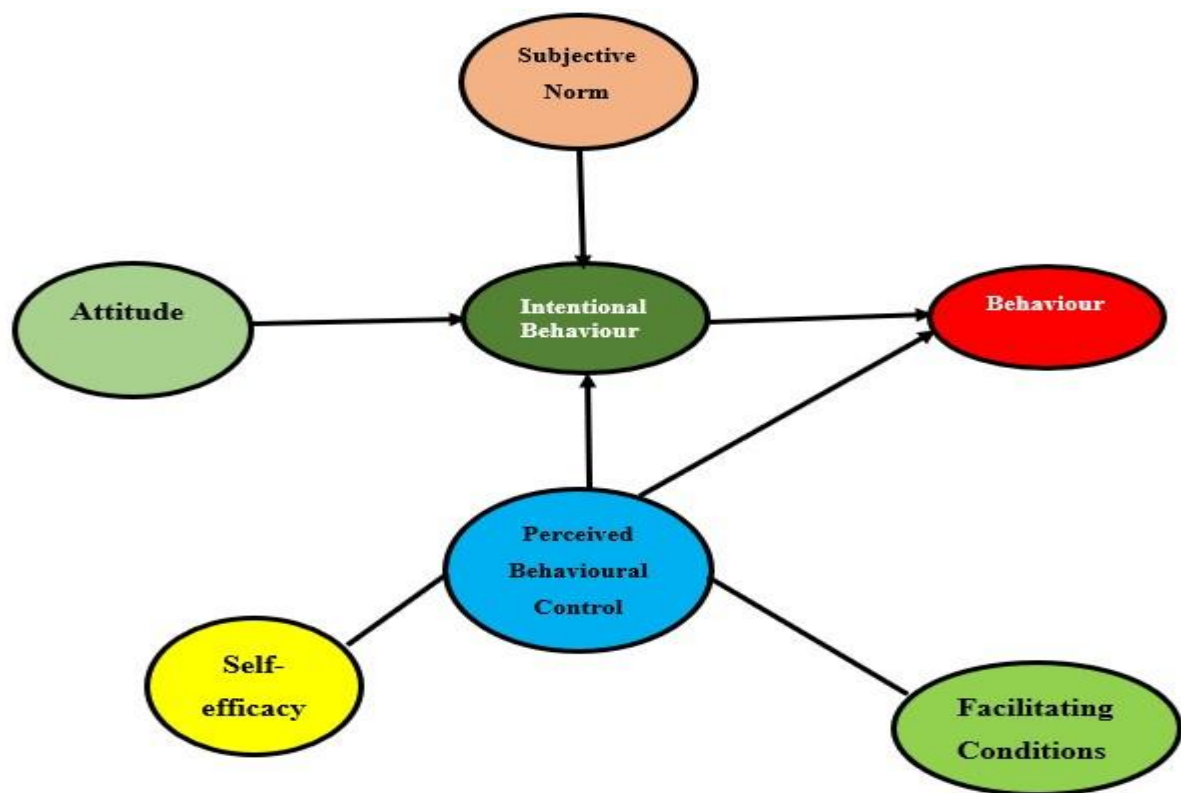


Figure 1-3: Theory of Planned Behaviour (TPB) Conceptual Model (Ajzen, 1987, 1991)

¹ The Unified Theory of Acceptance & Utilization of Technology

1.5. Justification for TPB as the Principal Model

As decision-making process on the online shopping context entails psychological, social and behavioural aspect of consumers, TPB is widely used for examining peoples' perceptions leading to behavioural actions (Ramus & Grunert, 2004). ***The studies revealed that TPB could have been better gauging the behavioural intentions*** (Rejali et al., 2023; Taylor & Todd, 1995; Bhattacharjee, 2000; Lin, 2007; Mathieson, 1991; Cheng, 2019; Madden et al., 1992). Thus, this study adopts the Theory of Planned Behaviour conceptual model for examining the relevant factors contributing to purchase items through online social networks.

Moreover, TPB is particularly suitable for research on online purchasing behaviour because it integrates both motivational and control-related determinants of decision-making, which are essential in digital consumption environments. Unlike other intention-based models, TPB addresses not only cognitive evaluation (attitude) and social influences (subjective norm), but also individuals' perceived ability to execute the behaviour (perceived behavioural control), which is highly relevant in online contexts characterized by technological uncertainty, varying levels of digital literacy, and differing access to resources. This broader theoretical scope enables a more comprehensive explanation of why consumers intend to purchase online and how these intentions translate into actual behaviour. Numerous empirical studies have shown that including perceived behavioural control substantially increases the predictive power of behavioural models in e-commerce settings, confirming TPB as a robust and empirically validated framework for studying online purchasing decisions. As such, TPB provides a theoretically grounded and methodologically reliable basis for analysing behavioural dynamics in online shopping, which justifies its selection as the principal model in this dissertation.

1.6. Mediation Mechanism: The Role of Trust in the Context of Online Shopping

As the notion of trust is one of the consumer/individual's characteristics, trust and risk have been always the matter of discourse analysis of online shopping area (Das & Teng, 2004). Trust/distrust concept occurs in men's routine life, which forms a blend of feelings and rational thinking (Lewis & Weigert, 1985). Back in history, from the outset of human-life on the earth, mankind always had to trust/distrust his environment as well as the danger he may have envisaged in his surroundings. Trust indeed is a social reality and involves perceptual aspect and subjective

interpretations that can be directed via individual or group/organizational relationship (Mayer et al., 1995; Rousseau et al., 1998; Lewis & Weigert, 1985). In the mediation mechanism; however, trust is the core element, which enables shopping at the online buying context (McKnight, Cummings & Chervany 1998; Gefen, 2000; Gefen & Straub, 2004; Komiak & Benbasat, 2006).

From the perspective of the mediation mechanism, trust functions as a reducer of uncertainty and perceived risk in online transactions: it mediates the relationship between environmental attributes (e.g., service quality, payment security, seller reputation, the presence of social cues) and both purchase intention and purchasing behaviour (Quintus, Mayr, Hofer & Chiu, 2024). Approaches to trust in e-commerce consistently show that trust lowers perceived risk, thereby increasing willingness to transact, and that its sources (familiarity, institutional credibility, beliefs about the competence, integrity, and benevolence of the vendor) constitute channels through which design- and organization-related stimuli affect consumer decisions. In integrated models (e.g., TAM + trust + risk), trust serves as a transitional factor: by mediating the influence of information/service quality and security mechanisms on transactional intentions, it explains variance beyond the classical constructs of usefulness and ease of use (Qalati, Vela, Li, Dakhan, Thuy & Merani, 2021). Empirical studies demonstrate that familiarity with an e-vendor and with online purchasing processes strengthens trust, which in turn drives purchase intentions — precisely as the mediating link between environmental characteristics and consumer behaviour (Pavlou, 2003; Gefen, Karahanna & Straub, 2003).

An essential component of the mediation mechanism lies in the dimensions of trust: the vendor's ability/competence, integrity, and benevolence (trustworthiness), which correspond to the consumer's implicit questions: "Are you capable?", "Will you be honest?", and "Do you have my best interest in mind?". The classical integrative model of organizational trust (Mayer, Davis & Schoorman, 1995) systematizes these dimensions and links trust to risk-taking in a relationship — and, analogously in e-commerce, the purchase decision represents an act of controlled vulnerability facilitated by trust. In online shopping research, this cross-sectional perspective has been expanded by incorporating the concept of social presence in interface design, which amplifies perceived benevolence and relational warmth, thereby strengthening the influence of trust on purchase intentions (Farhat, Yang, Ahmed & Hasan, 2025). Experimental studies have shown that higher social presence and credibility cues enhance the dimensions of trust, which

then — through the mediating role of trust — increase consumers’ willingness to transact, illustrating the functioning of the mediation pathway (Mayer, Davis & Schoorman, 1995).

Finally, the literature points to specific trust-building mechanisms that feed into the mediation pathway: personalization and recommendations (which enhance both cognitive and emotional trust), reputational feedback and rating systems (which reduce information asymmetry and generate price premiums for reputable sellers), as well as clear privacy and security policies (which decrease perceived risk). Research has shown that personalization and familiarity with a solution increase both cognitive and emotional trust, which indirectly (through mediation) translates into technology adoption and purchase intentions. At the same time, reputational mechanisms in electronic markets induce “calculative” trust and higher prices achieved by sellers with strong reputations, thereby influencing consumer behaviour through trust as the mediator (Quintus et al., 2024). Overall, the trust–risk–behaviour paradigm confirms that trust is the key integrating element that links technological, social, and institutional factors with online purchasing decisions (Sherrie, Komiak & Benbasat, 2006; Ba & Pavlou, 2002; Kim, Ferrin & Rao, 2008).

1.7. The Localization of Variables

The study has exerted the localization of these detected factors closely into the model according to the ex-ante definition of terms (attributes)² as well as utilization of the available predictors exist in the TPB model³. Thus, *perceived online trust* is exerted into the *behavioural intention predictor* as the focal point (mediator) to measure online purchase in the virtual network as intention to trust and/or trusting leads to the ultimate behaviour (Lim et al., 2016; George, 2004).

The perceived product awareness, perceived price advantage as well as perceived payment transaction safety (perceived benefits) are converged into the dimension of *attitude* towards behaviour (Hebbar et al., 2020; Li & Zhang, 2002; Arora & Aggarwal, 2018; Arora & Rahul, 2018; Bhati et al., 2022; Alhaimer, 2022). According to Ajzen (1987), the influence of attitudes/personality traits on behaviour is assumed to be under the interaction and impacts of

² (*Ibid.*, Introduction, p. 11).

³ (*Ibid.*, Introduction, p. 10; Chapter 1. p. 21).

other variables. Attitudes are made up by cognitive and affective tendencies and they vary with respect to particular nature of each individual. According to Kotler & Keller (2012; 194), *“Attitude can be described as person’s enduring favourable or unfavourable evaluation, emotional feeling, and action tendencies toward some object or idea”* (Akar & Topçu, 2011). In a similar fashion, a person may find an e-store website feature pretty good enough for online purchasing by evaluating all these three above-mentioned attributes, while the other may not. Thus, an e-store perfect website features perception depends entirely on an individual’s attitude (Tran & Nguyen, 2022).

The *Social influence* is converged into the dimension of *subjective norm* under external influences as subjective norms delineate how relevant others will react if the action is performed (Ramus & Grunet, 2005; Lin, 2007). *Perceived web quality* is converged into *perceived behavioural control* construct matching with *facilitating conditions* attribute, which refers to the lack or proliferation of external resources/technical infrastructure, which probably inhibiting or facilitating the performance of an action (Ramus & Grunet, 2005; Lin, 2007). *Past online shopping experience* is converged into the *self-efficacy* attribute of *perceived behavioural control* dimension, which pertains to the ability of consumer to perform an action in question in that how easy or difficult it is to perform (Ramus & Grunet 2005; Lin, 2007). Perceived control delineates the level of control an individual has over environment and actions (Hui & Bateson, 1991; Koufaris, 2002). According to TPB, intentions can be triggered to the actual behaviour if that behaviour is only under an individual’s perceived control (Ajzen, 1985; Madden et al,1992).

Chapter 2. Literature Review

2.1. Introduction

In Chapter 2; firstly, the evolution of e-commerce as well as the antecedents of trust in the virtual environment discussed. Second, a thorough review of factors influencing e-purchase decisions would be elaborated. Third, a critical analysis of prior studies would be performed, and finally, research gap and justification of hypotheses delineated.

2.2. The Origin of E-commerce & the Significance of Online Shopping

The notion of commercial trade backs to the early emergence of mankind as it was an inevitable need of humans handling their routine life. When there was no monetary system yet invented, man had to provide his items by bartering with the others. As early as 1200 B.C., the Phoenicians were the first tradesmen who sailed their ships beyond their frontiers for the fruitful offshore trading (Sommer, 2009). Later, for the ease of business, coins were used instead of bartering in the Lydian Kingdom era 650 B.C. (Stern et al., 2023). Then, in the 7th century, as the number of deals and business grew amongst the people, notes were introduced by the Chinese first for the ease of daily bargaining (Mikhaelis, 1988). It was since then that business and trading have been developed gradually amongst the nations, and the commercial terms of economy, banking, money-exchange, foreign trade, money transfer, and so on have become prevalent.

By the advent of the Internet, e-commerce stepped into the former traditional trading system. Indeed, e-commerce (e-shopping) is the new phenomenon in the third millennium once invented by Michael Aldrich, the British entrepreneur, in 1979 by means of a computer and a telephone device (Kazinik & Stenge, 2023). It was no later than 1990's that web 2.0 promulgated until now, and many e-retailers/e-stores engaged themselves in the e-business activities by utilizing www as the main medium portal platform for their online transactions (Jadhav, 2021). In the e-literature, e-commerce has varied definitions. In a nutshell, e-commerce refers to "*selling and buying of goods, services and information over the Internet*" (Goutam, 2020). To date, the most internationally recognized and eminent practitioners in the e-commerce industry are Amazon, eBay, Alibaba, etc., of which there is an estimation of more than billions of dollars daily turnover running globally in such virtual networks thanks to the Internet innovation (Kazinik & Stenge, 2023).

E-commerce in Poland, the location of study, has been also in growth and dynamically developing in recent years (Chomać-Pierzecka et al., 2022; Kinal, 2022; Dębicka et al., 2018, Zatonatska, 2018). The statistics shows that 20 million users just aged 16-74 purchased online in Poland in 2020, and it's still growing (Macioszek & Jurdanad, 2022; Wodnicka & Skrupel, 2021). As such, the statistics forecasts an overall increase of the value of the Polish e-commerce market estimated to be PLN 118 billion by 2024 (Macioszek & Jurdanad, 20 22). Glińska & Urszula (2018), in an empirical study found that lower prices, functional attributes of e-store, convenience of e-shopping, and shopping as the leisure activity are the major factors in online purchasing in Poland of which lower prices detected as the highest weighting impact. Thus, since there has been rare research on consumers online shopping behaviour in Poland in the extant e-literature hence the study attempts to fill the gap by conducting further research on this domain.

2.3. The Antecedents of Trust in the Online Purchasing

In the literature, there is no universal consent about the definition of trust as each scholar described it in its own way of perspective (Grabner-Kräuter & Kaluscha, 2003; Beldad et al., 2010; Hobbs & Goddard, 2015; McKnight et al., 2002; Rousseau et al., 1998). As such, the definitions, types and various dimensions of trust have been untidily scattered in the literature. While there is some favourable consensus among some scholars in defining trust element as what it is, the contradictions from the others can be concurrently inferred on the other side (Mayer et al., 1995; Corritore et al., 2003). Gefen (2000), defined trust as “the confidence a person has in his or her favourable expectations of what other people will do, based, in many cases, on previous interactions.” McKnight et al. (2002), segmented the concept of trust into the initial trust, institutional trust, trusting intentions, trusting beliefs and disposition to trust. By initial trust it meant: “To trust an unfamiliar trustee, a relationship which the actors do not yet have credible, meaningful information about, or affective bonds with each other.” Another definition posited by Mayer et al., (1995) is “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.” Sahney & Ghosh (2013) delineated online shopping trust as “the belief that online seller can be trusted; it is a feeling of confidence and security towards the online transactions.” All in all, there is little consensus on the specific dimensions and unitary definition of trust as it is a multi-faceted dimension and still remained as an ambiguous phenomenon (Mayer et al., 1995). Thus, further research is eventually

required to be conducted on the scope of online trust to realize this concept better than ever (McKnight, 2002).

Trust can be viewed from various standpoints. Being an interdisciplinary context, trust has been extensively investigated in the psychological, political, economics, management and sociological literature (Punyatoya, 2018; Lewis & Weigert, 1985; Hosmer, 1995; Corritore et al., 2003). To date, trusting by the people helps the society achieves its daily business and economic goals and objectives more smoothly, and thus many distrustful intentions or apprehensive sentiments indeed disintegrate. Trust and trusting beliefs are deemed as people's attitudes (Das & Teng, 2004; Beldad et al., 2010; Rousseau et al., 1998; Komiak & Benbasat, 2006; Sahney & Ghosh, 2013). Trust shapes attitudes (Hobbs & Goddard, 2015), and attitudes entail feelings, beliefs, knowledge about the other party's trustworthiness, and can be fluctuated reciprocally over the time under the influence of trusting experience; that is to say, trust grows/falls down from the interactions between people's values, emotions, moods and attitudes (Jones & George, 1998). Trusting or trusting intentions encompass risk perceptions that manifests uncertainty avoidance in a personal/institutional relationship. Such an uncertainty aversion depends on the valence and intensity of situational unpredictability or unfamiliarity of the trustee. Thus, predictability and familiarity are the prerequisite for the trustee as being trustworthiness (Gefen, 2000; Mayer et al., 1995).

According to Lewis & Weigert (1985), trust has three dimensional spheres, namely cognitive, affective as well as behavioural features. As such, they deemed cognitive trust as the constituents of behavioural trust. They maintained that trust emanates from cognitive process for discriminating among the trustful/distrustful people or organizations. Given this view of trust as a cognitive process, it is; therefore, the one that cognitively opts whom he will trust and based on what circumstances or criteria he decides to trust. Cognitive trust relates to *how far an individual develops good reasons that the others could be trusted* (Morrow et al., 2004). In a similar vein, it denotes to the degree to which an e-consumer believes in the e-vendor's capabilities. Likewise, affective trust implies to *the emotional bonds of friendship and love that exist between parties* (Lewis & Weigert, 1985; Mc Alister, 1995). In comparison, cognitive-based trust conveys aspect of reliability of the e-vendor, whereas affective-based trust is "the feeling of being certain or uncertain relying on the e-vendor" (Bartlets, 2015). Both the cognitive and affective processes help trust being developed (Punyatoya, 2018; Williams, 2011). Mc Alister (1995), found that the

level of cognitive-based trust should be higher than the level of affect-based trust until it would be developed. This highlights that cognitive trust affects emotional trust, which is complementary to cognitive basis (Punyatoya, 2018; Lewis & Weigert, 1985). Albeit cognitive trust rests on corporate/group behaviour, emotional trust made by the relationship between the consumer and the seller (Mayer et al., 1995). Lastly, the behavioural aspect of trusting is: *taking of a risky course of actions on the assured expectation that all the people involved in such an action will act adeptly* (Lewis & Weigert, 1985). As such, behavioural trust is generated situationally based on cognitive and affective/emotional trust. However, there is a controversy amongst the scholars that trust is not a behaviour rather a psychological, inter-personal trait and/or characteristics that ultimately yields to such trustful/distrustful behaviours (Rousseau et al., 1998; Jones & George, 1998; Lewis & Weigert, 1985).

Mc Knight et al., (1998) identified ability (competency), integrity and benevolence as the key antecedents/attributes of trust. Ability refers to *“the skilfulness or competencies that a trustee may have,”* or *“company/seller’s capacity to have customers,”* integrity as *“the consistency of the trustee’s past actions and credible action,”* or *“the willingness of the company/seller to keep their promises in selling process or confidence in the consumer’s view,”* and benevolence: *“extent to which a trustee is believed to do good to the trustor,”* or *“welfare of consumers; talking about generous behaviour that will benefit consumes.”* (Kaur & Khanam Quraeshi, 2015; Yeon et al., 2019). These three antecedents are the mostly used in common as well as highly cited attributes of the trust dimension in the prior researches existing in the e-literature, and recognized under the category of cognitive-based trust (Yeon et al., 2019; Mayer et al., 1995). Predictability/familiarity were added later as another attribute of trust as well (Gefen & Straub, 2004; Mc Knight, 1998; Gefen, 2003; Mayer et al., 1995). Predictability is [*“a belief that the other’s actions will be consistent’ (e.g., good or bad actions based on past experience)”*] (Briggs et al., 2004; Corritore et al., 2003; Grabner-Kräuter & Faullant, 2008; Mayer et al. 1995; Mc Knight & Chervaney, 2001). Akin to predictability, familiarity also conveys *“prior favourable behaviour by the trustee, and/or one’s understanding of another’s behaviour based on prior interactions or experiences”* (Bhattacharjee, 2002; Gefen et al., 2003; Komiak & Benbasat, 2006). Mayer et al. (1995), indicated trust as a subjective aspect and interpreted it in three approaches namely: propensity theory, behavioural decision theory and situational approach. Propensity theory pertains to the individual’s features, and that how a person intends to trust. In behavioural decision theory, immediate situational factors focused and assumes that trust is a relatively rational decision-

making process, and for situational approach, situational and organizational factors as well as institutional structures influencing the trust in question (Yeon et al., 2019). The three antecedents, which proposed for the propensity of trust are: personality, experiences and culture asserting that initial trusting differs across the people's cultures (Shoorman et al., 2007).

Rempel (1986) posited predictability, dependability, and faith as three constituents of interpersonal trust. By predictability, he referred to the same prior definition of predictability that it can be influenced by reinforcement or social exchange analysis wherein the prediction of a party's future behaviour relies widely upon the knowledge pertaining to the consistency of responses in the past. As predictability solely had some failure in measurement of trust, he added dependability and faith to his model, both of which had to do with interpersonal reliance and emotional feelings towards the other party. Lewis & Weigert (1985) discussed two aspects of trusts, namely interpersonal trust and system trust. Personal trust occurs when there is ample emotional and affective bond between individuals, whereas system trust happens while there is a belief that everything functions well in its own order. Such a trusting belief should be actually mandated for a community so as to manage its rudimentary societal affairs such as selling and buying properties, devising laws and regulations by the official representatives, legitimacy of cultural as well as monetary rules and so forth. Without having a basic public trust, the principal values and moral investments of a society would be annihilated (Lewis & Weigert, 1985). Taking it for granted that trust is a multi-faceted dimension, Jones & George (1998) in the study of the evolution of trust in organizational sphere illuminated trust as conditional and unconditional forms. In conditional trust, it is a *“state of trust in which both parties are willing to transact with each other, as long as each behaves appropriately, uses a similar interpretive scheme to define situation, and can take the role of the other. In conditional trust, the attitudes of one party towards the other are favourable enough to support future interactions”* (Jones & George, 1998). Conditional trust is the facilitator of social and economic changes and exists in the organizational framework, where knowledge as one of the bases of trust or expectations of the other is prevalent (Jones & George, 1998). In unconditional trust; however, *“each party's trustworthiness is assured, based on confidence in the other values derived and repeated from behavioural interactions”*—the knowledge of the other party, which preserved in one's attitude (Jones & George, 1998).

Trust, in general, is derived from the social, cultural and psychological aspects of life (Punyatoya, 2018; Walczuch & Lundgren; 2004; Das & Teng, 2004; Shankar et al., 2002). Walczuch & Lundgren (2004), identified the psychological antecedents of institution-based trust as: personality, perception, experience and knowledge-based factors as well as attitude, which breaks into other sub-categories. By institution-based trust, they here meant general trust people may have in e-shopping.

2.4. The psychological antecedents of institution-based trust

2.4.1. Personality-based Factors

By personality-based factors, it implies to the specific internal trait and characteristics that an individual uniquely possesses of (Dibb et al., 2019; Carver & Scheier, 2009; Olsun & Suls, 2000). Personality factors are split-up into the following according to the Trait Theory of Costa & McCrae (2000). Extraversion, neuroticism, agreeableness, conscientiousness and openness to experience. *Extraversion* is akin to being an extrovert. An extrovert has an outdoor attitudes and feelings, he fears of being locked indoors, and always would like to spend his time with friends, having parties, outgoing activities etc. Thus, these types of people highly likely trust e-vendors because of the nature of having such an attitude. *Neuroticism*, on the other hand, pertains to low self-esteem, being unstable and having low self-control and confidence—just like an introvert. Having low perceived control, causes lack of trust in the online shopping (Walczuch & Lundgren, 2004). Consequently, people who score high on *agreeableness* are those who usually care about the values and interests of the others, and believe positively that such a trustworthiness is reciprocal. This is against the beliefs of those, who don't mind what others think, and thus score low or no respect on the other's interests. Hence, those who have a positive agreeableness tend to be known as high trustful (Walczuch & Lundgren, 2004). In a similar vein, people who score high on *conscientiousness*, recognized as being responsible, dutiful and thus trustworthy. They are rather serious and cautious about their decision-makings, and hence could be deemed as trustful. *Openness to experience* is the same as open-mindedness. An individual that possesses openness to experience is willing to take more risks, in contrast with those who take conservative procedure; thus, they would be regarded as high trustful individuals.

Walczuch & Lundgren (2004) also added another attribute to the above factors namely propensity to trust. *Propensity to trust* is the same as disposition to trust, and conveys the

likelihood that an individual could be susceptible to trust. In literature this attribute has been much utilized in the trust model as a mediating, moderator, control or independent variable to trust (Ambrose & Johnson, 1998; Chung & Lee, 2000; Mayer et al., 1995; Shoorman & Mayer, 2007). Indeed, those who possess higher propensity to trust, they will highly likely dare to confront with online shopping (Cheung & Lee, 2006).

2.4.2. Perception-based Factors

By perception-based factors, six sub-category factors were gleaned by Walczuch & Lundgren (2004) from the literature. They are perceived reputation, perceived investment, perceived similarity and perceived normality of e-vendor as well as perceived control and perceived familiarity of consumer (Das & Teng, 1998; Gansean, 1994; Jarvenpaa et al., 2000; McKnight et al., 1998; Milne & Boza, 1999; Nissenbaum, 2001). First, a *perceived e-vendor reputation* can be viewed from two points; firstly, an institutional/organizational entity can gain its reputation either by the online/offline information and reviews of customers, who had already purchased and obtained their past experience from the related e-vendor's performance, or by the size of its company (Jarvenpaa et al., 1999). Such customers' reviews could be described as word-of-mouth, e-word-of-mouth, family or group references (Jarvenpaa et al., 2000; Chan et al., 2003; Darley et al., 2010). Besides, whatever a larger company (in size) is, much higher e-trust in view of the e-clients will be involved (Jarvenpaa et al., 1999). Thus, the perceived e-vendor reputation has influence on the client's e-trust (Qalati et al., 2021; Suki et al., 2017). The second attribute i.e., *perceived investment* is the commercial relationship between vendor and retailer. It denotes to the "*perceived quantity of resources that a vendor has invested in his business.*" Such resources could be illustrated as investment in people and assets like; training retailer's salespersons in merchandizing, promoting displays, e-linkups for inventory control/ordering as well as providing information on the new products. Thus, an investment perception by retailer incurs to view the higher credibility and benevolence of the vendor, and hence trust him in a more fashionable manner (Ganesan, 1994). Third, *perceived similarity* refers to "*the degree to which people who interact are similar in beliefs, education, and social status*" (Fu et al., 2018). Thus, an e-client, who observes an e-vendor akin to him/her in terms of beliefs or characteristics trust him/her easier (Fu et al., 2018; Walczuch & Lundgren, 2004). Then, *perceived normality* is "*a properly ordered setting that appears likely to facilitate a successful interaction*" (McKnight et al., 1998). In perceived normality, the consumer perceives the buying process and its situation as

normal (Walczuch & Lundgren, 2004). Thus, perceived normality has an influence on e-trust (Walczuch & Lundgren, 2004; Yousafzai et al., 2005). Next, *perceived control* is “*the consumer’s perceived power to influence the other person’s outcome, and hence to reduce any incentive he may have to engage in untrustworthy behaviour*” (Walczuch & Lundgren, 2004). For instance, if a person conceives that he has the power to influence the outcome of transactions, he is more likely to trust the other person. Such power and structural assurance can be found under guarantees, regulations, promises and legal resources (McKnight et al. 2002). Perceived control is a behavioural consequence of cognition-based trust concept (Walczuch & Lundgren, 2004; McAlister, 1995). Lastly, *the perceived familiarity of consumer* is the mere exposure to person, store, event etc. It conveys that more an individual exposed himself to a certain stimulus, more positively he evaluates it and hence trust it’. Familiarity varies from experience in that experience occurs over time (Walczuch & Lundgren, 2004).

2.4.3. Experience-based Factors

The client’s experience is acquired through active participation in the online purchasing process, and its attributes are: experience over time, satisfaction and communication (Walczuch & Lundgren, 2004). The client’s *experience* with the online shopping mechanism will be gained gradually by actively engaging in it. In the meantime, consumer’s experience has a significance on satisfaction and re-purchase shopping, and eventually trust (Shankar et al., 2002; Corritore et al., 2003; McKnight et al., 2002). However, a mere experience is not adequate for online trusting. In order to have a continuing relationship between the e-vendor and e-consumer, the e-consumer should feel *satisfaction* from his past online shopping experience (Ganesan, 1994; Singh & Söderlund, 2020). Thus, people who have already had positive experience and satisfaction at the same time in the online buying process, consider e-shopping as trustworthy and reliable (Walczuch & Lundgren, 2004). As such, communication also is another attribute that plays an important role in the e-shopping trust. *Communication* indeed is the “*information or knowledge that is shared between the exchange parties*” i.e., seller and buyer. This communication through social media heightens seller’s responsiveness as well as e-client’s satisfaction and trustworthiness (Agnihotri et al., 2016). This type of knowledge is remarkably predominant between salesperson and customer in the industrial marketing zone. Indeed, this is the most principal and alphabetical duty of an industrial marketer, who should provide as much as information and knowledge about the product that he intends to sell to his customer. CRM

(Customer Relationship Management) is the best virtual tool incorporated at social media to interact with demands, complaints, promotions, queries etc., between the seller and buyer, which can enhance the online shopping procedure as trustful (Agnihotri et al., 2016).

2.4.4. Knowledge-based factors

Knowledge-based factors is distinct from the experience/communication in that knowledge here refers to the *technical awareness* by the e-consumer. Its attributes are known as knowledge about information practices and knowledge about security technology (Walczuch & Lundgren, 2004; Milne & Boza, 1999). In knowledge about information practice, it argues that people who possess knowledge about information practices are cognizant of whether or not it is applicable for a vendor to retrieve information from certain sources without being notified by themselves. This could be inferred as eliciting personal data such as one's address, name, e-mail, surfing behaviour etc. by the e-vendor. Thus, those who perceive the negative information practices may trust least. On the contrary, the e-consumers who are aware of what will be happening in utilizing information practices will trust more as they realize it under their control (Walczuch & Lundgren, 2004). Likewise, knowledge about security technology refers to the people who possess knowledge about security technology in that how it can be recognized or guaranteed. This type of awareness helps dramatically the e-client to evaluate a website feature, and based on it, judge the e-vendor as being genuine or fake consequently.

2.4.5. Attitude-based factors

Attitude in utilization of virtual network pertains to the client's belief of trust in online shopping as attitudes and trust are interchangeable. Walczuch & Lundgren (2004) viewed online buying attitude in a three scope, namely attitudes towards computer, Internet and shopping. People distrust using computers when they receive errors by them. However, this lack of trust may be diminished if the user finds such errors as normal or predictable on computer-mediated services (Corritore et al., 2003). Internet is also as an object of trust (system trust). As it is assumed that the Internet mechanism is set up in such a way that functions properly and being predictable, people will trust it at first glance by such a system-dependent certainty, and view computer, Internet and shopping as a hedonic device for their entertainment, too (Grabner-Kräuter & Faullant, 2008). Thus, positive attitudes towards computers, Internet and shopping incur e-consumer to trust in e-shopping (Walczuch & Lundgren, 2004). In sum, to have a better view of

what has already discussed above, the figure illustrates psychological factors revolving around institution-based trust in e-shopping.

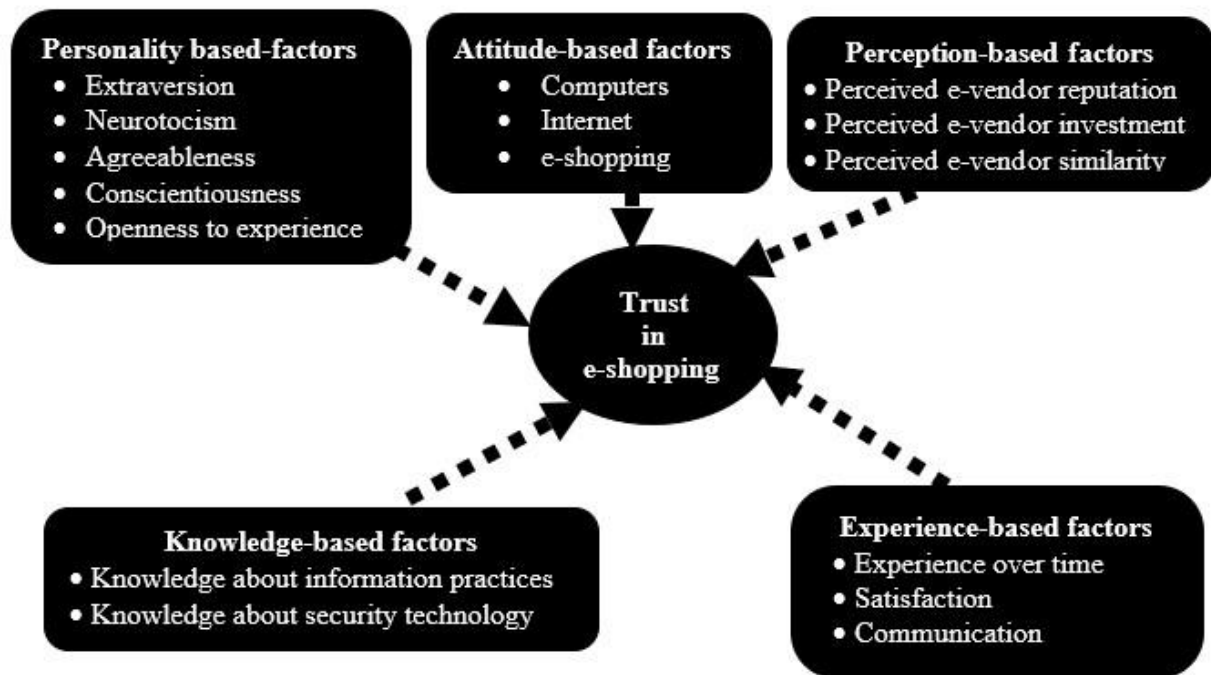


Figure 2-1: Psychological factors of institution-based trust in e-shopping (Walczuch & Lundgren, 2004)⁴.

Corritore et al. (2003), analysed dimensions of trust at four levels such as generality, kind/type, degrees and stages. By *generality*, it refers to the trust span, which extends from general to specific trusting. An individual may have overall trust in a person, group or technology as general trust, or trust in them assuming that they will perform a specific thing in a particular situation (Corritore et al., 2003). In the online sphere, for instance, general trust occurs when one expects governmental websites issue regularly and trustworthy news. The specific trust also happens when one expects transactional or informational content of an e-vendor's website functions accurately and properly. According to them, slow and swift trusts are various *kinds* of trusts. A slow trust is the one that grows and develops naturally over time by long-term relationship, while

4. Based on author's source study.

swift trust resembles a sudden quick behavioral reaction towards the fulfilment of an expected action by the other party, e.g., inserting one's debit card account number in a virtual retailing website environment to buy something online. Swift trust incurs when relationship quickly created and then terminates. As such, Corritore et al. (2003), also referred to cognitive and affective trusts as the other two principal trusting types found in the extant literature (Mc Alister, 1995; Lewis & Weigert, 1985). As it was already discussed above, cognitive trust pertains to the rational reasons and decisions in why trusting the other party is worthy, whereas affective trust entails strong positive and emotional feelings towards the object/party to be trusted. Psychologically, these two types of trusts emanated from interpersonal relationship, and inextricably intertwined with each other. In a similar vein, cognitive and affective trust may both exist at the same time, while one of them may emerges without the other end (Corritore et al., 2003). Next, by *degree of trust*, it implies to the depth of trust an individual possess. Furthermore, degree of trust parts into three divisions as basic, guarded and extended trust. Firstly, *basic* trust relates to the “*underlying background form of trust*” (Corritore et al., 2003). It is the preliminary instance of trust, which is absolutely essential for the social life process being handled; like the matter of routine such as trusting to practical implementation of civil and criminal laws and regulations in case of being abused, violated or discriminated. Secondly, *guarded trust* is indeed taking a measure to avoid uncertainty such as making legal contracts, lease, agreements, invoices etc. Such promises; however, are within a time-limit and specified duration. Thirdly, the *extended trust* is an open-mindedness attitude towards the object/party to be trusted. Extended trust requires to be met with a deeper interpersonal relationship with close friends, family or partners. In the light of online shopping, basic/initial trust works out primarily in the online transactional process (Corritore et al., 2003). Finally, another feature of trust is the *stages* of trusting, which deals with the developmental process of trusting. The stages of trust can be grouped round initial and mature trust (Jarvenpaa et al., 1999). The initial trust is akin to basic trust, a vital societal prerequisite, when an individual has to trust a party/object to perform an action expected by the trustor. The mature trust, on the other hand, is a grown instance of trust that occurs after a consistent positive past experience that a trustor obtained from the trustee.

Rousseau et al., (1998) referred to different forms of trust as deterrence-based trust, calculus-based trust, relational trust and institutional-based trust (Lewicki & Bunker, 1996). *Deterrence-based trust* implies to initial trust that protected by contracts as well as penalties. In other words, deterrence-based trust occurs when the laws and regulation systems do fine the parties who do

not abide by law (Sheppard & Sherman, 1998). As such, *calculus-based trust* emerges when trustor has rational evaluation that the trustee does not intend to harm him for the sake of his own interests (Hobbs & Goddard, 2015; Gefen et al., 2003). By the same token, *relational-based trust* emanates from continuous and consistent interaction over time between trustor and trustee. Reliability and dependability have an influence on relational trust over time as much as emotion, similarity and familiarity play such a role (Rousseau et al., 1998; Hobbs & Goddard, 2015). Lastly, by *institution-based trust*, it conveys two concepts. Firstly, trust not only is the interpersonal fact between the people, but also between an individual and organization/institutions as well (Beldad et al., 2010). Second, institutional trust is also known as system trust, structural assurances or regulatory systems, which pertain to the laws and regulations, guarantees and legal recourse of which they help to a great extent the people to be assured about the outcome of the other party's future behaviour. Besides, institutional trust has an impact on trust (McKnight et al., 1998, 2002; Grabner-Kräuter & Faullant, 2008; Hobbs & Goddard, 2015; Yeon et al., 2019). Another type of institutional trust is *structural normality*, where the apparent situations seem normal. For instance, if a website-feature meets having the basic and technical standard appearance in view of an e-client, just like the other peer websites, it positively provokes the e-client's trust; otherwise, it only erodes such trustworthiness (Gefen et al., 2003). Overall, the economists evaluate trust as either calculus or institutional-based trust, while psychologists observe it as cognitive personal attributes. The sociologists also recognize trust as an interpersonal and institutional properties (Rousseau et al., 1998).

Lewicki & Bunker (1996) also posited knowledge-based and shared identification-based trust as the other developmental stages of trust (Corritore et al., 2003). In *knowledge-based trust*, “*the knowledge of the object and the ability to predict the behaviour of the object of trust concerned,*” whereas in *shared identification-based trust* “*it is “a mature trust that there would be no longer any need for formal contracts or agreements”*” (Corritore et al., 2003). Affective/emotional trusts can be naturally sorted to the identification-based trusts group, where family groups, relatives, couples and close friends can trust each other unconditionally based on the strong positive emotional bonds and interpersonal feelings that they have towards each other, because the trustor feels that the beloved ones do not intend to harm or take advantage of him and/or to abuse him in this way.

2.5. Factors enabling online purchasing

In the e-commerce literature, there are an abundance of published articles regarding online buying decisions with varying usages of theories and topics examining it from various point of views on what triggers a customer's decision-making to purchase online or not (Abu-Alsondos et al., 2023; Kalia et al., 2016; Beldad et al., 2010; Chang et al., 2005)? In the online purchase behaviour context, trust is primarily the focal element that should be considered, because the process of choosing product and buying it, after all, is entirely accomplished remotely (online) and not physically (in person). Such a process may bring anxiety and fear to the buyer for the risk of online transactions; theft of personal particulars such as address, telephone, e-mail, etc. (Chang et al., 2016); neither having nor delaying in refunding as well as concern about the seller that he may have free or chargeable return shipping policies in case of product deficit; online unsolvable disputes that may arise between the seller and buyer, or the product's country of origin manufacturing and so forth.

On the other hand, Internet as well as online shopping has enormously contributed to human daily life-style quality in recent years. In fact, online shopping saves the time both for e-clients and e-sellers; e-consumers can easily find their items by browsing Internet, and find them with competitive and reasonable prices not only in the local e-stores, but also globally. By the same token, through online dealings, there is no longer inexplicable bargaining, which helps streaming seller's cash-flow more smoothly (Jeddy et al., 2022). Thus, the dissipation of lack of trust in view of the e-clients is essential both for the present and future development of e-commerce. Online shopping has dramatically enhanced the economic growth of the European and worldwide states (Beckers et al. 2018; Li & Yuan, 2018). For instance, 39.5% transactions with a 40.6% turnover value detected on paid on delivery payment method; banking transfer to sellers account with 28.70% transactions and 29% turnover value, and integrated online payment methods with 15.9% transactions and 16.9% turnover value found in Poland (Polasik & Fiszeder 2010; Tandon & Kiran, 2019). Therefore, having a profound knowledge and utilization of e-shopping enabling factors and its dimensions are indispensable in to date e-commerce industry. According to the extant literature, there are some internal/individual, inter-related and mediatory factors that affect customers' online trust buying decisions, which is discussed further as the following:

2.5.1. Individual/Consumer Factors

Consumers' characteristics aptly differ from one another in terms of online buying decisions. By definition, individual/consumer factors refer to the particular attributes that a consumer may involve or not. Such attributes could be derived from demographics, attitudes, life-style, motivation, trust, risk perceptions/aversion, innovativeness, price orientation as well as convenience, shopping-orientation, recreation/enjoyment, time-consciousness, values, psychological aspects, personality, self-efficacy— consumer expertise and competency in online shopping (past online shopping experience), which ultimately leads to and/or obstructs behavioural intentions (Chan et al., 2003; Darley et al., 2010; Scarpi et al., 2007; Chung & Park, 2009; Chang et al., 2005; Chen, 2006). Consumer factor is regarded as an internal factor of which the perception of a consumer work out.

2.5.2. Product Factors

The valence and intensity of the information about a special product in the virtual market is as salient as it reveals knowledge about price, brand name, frequency of purchase, tangibility, differentiation, etc. (Scarpi et al., 2007; Chang et al., 2005; Chan et al., 2003; Sindhav & Balaz, 1999). By such information, consumers can definitely make better decisions and opt their desired goods amongst the others. Thus, product factors define the typology of the merchandise, and help e-vendors to sell higher as far as these factors are observed on the image of their products. Product factor is deemed as an external factor.

2.5.3. Environmental Factors

Like product factors, environmental factors are deemed under the external factors. This conveys that an external factor is not directly influenced by individual/consumer perception itself rather mostly by environmental influences. Environmental factors could be ascribed to culture, subjective norms, social influences; e-word-of-mouth, group references, family and social media (Chan et al., 2003; Darley et al., 2010; Chen et al., 2016). The impacts inspired by the environmental factors then can significantly prompt or avoid a consumer for the online trust and hence buying decision.

2.5.4. Web Factors

Online shopping can only be viable through virtual medium channels (Internet). Thus, having a suitable infrastructure for the nexus of e-vendors and e-clients in such a virtual environment (external factor) should be deemed of very high importance by the e-vendors. Web-designing (graphical features), proper user-interface/convenience (ease of use), usefulness (web-satisfaction), reliability, privacy layout, security systems, information/content quality, third party step-in assurance, enjoyment, efficiency, functionality, usability as well as guarantees and warranties, all assist the process of online selling and/or shopping in the realm of virtual networks (Beldad et al., 2010; Chan et al., 2003; Chang et al., 2005; Chung & Park, 2009; Scarpi et al., 2007; Darley et al., 2010; Sarkar et al., 2020; Chen, 2006; Davis, 1985; Chen, 2006).

2.5.5. Retailer/Institutional Factors

Retailer's factors sometimes known as institutional, merchant or company factors are those online selling strategies which are prevalent amongst the retailers themselves. The selling tactics that could be implemented by e-retailers are the online strategies, namely technology risk relievers, web quality—by designing a proper and standard online shopping website, inserting product factor particulars in the image of products, service quality, social/offline presence, reputation, size of the company, on-time delivery and logistics, pricing, after-sale services, incentives/discount coupons policies, easy refund and return, shipping charges options in case of merchandise malfunction, or not delivered as it was first described as well as offline client-responsiveness availability (Scarpi et al., 2007; Beldad et al., 2010; Chan et al., 2003; Chen, 2006; Bramall et al., 2005) The retailer factors could be recognized as an external or intermediary factor that enable/disable e-clients' disposition to trust.

2.5.6. Economic Factors

Purchasing merchandise either via online or offline mode regardless of having a stable income by the consumers, also directly deals with the economic situation of a country; an external factor. If there is a high inflation and low income, there would be a day to day increase of pricing henceforth. Thus, the client's competency in purchasing would be shrinking. The amount of online buying decisions also depends on the economic/social class of the people (Venkatesh et al., 2022). Economic growth as well as inflation fluctuation is inevitable in any country. Thus, in case of having economic recession, e-vendors should devise appropriate incentive programme

strategies such as e-coupon discounts, sale/off offers, e-gift cards, etc. to encourage consumers to buy more (Darley et al., 2010). To have a perspective glimpse of what discussed above, the figure below depicts general online purchasing decision factors revolving around trust.

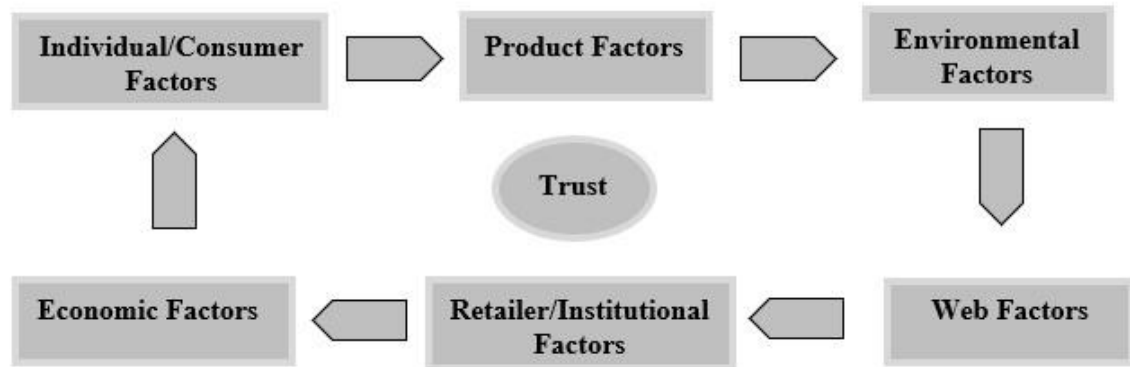


Figure 2-2: Online purchasing decision factors framework

To sum up, factors which were dominant in the online purchasing context was discussed. They were mainly as individual/consumer, product, environmental, web, institutional and economic factors. Furthermore, the antecedents and definitions of trust were elaborated in various dimensions. Cognitive and affective trust were the two pivotal aspects of trust dimension, which were unanimously congruent with prior research conducted in the area of online shopping trust. Given that trust/distrust derived from psychological aspect of the people, the psychological factors of trust was addressed as well. At the end, the views of other scholars towards various types, degrees and stages of trusting as well as institutional trust described.

2.6. Critical Analysis of the Previous Studies

In this part, two broad stages applied for articles analysis. At first stage, the study tried to gather the articles, which were only pertinent to the online shopping behaviour sphere—close to the scope of the current study—and used TPB as their basic model analysis. As such, those articles, which used an integration of TPB with other conceptual models such as TAM and etc., and/or TRA alone were excluded from review as the study only exerts TPB model for its investigation and compares those prior articles that corresponds mainly with the conceptual model of study. Amongst varied targeted databases, the Google Scholar and Scopus opted; for many other databases as well as numerous journals are mostly indexed to such database for its

popularity, easy reference and creditability. In addition, the key words, which utilized for extracting the articles were namely, online purchase, online shopping, online buying, e-buying/shopping/purchasing factors, online trust, theory of planned behaviour (TPB), and e-trust. Totally, after all, there were sixteen relevant articles found by considering the above filtering between the years of 2012-22, which were then classified based on author(s) year, research title, method and results in a table at the end. The articles analyses were reviewed by ascending order as the following:

Javadi et al., (2012) analyzed factors influencing online shopping behaviours by consumers in Iran. They found that financial risks and non-delivery risk negatively affected attitude towards online shopping. As such, domain specific innovativeness and subjective norms positively influenced online buying behaviour. Besides, attitude had positive impact on the online shopping. However, in this study, perceived price advantage, past online shopping experience, perceived web quality as well as e-trust were not considered for examination. Kaur & Khanam Quareshi (2015), investigated the reasons for not buying products online in India. The results revealed positive correlations between intention to trust with integrity, benevolence, competency (the attributes of trust) as well as firm's image, price awareness and purchase intention. The results did not approve propensity to trust and uncertainty avoidance as the moderating role of intention to trust at the end. Nevertheless, none of the perceived product awareness, perceived payment transaction safety, social influence and past online shopping experience were observed for measurement in the study. The impact of e-sellers' website quality influencing e-buyers purchase intention was conducted by Lee et al., (2016) in Malaysia. They concluded that e-sellers' web quality such as web design, web reliability/fulfilment, web security, privacy, trust and web customer service positively affect e-customers' intention to buy online continuously. However, the role of other factors such as perceived product awareness, social influence, past online shopping experience, and perceived price advantage were not applied for investigation.

In another attempt, the study of exploring consumer attitudes and purchasing intentions of cross-border online shopping in Korea proposed by Han et al., (2018). They found that e-service quality of website and consumer needs for uniqueness positively influence on attitudes as well as purchase intentions from international websites. They also postulated that positive beliefs about self-efficacy and normative structure have positive impact on behavioural intentions. In their study, nonetheless, determinants like perceived product awareness, perceived price advantage,

perceived payment transaction safety as well as online trust were not embedded in the research model. Besides, they did not further decompose self-efficacy into an indicator in their model rather just expressed it figuratively. In a similar vein, Kouser et al., (2018) researched on what factors are significant in developing e-purchase intentions of Pakistani youth. The results suggested that amongst four dimensions of web quality namely, web design, reliability, privacy and customer service, only reliability had an impact on e-purchase intentions. Out of three dimensions of trust, benevolence and competence had positive influence on e-purchase intentions whereas integrity with no impact found. On the other hand, there was no evidence for social norms influencing on e-purchase intentions. As such, perceived product awareness, past online shopping experience, and perceived price advantage did not involve in the study. Bhatti & Rehman (2019), examined the relationship between various factors including perceived benefits (convenience, product variety), perceived risks (product risk, privacy risk) on online shopping behaviour in Pakistan with mediating role of purchase intention. The results showed that perceived benefits had positive influence on online shopping whereas perceived risk did not. In this study; however, perceived price advantage, perceived social influence, e-trust, perceived web quality, and past online shopping experience were not included.

In an empirical study on the impact of risk perception on German consumers' online buying intentions (Zoghi, 2019), it was found that perceived behavioural control had impact on consumer's perception of risk as well as e-purchase intentions. E-WOM also didn't have any impact on consumer's perception of risk and e-purchase intentions. Notwithstanding, perceived product awareness, past online shopping experience, e-trust, perceived price advantage, perceived web quality not examined in the study. The perceived control behaviour was not further decomposed to an indicator for examination as well. In 2019, Lubis et al., researched on Indonesian millennial's behavioural intention to e-shopping through Instagram. Albeit the study has utilized all the TPB predictors for examination; however, they did not decompose the TPB predictors into the specified attributes to exemplify an indicator for each of predictors rather examined it in general with predictors namely, attitude, subjective norm, perceived behavioural control, and trust. They concluded that except perceived behavioural control, which did not influence behavioural intention to e-shopping, did the other predictors. In a similar fashion, Hoang (2020) made an investigation on factors affecting e-purchase intentions in Vietnam. It was found that factors namely usefulness, convenience, trust, behaviour control awareness, business competency, and reference group opinions positively influencing e-purchase intentions, whereas

perceived risk had negatively affected customers' e-shopping intentions. In this study, the impact of factors on intention of e-shopping has been just measured, and the behaviour itself, which is the final dependable variable of TPB model not being considered and measured against detected factors. Accordingly, research on attitudes towards online shopping and its influence on purchase intentions; an urban Indian perspective was conducted (Hebbar et al., 2020). The findings indicated that perceived benefits such as convenience, wider selection, price discount had significant impact on attitude towards e-shopping, and attitude as well as domain specific innovativeness had significant influence on purchase intention. As such, purchase intention was influenced significantly by attitude and domain-specific innovativeness, but neither by perceived behaviour control nor subjective norms. The perceived risk did not have influence on attitude either. In this study, e-trust and past online purchasing experience excluded, and behavioural control was not decomposed to an exemplified indicator. Mainardes et al, (2020), analysed the antecedents & consequence of consumers not adopting e-commerce in Brazil. It was revealed that consumer intention was positively influenced by attitude and perceived behavioural control (PBC). Behaviour itself was positively influenced by intention and PBC. No impacts found between subjective norms and intentions. In spite of utilizing all the predictors of TPB model in the study, attitude and PBC were not decomposed into specific exemplified and/or further detected attributes/indicators rather examined by their overall predictors' definitions.

Similarly, in a comparative study in China on e-shopping willingness of fresh agricultural products between the experienced and potential consumers conducted by Cang & Wang (2021). The results depicted that product quality, logistics service quality, e-WOM, and web information quality had significant impact on experienced consumers' e-purchase intentions. All of the above attributes were also significant on potential consumers' e-purchase intentions except the web information quality. Notwithstanding, in the said-research model the role of perceived price advantage, perceived payment transaction safety, and e-trust were not scrutinized. The research only examined the effects of the said features up to the purchase intention, the mediating role of the model, and the ultimate role of behaviour i.e. e-shopping, and the impacts it might have been affected by one of them were not concluded as well. Chetoui et al., (2021) in an empirical study researched on factors influencing consumer attitudes towards e-shopping with the mediating effect of trust in Morocco. The results indicated that relative advantage (convenience), e-WOM and trust positively impact consumers attitudes towards e-shopping. By the same token, trust was influenced by relative advantage and e-WOM, and that trust mediates the effects of relative

advantage and e-WOM on attitudes towards e-shopping. By considering so, the study has not utilized past online shopping experience and web quality and applied attitude by its broad definition, not being decomposed to further converged attributes.

The role of e-service quality (E-SQ) on customers e-purchasing intention: an extended TPB model investigated in India (Bhati et al., 2022). The findings showed that judgements pertaining to websites had strong positive relationship with E-SQ features (reliability, responsiveness, personalization, convenience, trust, and ease of navigation. Besides, the significant positive impact of E-SQ on customer's attitude toward e-purchasing was found. Additionally, access and personality features were not found affecting consumers attitude toward e-shopping. As such, e-purchase features (product quality & quantity, timely delivery, correct presentation of products, web efficiency to perform online transaction quickly, ease of access, security & privacy) found affecting attitude towards e-shopping whereas other features such as receiving personal e-mails from e-vendors as well as time saving and responses to queries were not found significant. Subjective norm as well as perceived behavioural control were found positively affecting consumers purchase intentions. In spite of using almost all the predictors and features of TPB equally for examination the study ignored the role of past online shopping experience exerted for investigation. Quang & Thuy (2022) surveyed the influencing factors on motorbike e-purchase intention of Vietnamese people. The results suggested that customer's attitude toward online shopping is influenced by perceived usefulness (time-saving, cheaper prices, easier product comparison, and geographical barrier removal), external and interpersonal attitudinal factors (mass media, TV, radio, newspaper, social networks, family or friends), trust (e-store reputation, size), as well as risk perception on customers e-purchase intentions except self-efficacy. In view of the above, past online shopping experience and web quality were not taken into examination. Jeddy et al., (2022) in an empirical study in Iran reviewed barriers influencing on e-trust intentions and e-purchasing. The findings demonstrated that there was positive significance between lack of integrity, lack of benevolence and lack of competency with intention to trust. Consequently, intention to trust was statistically significant to e-purchasing. In this study, the dimensions of trusting beliefs (attitude) were only scrutinized, and the rest of TPB predictors such as subjective norms and perceived behavioural control were not incorporated.

To sum up, it can be inferred from the above-articles that none of them has used the complete TPB model for their investigations rather used some individual parts of model's constructs

depending on their own scope of research. This is while this study utilizes all the attributes/constructs of the model effectively to evaluate and verify the conceptual model therein.

Table 2-1: List of review articles

#	Author(s), Year	Title	Methodology	Results
1	Javadi et al., (2012)	An Analysis of Factors Affecting on Online Shopping Behaviour of Consumers	Regression analysis	Financial risks & non-delivery risks negatively affected attitude to e-shopping; Domain specific innovativeness & subjective norms positively affect e-shopping behaviour; attitude towards e-shopping positively affects e-hopping behaviour.
2	Kaur & Khanam Quareshi (2015)	Factors obstructing intentions to trust and purchase products online	CFA & SEM	There were positive correlations between intention to trust with integrity, benevolence, competency as well as firm's image, price awareness and purchase intention. The results did not approve propensity to trust and uncertainty avoidance as the moderating role of intention to trust.
3	Lee et al., (2016)	Online Sellers' Website Quality Influencing Online Buyers' Purchase Intention	Multiple regression	E-sellers' web quality such as web design, web reliability/fulfilment, web security, privacy, trust and web customer service positively affect e-customers' intention to buy online.
4	Han et al., (2018)	Exploring consumer attitudes and purchasing intentions of cross-border online shopping in Korea	Partial least squares & OLS regression-based	E-service quality of website and consumer needs for uniqueness positively influence on attitudes as well as purchase intentions. self-efficacy and normative structure have positive impact on behavioural intentions.

Table 2-1: (Continued) List of review articles

#	Author(s), Year	Title	Methodology	Results
5	Kouser et al., (2018)	How does website quality and trust towards website influence online purchase intention?	CFA & SEM	Website quality & e-trust are positively related to e-purchase intention. Attitude had partially mediating role towards e-shopping.
6	Bhatti & Rehman (2019)	Perceived benefits & perceived risks effect on online shopping behaviour with the mediating role of consumer purchase intention in Pakistan	PLS-SEM	Benefits had positive and risks had negative impact on e-shopping behaviour.
7	Zoghi (2019)	An empirical study on the impact of risk perception on German consumers online buying intention	Regression analysis	Perceived behavioural control had influence on perceived risk of consumers and e-shopping. There was no significant relationship between perceived risk of consumers and e-shopping intentions.
8	Lubis et al., (2019)	Indonesian millennial's behaviour intention to e-shopping through Instagram	SEM	Perceived behaviour control was not significant to intention for e-shopping. The other predictors became significant.
9	Hoang, (2020)	Factors affecting online purchase intention: the case of e-commerce on Lazada.	EFA	Usefulness, convenience, trust, behaviour control, competency, and reference group affected e-purchase intention. Perceived risk had negative impact on e-purchase intention.

Table 2-1: (Continued) List of review articles

#	Author(s), Year	Title	Methodology	Results
10	Hebbar et al., 2020	Attitude towards online shopping and its influence on purchase intentions: an urban Indian perspective	SEM	Perceived benefits had significant influence on attitude towards e-shopping. Attitude and domain-specific innovativeness has significant influence on purchase intention.
11	Mainardes et al., (2020)	Antecedents & consequents of consumers not adopting e-commerce	SEM PLS	Intention is positively influenced by attitude and perceived behaviour Control (PBC). Behaviour was positively influenced by intention and PBC.
12	Cang & Wang (2021).	A comparative study on the online shopping willingness of fresh agricultural products between experienced consumers and potential consumers	SEM AMOS	Product quality, logistics service quality, e-WOM, and website information quality had significant impact on experienced consumers. Product quality, logistics service quality and e-WOM had significant impact on potential consumers, but website quality information not.

Table 2-1: (Continued) List of review articles

#	Author(s), Year	Title	Methodology	Results
13	<u>Chetoui</u> et al., (2021)	Factors influencing consumer attitudes toward online shopping: the mediating effect of trust	PLS	<u>eWOM</u> and trust significantly influenced consumer attitudes towards e-shopping; Trust was influenced by relative advantage and <u>eWOM</u>
14	<u>Bhati</u> et al., (2022)	Role of E-Service Quality (E-SQ) on Customers' Online Buying Intention: An Extended Theory of Planned Behavior	CFA, SEM, AMOS	Judgments had positive impact on E-SQ (reliability, responsiveness, personalization, convenience, trust and ease of navigation.
15	Quang & Thuy (2022)	Influencing Factors on Motorbike Online Buying Intention of Vietnamese People	EFA	Attitude toward online shopping is influenced by perceived usefulness, external and interpersonal attitudinal factors, trust as well as risk perception on customers e-purchase intentions except self-efficacy.
16	Jeddy et al., (2022)	The purchase of online products: A review of barrier effects on trust intentions	SEM PLS	Lack of integrity, lack of benevolence, and lack of competence were statistically significant with intention to trust; intention to trust was statistically significant with purchase intention.

In the second stage, the study examined the current usability of TPB model to find its latest trend in the e-commerce marketing development. For this purpose, a descriptive bibliometric analysis made via VOS viewer to find-out about the latest development in utilization of TPB in the e-commerce literature. Thus; firstly, inclusion & exclusion filtering applied as demonstrated in the table below.

Table 2-2: Inclusion & Exclusion Benchmark (Phase: II)

Inclusion	Exclusion
Full-text (Journal articles)	Conference proceedings, book series
Published within the selected interval (2019-2024)	Out of the selected time framework
Published in Scopus database	Other databases
The manuscript of article written in English	Non-English
In the domain of marketing field by using TPB Model	Other models than TPB model

Full-texts journal articles only elicited, but conference proceedings, book series etc. ignored. The published papers within the interval of 2019-2024 selected purposefully to have a better screening of TPB application after the COVID-19 outbreak. Scopus selected as a reliable, creditable and accessible database, which has huge articles sources, and multi-crossed indexed journals advantages. Only English language papers opted, and other models than TPB model thrown away.

The extraction of data performed in three phases. At first phase, the keywords for extracting data defined as marketing and theory of planned behaviour (TPB). Consequently, 1254 articles detected. At second stage, VOSviewer version 1.6.20 used for bibliometric analysis. It was done by considering the articles published within 2019-2024 interval according to the inclusion and exclusion benchmark. 773 papers received accordingly. And finally, open access articles only included, which resulted in 323 papers for text mining by means of Wordstat version 2022. The flow chart of the above processing illustrated as the figure below.

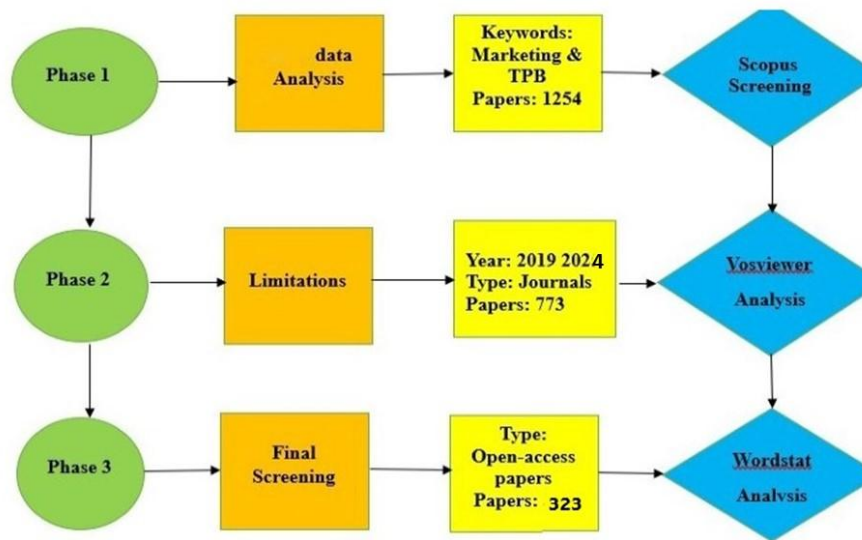


Figure 2-3: Data Screening Procedure

VOSviewer is a useful tool for illustrating the scientific map, which demonstrates the links and inter-relationships of the subject-matter of the study visually (Narjabadifam et al., 2023). By this application, the picturesque widespread adaption, usability, prominence and links of TPB model through the extant e-marketing literature in the last five years could be traced. In the figure below, the most marketing research development using TPB under the study for investigation could be observed.

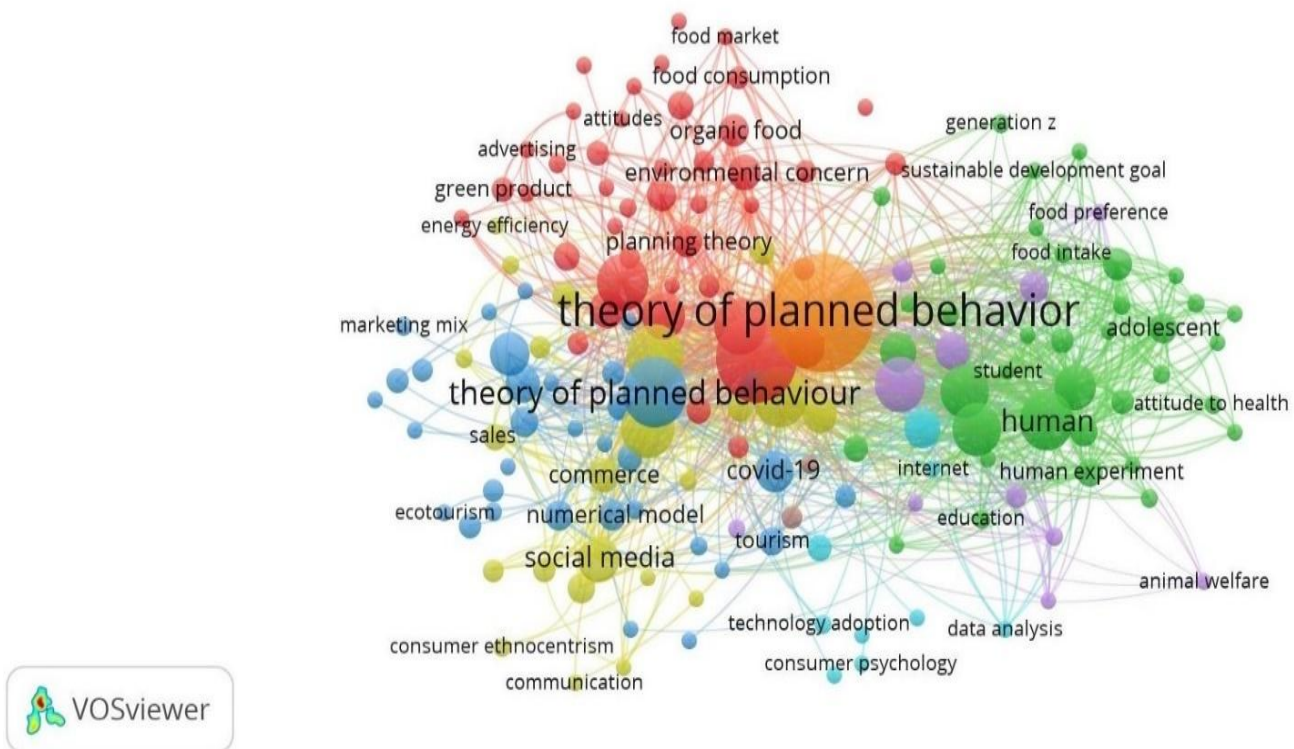


Figure 2-4: Map of Network Visualization of TPB

In this map, eight major cluster generated as the result of phase 2 filtering. The reddish clusters show that TPB has been used recently in social networks, purchase behaviour and marketing. Further screening also demonstrates that TPB had links mainly with food market, sustainable consumption, green products, and environmental concerns. The other blue clusters also generally visualize TPB having links with tourism, commerce, COVID-19, Internet, education and technology adoption, sales and consumer psychology. And finally, at phase 3, content analysis and text mining carried out by Wordstat application. Wordstat is a friendly-user software that performs quantitative analysis of the contents of textual data in research contexts (Lewis, 1999). 323 Scopus open access papers extracted as the final process. Content analysis could be represented by three various forms; namely 1) word cloud 2) word frequencies 3) topic modelling. Word cloud demonstrates the frequency of words in a text or paragraph visually. The figure below illustrates word cloud results of TPB in the marketing trends:



Figure 2-5: Word Cloud of TPB & Marketing trends

It depicts that TPB theory, intention, purchase, and marketing are the most frequent used keywords. The frequency distribution of words in marketing and TPB also represented in the following table:

Table 2-3. Frequency of words in Marketing & TPB

Word	Frequency	% SHOWN	% PROCESSED	% TOTAL	NO. CASES	% CASES
BEHAVIOR	939	5.00%	1.73%	1.09%	265	81.54%
INTENTION	835	4.44%	1.53%	0.97%	239	73.54%
THEORY	770	4.10%	1.41%	0.89%	321	98.77%
STUDY	729	3.88%	1.34%	0.84%	280	86.15%
MARKETING	667	3.55%	1.23%	0.77%	325	100.00%
PLANNED	611	3.25%	1.12%	0.71%	325	100.00%
PURCHASE	580	3.09%	1.07%	0.67%	129	39.69%
GREEN	498	2.65%	0.91%	0.58%	72	22.15%
PERCEIVED	459	2.44%	0.84%	0.53%	197	60.62%
SOCIAL	434	2.31%	0.80%	0.50%	123	37.85%
I	408	2.17%	0.75%	0.47%	324	99.69%
CONSUMER	405	2.16%	0.74%	0.47%	159	48.92%
ATTITUDE	386	2.05%	0.71%	0.45%	185	56.92%
RESEARCH	366	1.95%	0.67%	0.42%	199	61.23%
FOOD	358	1.91%	0.66%	0.41%	60	18.46%
MODEL	355	1.89%	0.65%	0.41%	171	52.62%
ENVIRONMENTAL	354	1.88%	0.65%	0.41%	109	33.54%
FACTORS	337	1.79%	0.62%	0.39%	164	50.46%
BEHAVIOUR	321	1.71%	0.59%	0.37%	96	29.54%
CONSUMERS	313	1.67%	0.58%	0.36%	133	40.92%
INTENTIONS	296	1.58%	0.54%	0.34%	131	40.31%
BEHAVIORAL	286	1.52%	0.53%	0.33%	137	42.15%

And finally, through topic modelling, five distinct topic areas namely consumer behaviour, marketing strategies, social media, sustainable development, and organic food detected by Wordstat accordingly.



Figure 2-6. The recent development in TPB & Marketing research

In other words, it delineates that TPB model is mainly used for investigation on those distinct topic areas during the last five years. Overall, in view of the above, it could be inferred that TPB is still an applicable as well as common model that is used in the current social sciences and/or interdisciplinary investigations.

2.7. Research gap and hypotheses

In the scope of online shopping investigations and/or broadly e-commerce literature, all of the variables of the TPB theory have not been utilized as a whole in the investigations rather some separate parts of model's variables have been used based on the scope of and objectives of the research. Thus, this study for the first time applies all the constructs appropriately to analyze hypotheses based on the model and removes the gap thereof. The following research hypotheses of the study are based on the salient as well as highly cited factors in the online purchasing context, which were extracted from the e-commerce literature. The key factors detected are perceived online trust, perceived product awareness, perceived price advantage, perceived payment transaction safety, perceived social influence, perceived web quality and past online shopping experience respectively, which are elucidated further below.

Regarding **perceived online trust**, in the online purchase behaviour context, when customers intend to buy, trust is the core element that should be realized. Indeed, online trust is a crucial determinant for the accomplishment of online transactions (Sahney et al., 2013, Mc Knight & Shervani, 2001; Koufaris & Sosa, 2004; Chen & Barnes, 2007; Elwalda et al., 2016; Yousafzai & Pallister, 2005; Punyatova, 2018; Urbonavičius, et al., 2023; Yeon et al., 2020; Putra & Antonio, 2021; Kim et al., 2012). Thus, intention to trust and/or initial trust is a prerequisite for online purchase decision, which ultimately results into actual purchases (Kaur & Quareshi, 2015; Mc Knight et al., 2001, 2004; Jarvenpaa et al., 2000; Oh et al., 2009; Gao et Waechter, 2017; Stouthuysen et al., 2018; Mahliza, 2020; Dabbous et al., 2020; Alnoor et al., 2022; Chetioui et al., 2021; Cheung & Lee, 2000). By considering the above assumptions the following hypothesis is made:

H₁: Perceived online trust has a positive impact on the online shopping.

With respect to **perceived product awareness**, building initial trust in the virtual environment depends on inter-related factors as the interaction between product, consumer and retailer (Scarpi & Riley, 2007; Hossain et al., 2022; Bartels, 2015; Mofokeng, 2021; Singh &

Sirvastava, 2018; Bucko et al., 2018; Ningrum & Hayuningtias, 2022). In the e-literature, one of the major product related factors is the valence and intensity of product information awareness that the e-vendor provides to the consumer (Sindhav & Balaz, 1999; Nurfatiasari & Aprianingsih, 2017; Bartels, 2015; Devedi et al., 2017; Sayogo et al., 2014; Alam, 2020; Fu et al., 2018). In the online shopping context, consumers are very sensitive to the type of the quality of goods they purchase. For instance, in case of food consumption, as they are perishable, consumers like to know adequate information about food ingredients, their freshness, expiry date, nutritional quality, place of origin, allergy information etc. (Benn et al., 2015; Javadi et al., 2012; Ariffin et al., 2018; Park & Kim, 2003; Raijas & Tuunanien, 2001; Rollin et al., 2011; Pinto, 2021). Indeed, more information details about the type of product, more e-client's trust in the online buying context. In view of above, the following hypothesis is asserted:

H₂ = Perceived product awareness has a positive impact on the perceived online trust

In terms of **perceived price advantage**, pricing by the e-vendor is another important factor that should be recognized; as a great deal of consumers seek for price information when shopping online, and consumers highly likely concentrate on any competitive price information (Chiang & Dholakia, 2003; Garbarino & Lee, 2003; Garbarino & Maxwell, 2010; Agyapong, 2018; Hossain et al., 2022; Vasudevan et al., 2023). Consumer's attention and consciousness on prices can significantly enhance impulse buying decision (Shukla & Banerjee, 2014; Lo et al., 2016). Castro et al. (2018) found that pricing and price promotion strategy impact buying behaviour in the retail environment. Nikhashem et al. (2011) declared in their findings that price has influence on e-ticket buying. E-sellers should therefore offer a reasonable price for the perceived price advantage of their customers (Zhu et al. 2018; Pappas, 2016). Indeed, lower price offerings and discounts yield to better online shopping decisions (Baubonienė & Gulevičiūtė, 2015; Sultan & Uddin, 2011; Reisch et al., 2013; Wei, 2006; Broekhuizen & Huizingh, 2009). Lee et al. (2016) found that lower price of product triggers trust in social media reviews. By viewing the mentioned studies, the following hypothesis is made:

H₃ = Perceived price advantage has a positive impact on the perceived online trust.

Concerning **perceived payment transaction safety**, e-payment transaction safety has been always a matter of concern for the e-clients as they feel risk when purchase product online (Katawetawaraks & Wang, 2011; Chang et al., 2016; Arora & Rahul, 2018; Tandon et al., 2018;

El-Deeb & Hamed, 2019). Mousavizadeh et al., (2016) found the significance of payment safety on the online shopping. When buying product through online store, trusting by e-client is very crucial as consumers cannot meet the e-vendor in person (Prasad & Aryasri, 2009; Ling & Chai, 2010; Pauzi et al., 2017). As sharing the personal credit/debit card information in virtual environment may incurs hacking, overdrawn, fraud and scams, trust is a prerequisite in online shopping (Saheny et al. 2003; Suki & Suki, 2017; Arifin et al., 2018; Well et al., 2011; Jordan et al., 2018). Thus, payment must be wholly secured by platforms (Li & Yuan, 2018; Yoon, 2002; Morath & Münster, 2018), and e-vendors should implement further optional payment methods for online buying such as delivery upon payment, securing privacy platforms, payment return policy, seal of approvals etc. (Bartels, 2015, Javadi et al., 2012; Zhao et al., 2017; Nurfatiasari & Aprianingsih, 2017; Dillahun et al., 2019; Lo et al., 2016; Oghazi et al., 2018). Upon the above assertions, the following hypothesis is made:

H₄= Perceived payment transaction safety has positive impact on the perceived online trust

As for **perceived social influence**, the social influence incurred by reviews from other customers' opinions about an online seller known as electronic word-of-mouth (e-WOM) or non-electronic word-of-mouth (WOM) can dramatically affect the e-clients trust and hence purchase decision (Hsieh & Tseng, 2018; Moore, 2015; Goh et al., 2013; Ku, 2012; Erkan & Evans, 2018; Fu et al., 2011; Lim et al., 2016; Hussain et al., 2018). Social influence emanated from subjective norms (Hasbullah et al., 2016; Sultan & Uddin, 2011; Pauzi et al., 2017; Sajid et al., 2022; Kaushik et al., 2018), which relates to consumer's perception about the beliefs of other consumers regarding an e-vendor's products or past purchase experience (Chang et al., 2016; Pauzi et al., 2017; Darelly et al., 2010; Akar & Topçu, 2011). The social influence on consumer decisions revealed its significance by Wood & Hayes (2012). Khan & Lee (2014) found that negative social influence has impact on brand avoidance attitude. Wang et al., (2016) suggested that e-vendors should exert product rating and sales for the positive social influence. In another study, the impact of eWOM on online impulse buying behaviour was found (Husnain et al., 2016; Zhang et al., 2018). Elwalda et al. (2016), Behrens (2014) and Kim et al. (2020) posited that customer's trust and online purchase intentions are significantly affected by online customer reviews (OCRs) or social influence. In view of above assumptions, the following hypothesis is made:

H₅= Social influence has positive impact on the perceived online trust.

Regarding **perceived web quality**, website technical quality features often referred to as store/firm/corporate image or website personality can enhance the motivations of e-consumers to trust and purchase online (Kaur, 2015; Suki & Suki, 2017; Li & Zhang, 2002; Chi, 2018; Kousar et al., 2018). These features can usually be described as a friendly user interface and typologized under easy navigation (time-saving), interactivity (response time contingency), variety of channels (texts and videos), utilitarian and hedonic benefits; pop-up help, online chat helpers, beautiful design of website, online tracking order, obvious product image visibility, products sorting and comparing capabilities, etc. (Kim et al., 2004; Ramus & Grunet, 2005; Nurfatiasari, & Aprianingsih; 2017; Xiao, 2018; Lo et al., 2016; Kukar & Scheinbaum, 2016; Todorovic et al. 2018; Jadhav & Khana, 2016; Pereira et al., 2016; Akram et al., 2018; Tandon et al., 2018). Lee et. al., (2016) found about the influence of website quality influencing online buyer's purchase decision. Lin & Sun (2009) detected the positive impact of website service quality with e-loyalty. The research of online purchase loyalty with the effect of website image was conducted by Pereira et al., 2016). Prashar et al (2017) posited the effects of website cues on e-purchase behaviour. The importance of website layout features evoking e-shoppers impulse buying was conducted by Lin & Lo (2016). Upon the above premises the following hypotheses are made:

H₆ = Perceived web quality has positive impact on the perceived online trust.

H_{6a} = Perceived web quality has positive impact on the online shopping.

With respect to **past online shopping experience** by the users (familiarity), it is considered by researchers as the key predictor for trust and online buying (Chang et al., 2016; Li & Yuan, 2018; Ling et al., 2010; Scarpi et. al, 2007; Kitthandeachaorn, 2016; Mc Knight 1988, Bellman et al, 1999; Brown et al., 2003; Constantinides, 2004; Bedi et al., Corbitt et al., 2003; Constantinides et al., 2010). Indeed, people with prior online shopping experience have less fear of internet activities and such an experience causes a positive attitude and impact on the frequency of online purchases regardless of the product category (Fenech, 2000; Bart et al., 2005; Sultan & Uddin, 2011; Wang et al., 2018; Stouthuysen et al., 2018; Mofokong, 2021). On the contrary, if the past experience is evaluated negatively e-consumers have no more willingness to engage in online buying in the future (Ling et al., 2010). Scarpi et al (2007) found the significance of past experience with online purchase likelihood. However, Masoudzadeh et al. (2016) did not find past online shopping experience of any significance as they examined it as a control variable with e-commerce websites. The indirect impact of past web shopping experience with online shopping

intention found by So et al. (2005), and Mathew & Mishra (2014). All in all, the following hypotheses are made:

H₇ = Past online shopping experience has positive impact on the perceived online trust.

H_{7a} = Past online shopping experience has positive impact on the online shopping.

Chapter 3. Methodology

3.1. Introduction

This chapter elaborates the current research methodology utilized in the empirical study by different aspects. As formerly stated, the main research objective of the study is to find and investigate the factors influencing merchandize online shopping. Thus, first, it deals with the holistic research approaches exist in the extant e-literature as the guidelines for the study. Second, research design will be discussed followed by research methods, hypotheses, population, sampling, location and timeline of the research, and the instrument for data gathering. Then, research procedures including survey scale measurement development by content validity as well as statistical analysis methods applied will be highlighted.

3.2. Research Approach

Research approach involves the overall research plans and procedures from the very beginning steps such as broad assumptions to the detailed methods of data gathering, analysis and interpretation (Hua, 2015; Creswell, 2017). In the domain of social science and/or managerial field of operations there are common paradigms that underpin an empirical study. Applying either of them depends on the nature, horizon and value of the questions inquired by the researcher (Kornuta & Germanie, 2019; Tubey et al., 2015; Bartels, 2015).

Paradigm, by definition, refers to the abstract beliefs and principles detecting how a researcher views the world and how s/he interprets and acts within it (Kivunja & Kuyini, 2017). In a similar fashion, a paradigm (pattern) is a conceptual/philosophical insight of which a researcher applies in the methodological aspects of his/her research to determine the research methods that should be utilized and that how the data should be observed and analyzed (Kivunja & Kuyini, 2017; Hua, 2015). Thus, a pre-defined paradigm is essential when one intends to conduct research to avoid misleading results at the end. A paradigm comprises of four elements; namely, ontology, epistemology, methodology and axiology (Kivunja & Kuyini, 2017; Rehman & Alharthi, 2016; Hua, 2015), which is delineated as below:

Ontology is derived from philosophy pertaining to the study of the nature of being, existence, reality and the inter-relations of things in the world (Kivunja & Kuyini, 2017). Similarly, ontology is the essence of our beliefs about reality. A researcher has assumptions about reality in how it

exists and what can be inferred from it, and thus seeking for a single verifiable truth (Rehman & Alharthi, 2016).

Epistemology, on the other hand, refers to how one can acquire knowledge as well as how the knowledge can be communicated to the other human beings (Kivunja & Kuyini, 2017). Indeed, it deals with “the connection between the researcher and the one being researched” (Rahi, 2017). It debates the questions such as “What is the relationship between the knower and what is known?”, “How do we know what we know?” (Kivunja & Kuyini, 2017), “What counts as knowledge?”, “What counts as data and findings?” Are the findings true facts or subject to researcher’s interpretation?” (Hua, 2015). The position of epistemology stands intimately between ontology and methodology (Krauss, 2005).

The broad term of **methodology** entails the entire systematic research design, methods, approaches, and procedures applied in the empirical study planned to find the research questions or problem. It involves assumptions proposed, limitations confronted and the tactics to minimize them (Kivunja & Kuyini, 2017). Methodology also sheds lights on various research types exist such as experimental research, ethnography, exploratory research, descriptive research, case/field study, explanatory research etc. (Creswell, 2017; Rahi, 2017), and directs the researcher to which one of the said-research types should be chosen according to the research objectives, and/or identifies the particular practices applied to gain knowledge of reality (Krauss, 2005)?

Axiology refers to the ethical issues or behaviours between the researcher and participants when surveying or interviewing the participants i.e., how far the ethics has been met by the researcher when conducting research. The questions that may arise by a researcher for observing axiology are “What should be done to respect all participants’ rights?”, “How should one conduct research in a justified, respectful and peaceful manner?”, “Which cultural, inter-cultural or moral attitudes arise and how one should address or deal with them?” (Kivunja & Kuyini, 2017).

Hence, the above-mentioned philosophical elements of paradigms enlighten the scholars to opt the best perspective appropriate to the problem they are investigating (Kornuta & Germanie, 2019), and research; therefore, should be conducted in the bedrock of a defined paradigm so as to be congruent with the philosophical elements (ontology, epistemology and axiology) as well as the methodology used. Paradigms of research are generally divided into the following philosophical schools:

- 1) Positivism/post-positivism: once proposed by Auguste Comte (1798-1857), a French philosopher. He stipulated that “experimentation, observation and reasons based on experience should be the criteria for understanding men’s behaviour as the basic means of extending knowledge” (Kivunja & Kuyini, 2017). Positivism merely predominates on the scientific method of investigation objectively. Those phenomena which are not concluded or followed by scientific methods are neither valid nor advocated by the (post)-positivists e.g., Metaphysics (Krauss, 2005). The scientific method, according to them, entails a process of experimentation utilized to explore observations to answer research questions. This involves forming and testing hypotheses, providing operational definitions, and statistical calculations to elicit the research results. (Post)-positivism also seeks to find the cause-and-effect relationships in terms of measurable entities and/or numerical analysis (Kornuta & Germanie, 2019; Kivunja & Kuyini, 2017; Creswell, 2017). It also deduces the results deductively and starts investigation by supporting or rejecting a theory by the gathered numerical data at the end.
- 2) Constructivism/Interpretivism: in this intellectual style, constructivists—contrary to positivists who firmly advocate any findings ought to be grounded in the measurable physical world, assume that human behaviour due to its complexity cannot be deduced only as generalized laws govern to all situations rather the meaning or context of a phenomenon/behaviour should be realized (Kornuta & Germanie, 2019; Krauss, 2005). Constructivists adhere to subjective nature of content-making and maintain that reality is socially constructed (Hua, 2015; Kivunja & Kuyini, 2017). Thus, a qualitative method for finding the research results applies on their perspective, and they view the world as constructed, interpreted and experienced by the individuals’ interaction with each other (Creswell, 2017; Tubey et al., 2015). In constructivism also known as interpretivism there are no hypotheses at the early stage of research rather they would be generated by the analysis of subjective data by examining specific cases or cultural fields in the natural settings. Accordingly, a theory built based on the subjective data and what one observes and hear, and hence the results are deduced inductively (Kornuta & Germanie, 2019).
- 3) Pragmatism: the position of pragmatism proposed in the 90’s decade by the works of Pierce, James, Mead and Dewey (Creswell, 2017). Pragmatists postulated that scholar ought to value both (post)-positivism and constructivism as paradigms of research. However, they maintained that scholars should apply the research approach or methods that best suits the nature of the

questions of their research for investigation rather than just sticking to a single paradigm (Kornuta & Germanie, 2019). Thus, pragmatists set the individuals free to opt mixed procedure or techniques i.e., both qualitative and quantitative methods based on their research objectives to provide the best understanding of the problem (Creswell, 2017). Indeed, pragmatism is the combination of positivism and constructivism. Hence, pragmatism objective was to remove the weakness of the prior mentioned paradigms by focusing on the problem of daily life situation itself rather than methods (Rahi, 2017).

The following table briefly illustrates the above-explained paradigms along with further description of research methods, theory/model as well as approaches in details. The operational definitions of either of them illuminated as below:

Table 3-1: Paradigms Function

Paradigm	Research Method	Theory-formulation	Data-based Analysis	Approach/Reasoning	Purpose
Positivism	Quantitative	Already available and will be examined	Survey, numerical analysis, Objective	Deductive	Pure scientific/experimental investigation
Constructivism	Qualitative	Generated	Interview, Subjective	Inductive	Investigation based on meaning, contents, or observation
Pragmatism	Mixed	Examined/Generated	Mixed	Deductive/Inductive	Removal of the weakness of the prior above paradigms

“A **theory (conceptual model)** is a set of principles that one can explain the relationship between the two or more concepts and variables. There are two levels of theories namely the abstract level, which follow inductive theory approach and the empirical level that advances deductive theory approach” (Rahi, 2017).

Inductive approach is the reasoning based on a theory development by observation while conducting research. In this approach the relationships between meanings and human themes are observed and generalized. (Rahi, 2017). Indeed, inductive approach explores or discovers phenomena by the process of social interaction (Tubey et al., 2015). This reasoning approach is used in qualitative research methods and leads to generating a conceptual model of theory.

Deductive approach (reasoning), on the other hand, is utilized to postulate theories that can be tested/examined so as to verify whether the theory is confirmed or rejected and/or ought to be revised (Kraus, 2005). Conversely, the deductive reasoning is utilized in quantitative research method and tests the hypotheses (Tubey et al., 2015). Deductive reasoning was rooted in Syllogism. Syllogism first had been postulated by Aristotle (Khemlani & Johnson-Laird, 2012). The arguments presented in syllogism relates to three stages of statement or propositions; namely, major premise, minor premise and conclusion (Fishbein & Ajzen, 2011). For instance, “Humans die.” is a major premise, “David is a human.” is a minor premise. Thus, “David dies, too.” is the final conclusion. The conclusion then has the generalizability inference competency.

Objectivity refers to the degree of which the researcher uses precise instruments, and conducts the research without bias and welcomes suggestions from participants in the research. As such, all sources of bias are mitigated so that the findings of the research will rest on the nature of data itself rather than researcher’s preference, personality, beliefs and values (Kivunja & Kuyini, 2017). Objectivity has the competency of predictability (Meredith et al., 1989). On the other hand, **subjectivity** allows the scholar to utilize his particular insights in conducting research (Meredith et al., 1989). It is the core element for the concept/meaning generation and evolvement. Subjective understanding is gained through exchange of ideas and social interaction and agreement between the researcher and participant (Kraus, 2005). Subjective data leads to reach understanding and possibly generating hypotheses (Kornuta & Germanie, 2019).

3.3. Types of Research

In terms of research objectives, there are five principal research types; namely, fundamental, applied, exploratory, descriptive and explanatory research (Rahi, 2017). However, there are other various research types that sub-divided by the above research types. The utilization of either of them depends on the goals and objectives of the researcher.

Fundamental research sometimes known as pure/basic research, by natural science point of views, is the kind of research that aims to develop theories by discovering broad generalizations or principles, and tries to find the essence of a phenomenon or things. It is usually carried out in laboratory in the field of natural/basic science. “It tests or develop theories and hypotheses that intellectually challenging, but may or may not have practical application at the current time” (Librero, 2012).

In terms of **applied research**, it is very much akin to the fundamental research in sampling techniques, subsequent inferences of target population and so forth. Its objective is to improve a product or process by testing theoretical concepts in the actual problem life situation. Most of the social sciences research undertaken under this category (Librero, 2012). The current study is also considered as applied research.

As for **exploratory research**, this aim of this research is to discover new insights in what is happening by inquiring and evaluating phenomena in the new horizons. This type of research is adopted at the early stage of finding a phenomenon or concept where there has not been adequate information about the essence of the subject to be investigated. A qualitative approach is undertaken in this type of research to generate theory (Rahi, 2017; Sakuma, 2015; Librero, 2012; Meredith et al., 1989).

In **descriptive research** method, the purpose is to acquire information on the current state of a phenomenon. It advances to report systematic detailed information and chronicle about people, situations or events by observation and documents. The results then may lead to generate and/or test a theory (Rahi, 2017; Meredith et al., 1989). Descriptive research describes, analyzes, and interprets the conditions currently exists. It involves comparison and contrast and discovers the relationship between existing variables (Librero, 2012). The qualitative research methods are considered under this group.

The **explanatory research** attempts to find the reasons behind the occurrence of a phenomenon. It elaborates a problem or situation usually in the form of casual relationship. This can help one to obtain new insights into a situation to build, test or develop a theory (Rahi, 2017). In a similar vein, explanatory research method delineates why and how there is relationship between situations or phenomenon (Librero, 2012).

In view of the above thorough clarifications of the approaches, the perspective of the current study is summarized in the following table.

Table 3-2: Thesis Perspective

Paradigm	Research Method	Theory-formulation	Data-based Analysis	Approach/ Reasoning	Purpose
Positivism	Quantitative	Already available and will be tested	Survey, numerical analysis, objectively	Deductive	Scientific investigation, Applied research

According to the table (3-2), as already explained above, *the empirical study aims to test the available pre-defined theory, and intends to form and examine the hypotheses grounded in the theory i.e. TPB Model (aims of the study) by statistical calculations; thus, the paradigm of positivism should be adopted, which has a deductive reasoning and is congruent with such criterion. In this paradigm, the research method is naturally quantitative method to address the research questions, the scientific method; and the type of research is the applied one, and the instrument/tools for collecting data is the survey, which finally leads to the approval or rejection of the theory hypotheses by the attained numerical results.*

3.4. Research Design

Research design/strategy is the focal point in conducting the study. It's like a map that outlines the pathway to reach the final destination. A proper research design is essential for the empirical research. In the research designing, the scholar ought to be ensured that research questions and conclusions are addressed properly (Bartels, 2015; Mohammad, 2019; Librero, 2012). Since the major/ minor objectives, questions and problem of the research, theory of the study, and the definition of indicators have been already discussed in chapter 1, this chapter only initiates first by describing the research methods and justifying hypotheses of the study and so forth.

There are distinct various practical methods in conducting research. Research methods are the basic means for gathering and analyzing data (Rehman & Alharthi, 2016). The taxonomy is as the following: qualitative, quantitative and mixed methods. The function of either of them differs from another in that it should be suited best with the nature of research theme, problem, individual experience, questions, and the chosen objectives (Creswell, 2017).

The **qualitative method** is utilized to collect in-depth details on a particular topic via open-ended surveys, interview with individual participant or focus group, observation, documents, audio & visual data or text and image instruments (Rahi, 2017; Creswell, 2017). The highlight of the characteristic of qualitative method is the focus on interpretation on the meanings of words or either of the above-mentioned instruments inferred by the individuals who are studied. Thus, in contrast with quantitative method, qualitative method is suitable for small sample size of population for investigation. (Bartels, 2015). The qualitative method is especially effective for those types of research that have a complicated research theme of which numerical analysis would not be applicable. The disadvantage of qualitative method is that it has a time-consuming procedure for interviewing, observation where the size of population sample is large, and since it's derived from inductive reasoning, it is less favoured by generalizability and more with in-depth understanding of research problem by its own context (Tubey et al., 2015). The goal of qualitative method is to build a theory at the end (Rahi, 2017). The qualitative method best suits to narratives, phenomenology, ethnographies, grounded theory and case studies.

In **quantitative research method**, which is considered as scientific method, a large size of population sample as well as numerical data can be covered and analyzed easily and instead of interpreting data based on individuals' emotions, concepts, feelings or environmental context, it advances describing the data (close-ended) and testing the theory at last (Rahi, 2017; Creswell, 2017). The instrument for collecting statistical data is based on the pre-determined survey (questionnaire). The advantage of this method is that in spite of having a large sample of population for investigation, the data can be collected swiftly by the privilege of e-survey technology in case of having time limit span for the research project. In quantitative method, the relationship amongst variables, hypotheses formulation, causal explanations, and research questions are scrutinized to reject or confirm a theory (Creswell, 2017; Tubey et al., 2015; Kivunja & Kuyini, 2017). The quantitative method is appropriate for experimental as well as non-experimental research designs such as survey (Creswell, 2017).

When conducting research merely by either of qualitative or quantitative methods do not meet the researcher's expectations in the findings attained, then the utilization of **mixed research method** would be beneficial. The mixed method is the combination of qualitative and quantitative methods to provide the best solution/answer to the problem of research. The analysis of data therefore can be both closed-ended measures as well as open-ended observations. Indeed, it has a sequential, concurrent transformative research strategy adhered to pragmatic grounds, and it removes the shortage exists in solely quantitative or qualitative methods in this way (Creswell, 2017).

Population of research consists of a group or class of the people, things, variables, concepts or phenomena in which they have at least one common feature between them. It is also known as participants, respondents or unit of analysis in the social science research context (Librero, 2012). The selection of the research target population to be investigated has direct relationship with the nature of the research questions. The population is determined by the symbol of "N" in Statistics. "**Sampling** is the process of selecting segment of the population of interest for investigation (making observations and statistical inferences about that population)" and represented by "n" (Rahi, 2017; Bhattacharjee, 2012). A smaller group of population can represent the larger group of population (Librero, 2012), which is beneficial in terms of time limit, work burden, costs of surveying and so forth. There are two techniques and sampling methods namely 1) Probability sampling 2) non-probability sampling. The probability sampling refers to the technique in which every unit of analysis (population) has a chance of being selected, and such a chance can be accurately determined (Bhattacharjee, 2012). Non-probability sampling, by definition, implies to the sampling technique that in which the degree of the chance or probability of each unit to be selected is not known or cannot be determined, and/or some units of population have zero chance of being selected (Bhattacharjee, 2012). *As the empirical study aims to select its sampling from the students thus non-probability sampling technique applies, because the exact quantifiable number of available students ready for this study cannot be estimated beforehand.* The non-probability sampling technique divides into five different taxonomies as the following:

Convenience/accidental/opportunity sampling is the one that "a sample is drawn from that part of the population which is close to hand, readily available, or convenient (Bhattacharjee, 2012; Librero, 2012). This a cost-effective way of data collection process regarding time and resources limitations (Sultan & Uddin, 2011).

In **judgement/expert sampling** technique, the scholar selects a representative sample on a non-random way, based on his/her own judgement, who know the problem and/or phenomenon being studied (Librero, 2012; Bhattacharjee, 2012; Rahi, 2017). The advantage of this technique is that opinions from a sample of experts are more credible than those who are a blend of experts or non-experts (Bhattacharjee, 2012).

As for the **quota sampling**, the strata of the population defined and a quota for each stratum set, then a non-random of observations made from each sub-group (Rahi, 2017; Bhattacharjee, 2012). It's very much alike judgement sampling in whom to select (Librero, 2012). "A definite quota must be allocated. The quota is defined to the extent by characteristics of the population so that the quota sample represents the population." This technique is usually useful when the interviewer has been given specific quotas or numbers of respondents to interview. This technique also is economical, but bears limitation in generalization.

Regarding the **snowball sampling**, the scholar makes initial contact with a few of respondents who are pertinent to the study, and then asks them to do the same with others. This technique is suitable when it's difficult to reach the population and/or samples are scattered and not easily available (Rahi, 2017; Bhattacharjee, 2012).

Thus, by considering the above definitions of various sampling techniques, *the study then applies for its sampling strategy the non-probability sampling category and utilizes the combination of convenience and judgement sampling as the techniques of sampling. The convenience method was opted, because it is easier to access the respondents via university portals, and judgement/expert method for the reason that the young Polish generation were much more updated and Internet savvy in using e-applications than the old generation, and that they had at least one-time of practical experience in the online shopping via Internet/mobile e-applications in their life-time.*

Since the research method of the study adopted as quantitative, according to the thesis perspective, and a large quantity of participants expected to be engaged in the study too, thus the utilization of survey (questionnaire) strategy is the best means of collecting data in this method. Such an instrument is ideally useful to measure individuals' thoughts or perceptions as the unit of analysis (Bhattacharjee, 2012). For this, the survey consists of two parts; 1) general demographic questions including open/close ended questionnaire 2) specialized questions

containing the items/statements of constructs to be measured by the five-point Likert scales measurements⁵ ranging from: 1) Strongly disagreed, 2) Disagreed 3) No idea 4) Agreed 5) Strongly agreed. The Likert scale is utilized to assess individuals' attitudes, beliefs or feelings towards an object, phenomenon etc. on a scale-orientation. Indeed, Likert scale refers to "a multi-item attitude scale derived by means of the summated ratings procedure developed by Likert." It can also have fewer or more than five responses alternatives with various labels other than strongly disagree, strongly agree. (Fishbein & Ajzen, 2011). As pointed-out earlier, *the items/statements of each construct have been derived from the literature*⁶. The advantages of using Likert scale are: 1) It has a very common usage in the survey/questionnaire method 2) It is ease of use and interesting for the respondents to fill Likert-like scaling (Sultan & Uddin, 2011).

Table 3-3: Survey Scales & Measurement

Constructs	Adapted from
Perceived product awareness	Mou et al., (2020); Chen et al., 2016
Perceived price advantage	Lee et al., (2016); Papas (2016)
Perceived payment transaction safety	Escobar-Rodríguez & Bonsón-Fernández (2017); Cheung & Lee (2000)
Perceived social influence	Chen et al., (2016)
Perceived online trust	Cyr et al., (2007); Cheung & Lee (2006); Walczuch & Lundgren (2004).
Perceived web quality	Fang et al. (2014); Gao & Waechter (2017)
Past online shopping experience	Ling et al., (2010)
Online shopping	Lee et al., (2016); Papas, (2016).

⁵ (Ibid: Appendix A)

⁶ (Ibid: Table 3-3. p. 70)

3.5. Research Procedure

In this section, the executive process of survey measurement scale development, survey distribution, data collection, Cronbach Alpha and the software opted for data analysis as well as relevant statistical methods applied for deducing the results would be discussed respectively.

3.5.1. Survey Measurement Scale Development

Building up a survey measurement scale is essential before circulating it to the sample of population (Polit et al., 2007). Indeed, no evidence-based theory/model ought to be developed without the utilization of a well-constructed and validated measurement instruments (Heggstad et al., 2019); otherwise, the inferences made by it might be dubious. At the initial stage, an interview questionnaire, a semi-structured interview to review, provided for the assessment based on the questionnaire's instructions and responses for the nominal scales⁷. Thus, six domain experts, who were mainly academic trained professors or business practitioners having an average of 10 years of experience in the academic/business fields were invited and asked to fill-out the form to express their assessment regarding the model's constructs items, which ultimately yields to the process known as content validity used for quantifying the assessment results (Zamanzadeh et al., 2014; Polit et al., 2007). Albeit the exact maximum number of expert participants have not been clearly stated in the literature; however, the average standard ranging from 3 to 10 participants deemed as suitable (Lynn, 1986). Having selected higher than 10 experts is not recommended; for too many experts may significantly increase the risk of inconsistent results (Lynn, 1986). The study thus aimed to invite 6 experts for the evaluation of survey statements. The determinants for assessment were relevancy, clarity and comprehensiveness (completeness) respectively. Relevancy, by definition, refers to whether the items/statements of each construct/dimension represent the target construct in a suitable/relevant manner according to the definition of construct's variable. Clarity (comprehensibility) implies how far the items are clear/obvious to express or define the dimension/construct, and comprehensiveness (completeness) defines whether the number of items/constructs are sufficient/adequate for each dimension or not. To make it easier for the experts to respond the questionnaire delivered to them online a few days before the interview meeting so that they could have a prior better understanding

⁷ (*Ibid*: Appendix B)

of survey filling process. Each expert given a hard copy available to facilitate them writing any comments on the sheets during the interview. The experts then given the set of statements/items to assess their relevancy with the four-point nominal scales ranging from 1- Not relevant, 2– Somewhat relevant, 3- Quite relevant, 4- Highly relevant, and for clarity; 1- Unclear, 2– Somewhat clear, 3- Quite clear, 4- Highly clear. The above-response scales were designed in such a way that experts could not take a neutral position on the individual statements (Lynn, 1986). As such, for comprehensiveness (completeness), the experts could just give their remarks qualitatively whether there were the right number of items/constructs for each target dimension, or something was missing, or there were too many/few, and/or they were allowed to annotate their remarks in adding or removing the items as well as any grammatical or vocabulary points to be modified (Zamanzadeh et al., 2014).

3.5.2. Content Validity

Content validity refers to “the extent to which a set of items reflects the content domain of the construct” (Worthington & Whittaker, 2006). Should an instrument lacks content validity, the reliability could not be established for it per se. An instrument validity can be achieved in two ways: 1) Face validity 2) Content validity (Cook & Beckman, 2006). Face validity is utilized in lack of having an empirical test for the instrument. It is judged by the experts/respondents only based on the superficial appearance, attractiveness of the instrument (Cook & Beckman, 2006; Zamanzadeh et al., 2014). However, relying on face validity is not highly recommended as there might be bias or inadvertent guessing by means of face validity (Cook & Beckman, 2006). Content validity, on the other hand, depends on the systematic and documented approach to be ensured that the instrument assesses the relevant construct properly (Cook & Beckman, 2006). It is manipulated through the full evaluation process of relevancy, clarity and completeness by the experts. An appropriate performed content validation yields to better results in terms of construct validity (Polit et al., 2007). Content validity ratio is recognized by CVR. It is used for rejection or approval of a specified item. The process requires quantification of results by means of three indicators namely I) CVI: content validity index—“content validation index for individual indicators expresses the proportion of agreement on the relevancy or clarity of each item, which is between 0-1,” (Zamanzadeh et al., 2014). Davis (1992) suggested that an 80% of agreement or higher attained by the judges for the new instrument is appropriate. II) I-CVI (Item–content validity index; with measurement for each item on the scale); it is calculated by dividing the

number of experts who rated the item positively (score of 3 or 4) by the number of total experts (Polit et al., 2007). The I-CVI ranges between 0 to 1 representing the percentage of experts who agree that particular statements are appropriate (Lenz, 2010). *It is recommended that with six or more experts, I-CVI ratios should be no lower than 0.83 (Polit et al., 2007).* Researchers use I-CVI indices as a guide to edit, remove or replace the items with another. III) S-CVI (scale content validity index) is the arithmetic mean of the I-CVI scores for the individual items. Computing S-CVI can be achieved in two alternative ways. One of them is via universal approach (UA), which implies the universal agreement between the experts. S-CVI/UA is the proportion of items on an instrument that achieved rating of 3 or 4 by all the experts (Lenz, 2010; Polit et al., 2007). Another way is the S-CVI/Ave index, which is calculated by I-CVI for each item on the scale, and then the average of the I-CVIs across the items computed (Polit et al., 2007). *The acceptable cut-off points for demonstrating content relevance for S-CVI/Ave is 0.8 (Lynn, 1986; Polit et al., 2007), while a value of 0.9 indicates a very good score (Lenz., 2010).* This study utilized S-CVI/Ave index for computing the scale-level index of the instrument, which is considered as less conservative method (Zamanzadeh et al., 2014). Albeit researchers often utilize the CVI to realize content validation, this variant does not account for the risk of overestimation due to the random agreement between experts. Therefore, in order to attain more quantifiable results in assessing the judgements of domain experts the CVI supplemented by an additional variant, the modified Kappa Statistic (Polit et al., 2007). The modified Kappa coefficient complements the CVI by eliminating the random concordance between experts (Zamanzadeh et al., 2014; Polit et al., 2007). Since the Kappa coefficient eliminates random concordance, its calculation provides a better understanding of content validity (Zamanzadeh et al., 2014). The calculation of the modified Kappa Statistic requires first calculating the probability of random concordance for each item using the formula $P_c = [N! / A! (N - A)!] \times 0.5^N$. In this formula, N represents the number of experts on the panel and A represents the number of panelists who agree that the statement is relevant. The modified Kappa statistic is then calculated using the following formula: $K = (I-CVI - P_c) / (1 - P_c)$. *According to the Kappa evaluation criteria, scores above 0.74 are considered excellent, scores between 0.60 and 0.73 are good and scores between 0.40 and 0.59 are acceptable (Zamanzadeh et al., 2014).* In the Tables 3-4 and Table 3-5 below the content validity values of the survey measurement scale development based on ratings on a 5-item scale by six experts; items rated 3 or 4 on 4-point relevancy and clarity scales depicted. For the relevancy, there are 10 items, marked by asterisk, which their I-CVIs values are < 0.83 . In spite of low CVI

indices of the ten mentioned items, the total S-CVI/Ave for 40 items is 0.80, which is acceptable. For the Kappa statistic, those low I-CVIs levels have the low Kappa values, too. The S-CVI/Ave for each construct (factor) influencing merchandise online shopping in terms of relevancy are:

- Perceived product awareness: 0.96 Perceived social influence: 0.86
- Perceived price advantage: 0.73 Perceived online trust: 0.66
- Perceived payment transaction safety: 0.63 Perceived web quality: 0.93
- Past online shopping experience: 0.69 Online shopping: 0.96

In the Table 3-5, there are 8 items, marked by asterisk, which their I-CVIs values are < 0.83 in terms of clarity scale. The total S-CVI/Ave for 40 items is 0.83, which is acceptable. The S-CVI/Ave for each construct (factor) influencing merchandise online shopping are the followings respectively:

- Perceived product awareness: 0.93 Perceived social influence: 0.80
- Perceived price advantage: 0.63 Perceived online trust: 0.69
- Perceived payment transaction safety: 0.76 Perceived web quality: 0.93
- Past online shopping experience: 0.66 Online shopping: 0.96

The average Kappa for its clarity; 0.78 of which turned out to be above the excellent Kappa cut-off criterion point, i.e. 0.74 (Zamanzadeh et al., 2014). Lastly, at the final stage of survey measurement scale development the process of completeness (comprehensiveness), which is a qualitative assessment performed. Thus, the modifications applied based on the comments left on the sheets by the experts on the contents of each construct's items. All the remarks for those items whose ICVIs were lower than the cut-off points i.e. 0.83 were taken into account; even those that had a suitable ICVIs ratio. The Table 3-6 illuminate the original versions as well as modifications applied in view of the experts' comments as the following:

For the perceived product awareness, the content of item 3 has been modified in spite of having a high ICVI of 1. The item 5 of the construct was commented as unnecessary statement, because item 2 already described it positively. However, in order to avoid having a biased response, the same form reserved. On the perceived price advantage, item 1 modified in spite of having a high ICVI of 1. For item 2, offering sale ads added to the statement. The items 3 and 5, which ICVIs

were low modified too as shown in the table. Regarding the perceived payment transaction safety, item 2: debit card changed by online payment methods as it was very detailed specified. Item 4 contents revised totally and item 5 the customers privacy replaced by customers payment transaction safety of which both had their ICVIs lower than 0.8. Also, the item 4 of the perceived social influence modified by grouping the words into a parenthesis. At perceived online trust, the item 2,3 and 5 contents changed respectively. The item 2 changed to fulfilling return policy promise to the e-vendor, and item 3 revised to the deficiency of the product purchased in the online way, and item 5 also gave further examples of e-buying uncertainties. Regarding the perceived web quality, there were items 1 and item 5 to be modified. The item 1 changed to product finding examples instead of product assortment, and the item 5 content revised as well. About past online shopping experience, three items modified. In the item 3, the phrase “because I use it frequently” added. For the item 4, ability replaced by skills as ability could somewhat convey financial aspect of buying. As such, the phrase “because I’m not familiar with it,” added to item 5. Finally, for the online shopping construct, as there were no significant comments and the ICVIs seemed good, no changes made to them.

Tables 3-4: Tables of Items Rated 3 or 4 on a 4-point Relevancy Scale on a 5-Item Scale by Six Experts

Perceived product awareness										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
SCV/ Ave								0.96		

Perceived price advantage										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	—	✓	—	—	—	2	0.33*	0.23	0.13
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	—	—	✓	✓	—	—	2	0.33*	0.23	0.13
SCV/ Ave								0.73		

Perceived payment transaction safety										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
3	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
4	—	—	—	✓	—	—	1	0.16*	0.02	0.14
5	—	—	✓	✓	—	—	2	0.33*	0.23	0.13
SCV/ Ave								0.63		

Perceived social influence										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
4	—	✓	✓	✓	—	—	3	0.50*	0.31	0.27
5	✓	✓	✓	✓	✓	✓	6	1	0.02	1
SCV/ Ave								0.86		

Table 3-4: (Continued) Tables of Items Rated 3 or 4 on a 4-point Relevancy Scale on a 5-Item Scale by Six Experts

Perceived online trust										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	—	✓	✓	—	✓	4	0.66*	0.23	0.56
3	✓	✓	✓	✓	—	—	4	0.66*	0.23	0.56
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	—	—	—	—	—	—	0	0*	0.02	0.02
SCV/ Ave								0.66		

Perceived web quality										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
SCV/ Ave								0.93		

Past online shopping experience										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
3	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
4	—	✓	✓	✓	—	—	3	0.50*	0.31	0.27
5	—	✓	✓	—	—	—	2	0.33*	0.23	0.13
SCV/ Ave								0.69		

Online shopping										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
5	✓	✓	✓	✓	✓	✓	6	1	0.02	1
SCV/ Ave								0.96		

Table 3-5: Tables of Items Rated 3 or 4 on a 4-point Clarity Scale on a 5-Item Scale by Six Experts

Perceived product awareness										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
SCV/ Ave								0.93		

Perceived price advantage										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	—	✓	✓	—	✓	4	0.66*	0.23	0.56
3	—	—	—	—	—	—	0	0*	0.02	0.02
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	—	✓	✓	✓	—	—	3	0.50*	0.31	0.27
SCV/ Ave								0.63		

Perceived payment transaction safety										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	—	—	✓	—	—	—	1	0.16*	0.09	0.07
5	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
SCV/ Ave								0.76		

Perceived social influence										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	—	—	—	✓	—	—	1	0.16*	0.09	0.07
5	✓	✓	✓	✓	✓	✓	6	1	0.02	1
SCV/ Ave								0.80		

Table 3-5: (Continued) Tables of Items Rated 3 or 4 on a 4-point Clarity Scale on a 5-Item Scale by Six Experts

Perceived online trust										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	—	—	—	✓	—	—	1	0.16*	0.09	0.07
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	—	✓	—	✓	—	—	2	0.33*	0.23	0.13
SCV/ Ave								0.69		

Perceived web quality										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	✓	✓	✓	✓	✓	✓	6	1	0.02	1
5	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
SCV/ Ave								0.93		

Past online shopping experience										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	✓	✓	6	1	0.02	1
2	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
3	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
4	—	—	—	✓	—	—	1	0.16*	0.09	0.07
5	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
SCV/ Ave								0.66		

Online shopping										
Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVIs	P _c	K
1	✓	✓	✓	✓	—	✓	5	0.83	0.09	0.82
2	✓	✓	✓	✓	✓	✓	6	1	0.02	1
3	✓	✓	✓	✓	✓	✓	6	1	0.02	1
4	✓	✓	✓	✓	✓	—	5	0.83	0.09	0.82
5	✓	✓	✓	✓	✓	✓	6	1	0.02	1
SCV/ Ave								0.96		

Table 3-6: Tables of comparisons (original with modified version)

Perceived product awareness			
# Item	Original version of item	Scope of change	Final version of item
3	Product guarantees, warranties, after-sale services are clearly explained at e-shopping websites.	After-sale services -> (guarantees, warranties, etc.)	Product after-sale services (guarantees, warranties, etc.) are clearly explained at e-shopping websites.
5	I believe that product information details at e-shopping websites are not adequate for shopping.	The reverse statement kept reserved to avoid bias response	The same

Perceived price advantage			
# Item	Original version of item	Scope of change	Final version of item
2*	The e-shopping websites help me reduce spending high when purchasing products.	Spending high -> high spending on products Purchasing products -> by offering sale ads.	The e-shopping websites help me to reduce my high spending on products by offering sale ads.
3*	The e-shopping websites help me competitive prices.	Competitive prices -> compare prices.	The e-shopping websites help me to compare prices.
5*	Reasonable prices at e-shopping websites help me to trust the e-vendor.	Reasonable prices -> prices transparency	Prices transparency at e-shopping websites help me to trust the e-vendor.

Perceived social influence			
# Item	Original version of item	Scope of change	Final version of item
4*	e-word-of-mouth, online testimonials, stars and ratings reviews are important to me on e-buying making-decisions.	e-store ratings -> (e.g. e-word-of-mouth, online testimonials, adding stars, online customer reviews)	e-store ratings (e.g. e-word-of-mouth, online testimonials, adding stars and online customer reviews) are important to me on e-buying making-decisions.

Table 3-6: (Continued) Tables of comparisons

Perceived payment transaction safety			
# Item	Original version of item	Scope of change	Final version of item
2	I'm willing to use my debit card data on e-shopping sites to make a purchase.	To use my debit card data -> online payment methods.	I'm willing to use online payment methods to make a purchase.
4*	e-vendors will not divulge consumers personal data to other parties.	->Statement totally changed	Payment transaction safety measures installed on the shared e-commerce platforms by e-vendors can increase e-clients trust to online shopping.
5*	e-vendors are not concerned about customers privacy.	About customers privacy -> customers payment transaction safety	e-vendors are not concerned about customers payment transaction safety.

Perceived online trust			
# Item	Original version of item	Scope of change	Final version of item
2*	I feel e-shopping websites would provide me with good service.	I feel -> I think Provide -> fulfill their promise to the customers with good quality service.	I think e-shopping websites would fulfill their promise to the customers with good quality service.
3*	I'm worried that my privacy will be invaded if I buy something from an e-retailer.	My privacy -> my purchased product may have deficiency	I'm worried that my purchased product may have deficiency if I buy from an e-retailer
5*	In the Internet shopping, there are too many uncertainties.	Uncertainties -> e.g. data security, product authenticity, delivery reliability, no ssl certificates and customer service	In the Internet shopping, there are many uncertainties, e.g. data security, product authenticity, over-withdrawal, delivery reliability, no ssl certificates and customer service.

Table 3-6: (Continued) Tables of comparisons

Perceived web quality			
# Item	Original version of item	Scope of change	Final version of item
1	The e-shopping websites are easy for products assortment.	Products assortment - > products findings in terms of various options and specifications.	The e-shopping websites are easy for products findings in terms of various options and specifications.
5	E-shopping websites are visually attractive.	Visually attractive -> attractive enough to absorb the e-customers.	E-shopping websites are visually attractive enough to absorb the e-customers.

Past online shopping experience			
# Item	Original version of item	Scope of change	Final version of item
3	I feel comfortable of using e-shopping websites.	>- because I use it frequently.	I feel comfortable of using e-shopping websites, because I use it frequently.
4*	I believe that e-shopping ability depends on the prior online shopping experiences.	Ability -> skills	I believe that e-shopping skills depends on the prior online shopping experiences.
5*	I don't know how to shop online.	>-because I'm not familiar with it.	I don't know how to shop online because I'm not familiar with it.

Online Shopping			
# Item	Original version of item	Scope of change	Final version of item
1	I believe that online shopping continuously to buy a product or service is encouraging.	-> Removal of continuously	I believe that online shopping to buy a product or service is encouraging.
4	It's likely that I recommend online shopping to my friends or family.	Leave it the same?	

3.5.3. Instrument Reliability

After performing survey measurement scale development and acquiring proper content validity indices, the instrument (survey) reliability would be analyzed by Cronbach's Alpha examination. The reliability of research instrument refers to how far the instrument can extract precise data and, under the same conditions, other researchers may attain the same results by conducting the research again (Sakuma, 2020). According to a rule of thumb, the Cronbach's Alpha benchmark should be equal to 0.7 or above (Hair et al., 2019). The coefficients achieved lower than that have to be modified by careful re-assessment of vague or confusing questions/items, length and localization of indicators, easy instructions to follow, and any other technical issues that concerns. Thus, a pilot test of survey is carried-out for this purpose before gathering the actual data. The principal goal of the pilot testing is to check earlier whether the constructed items/indicators of each variable convey their concepts properly or not. In a similar vein, by pilot testing, one ensures that the survey enjoys having internal reliability and consistency in terms of quality, clarity and accuracy.

As such, the survey firstly designed and distributed to a group of international Erasmus students at the NCU Faculty of Economics & Management via Google Form link by e-mail. The language of the survey was in English, and it consisted of 16 general and demographic questions as well as 8 factors, each having 5 indicators/items measured by five-point Likert scales. Seven respondents forwarded their filled-in surveys at last. The average time of filling-out the surveys by them were roughly 9 minutes. The results; however, were not satisfactory. Amongst 8 factors, only two factors could reach 0.7 benchmark. The rest were either below 0.7 and/or negative Cronbach's Alpha coefficients attained. This could be probably due to the few numbers of respondents participated as well as the converse items that primarily designed. Thus, the converse items changed to positive statements along with some minor statements' modifications.

Then, a group of Polish students attending a lecture class of the NCU Faculty of Economics & Management were asked to fill-out the e-survey. The modified e-survey launched to them via Google Form link by e-mail, too. The language of the survey was in Polish this time. Totally, 38 responses received. The average time for filling-out the survey was approximately 8 minutes. This time the coefficients did not turned out to be negative, but some Cronbach's Alpha coefficients were still under the benchmark. Among 8 factors, two reached the benchmark of 0.7. The other four factors were 0.6, which were very close to the threshold, and the other two factors were below the benchmark, i.e., 0.5. The reason of those two low Cronbach's Alpha results probably could be

still either due to the few quantities of respondents, the complex nature of the conceptual model of research, which involved many factors, and/or probably the complexity of the concepts, items quantities or length of the items, which could not still obtain a unanimous consent to answering the questions among the respondents. Thus, some minor modifications re-applied to the e-survey items and it was finally decided to disseminate the updated survey to a larger group of various Polish university students for gathering the actual data instead.

Finally, the targeted Polish universities were namely Nicolaus Copernicus University in Toruń (different faculties), Bydgoszcz University of Technology, the University of Economics in Katowice, Poznań University of Economics and Business, the University of Rzeszów and the University of Gdańsk. The process run by delivery of the e-survey to the students of the said-universities via the NCU official survey portal: <http://www.ankiety.umk.pl> by e-mail. The time span of data collecting started from October 2025 to January 2026. The language of survey was both designed in Polish and English options. The anonymous survey consisted of 13 general and demographic questions as well as 8 factors statements measured by five-point Likert scales namely 1) Strongly disagree 2) Disagree 3) No idea 4) Agree 5) Strongly agree⁸. The period of gathering the actual data set out from October to the end of December 2025. Only the complete filled-in surveys were taken into consideration. After all, 371 data (responses) received of which 67 data were partially completed and 304 were fully filled-in. Only the complete data (304 responses) were taken into consideration for the experimental examination. Thus, the Cronbach's Alpha (CA) results of the construct items were as the following separately:

⁸ *Ibid*: Appendix "A"

Table 3-7: Constructions' Cronbach's Alpha⁹

Name of Attribute	Number of Items	Cronbach's Alpha (CA)
Online Shopping	5	0.69
Past Online Shopping Experience	//	0.74
P. web quality	//	0.74
P. online trust	//	0.85
Payment Transaction Safety	//	0.82
Social Influence	//	0.80
P. Price Advantage	//	0.64
P. Product Awareness	//	0.69

3.6. Data Analysis

For analyzing the data statistically, there are two common methods; descriptive and analytical statistics. In descriptive statistics, demographic data such as gender, age, education, occupation etc., and general questions related to the topic of research are measured. The descriptive statistics administers various statistical indices such as mean, mode, median, variance, covariance, standard deviation as well as charts, graphs, frequencies, percentage and so forth. In analytical statistics, on the other hand, the correlations between the variables and hypotheses would be tested. Such testing performed by factor analysis. Factor analysis is a proper statistical technique for gauging multivariate conceptual models, which can identify or confirm a small number of factors/ latent constructs from a large number of observed variables/items (Worthington & Whittaker, 2006). Factor analysis divided into a two major sub-category namely Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Cabrera-Nguyen, 2010; DeVellis & Thorpe (2021),

Exploratory Factor Analysis (EFA) is based on the premise that unobservable/latent variables underline variations by the performance of observable variables. It further stipulates that the correlations (covariance) between observable variables can be justified by a small number of unobservable variables/constructs (Watkins, 2021). This conveys that an unobservable variable can

⁹ *Ibid*: Appendix "C"

influence more than one observable variable and account for the correlation between them. EFA is mainly conducted when there is no prior model assigned for the investigation, rather it helps to generate a conceptual model by allowing the items to be related to any of the factors that meet examinee responses (Worthington & Whittaker, 2006). Thus, the purpose of EFA is to utilize the fewest number of exploratory concepts to explain the maximum amount of common variance in the correlation matrix (Tinsley & Tinsley, 1987).

Confirmatory Factor Analysis (CFA) is utilized to confirm/verify the extent to which the theoretical model proposed by the researcher, or the model available beforehand for the investigation is reflected in reality based on the analysis of the data obtained in the research (Worthington & Whittaker, 2006). In other words, in the CFA analysis, a conceptual model already exists for the investigation. CFA is preceded by Structural Equation Modelling (SEM). The Confirmatory Composite Analysis (CCA) is also another alternative for CFA. Thus, factor analysis could be conducted through Covariance-based structural equation modelling (CB-SEM), which determines the use of CFA, or partial-least square structural equation modelling (PLS-SEM), which applies to the use of CCA (Hair et al., 2020). Whether to opt CB-SEM or PLS-SEM for analyzing data depends to the constraints and/or properties of model being investigated. PLS-SEM is used when the sample size is less than the standard benchmark determined by CB-SEM criteria (Hair et al., 2019). SPSS version 23 used for the descriptive data analysis.

Chapter 4. Results & Data Analysis

4.1. Introduction

In this chapter, two statistical approaches would be conducted. Descriptive and analytic statistics. The descriptive analysis first deals with demographic data such as gender, age, education, occupation and general questions about online shopping along with their relevant frequencies, mean, mode, median, percentages in columns as well as graphs are illustrated. Then, the analytical statistics would be performed for the assumptions support by the means of the appropriate method and software. The process and results are presented respectively as below.

4.2. Missing Data & Outliers

Missing data may indeed generate loss of information, bias and decrease the calculations power for either descriptive or analytical Statistics. As a result, the missing values screened first, and 9 lost data detected totally amongst survey general questions including Question 5. How often do you shop online? Q10. Do you trust online shopping? And Q 12. Do you plan to shop online in the future? Thus, to remove such a deficiency, the missing data replaced by the median of nearby points imputation method through SPSS so as not to have any lack of data to maximize confidence in the descriptive results (Hair et al., 2013). For the Likert scale items, no missing data were found, as only complete answers were taken into consideration in advance.

Outliers, on the other hand, may also influence the results by pulling the mean away from the median. They also affect distributional assumptions i.e. data normality, and usually reflect false or wrong responses (Bartels, 2015). There are two types of outliers namely 1) univariate outlier 2) multi-variate outlier. Univariate outliers pertain to the extreme values for a single variable, while multi-variate ones deal with extreme (uncommon) values for a correlation in a model (Yen & Nasuredin, 2024). As a result, two Likert items' responses found to be outliers by having repeated scales answering. However, as removal of those items influenced slightly the Cronbach's Alpha coefficient to become lower and did not have a significant impact on the assumption results, they were not treated for the omission. Since the study utilizes PLS-SEM for analysing the assumptions, the normality test as a criterion for processing data weren't taken into account then (Hair et al., 2013). The process of missing data or outliers' removal also is known as data cleaning (Yen & Nasuredin, 2024).

4.3. Part I: Descriptive Statistics

In (Table 4-1), the percentage of the respondents illustrated. The bar chart is also drawn at Figure 4-1. 59.2% of respondents were females as dominant in comparison with 39.1% of males. The rest, 1.6% preferred not to reveal their gender.

Table 4-1: Frequency of respondents by gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	180	59.2	59.2	59.2
Male	119	39.1	39.1	98.4
Prefer not to say	5	1.6	1.6	100.0
Total	304	100.0	100.0	

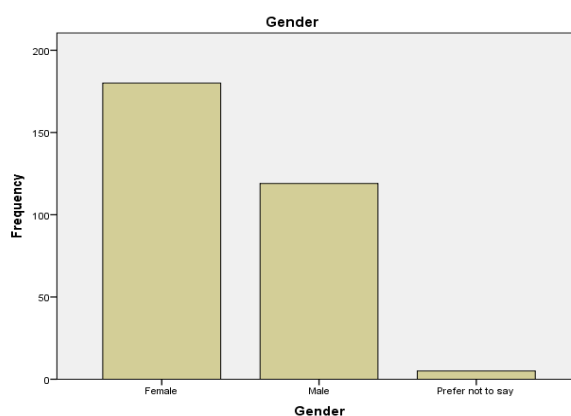


Figure 4-1: Gender Frequency Bar Chart

In Table 4-2, 81.3% of the respondents are within the range of (18-24), 13.8% are at the age group of (25-29), 2.3% (30-34) and 2.6% (+35).

Table 4-2: Frequency of Respondents by Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 18-24	247	81.3	81.3	81.3
25-29	42	13.8	13.8	95.1
30-34	7	2.3	2.3	97.4
+35	8	2.6	2.6	100.0
Total	304	100.0	100.0	

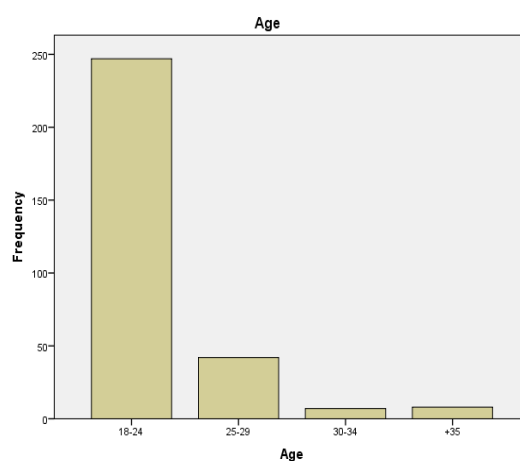
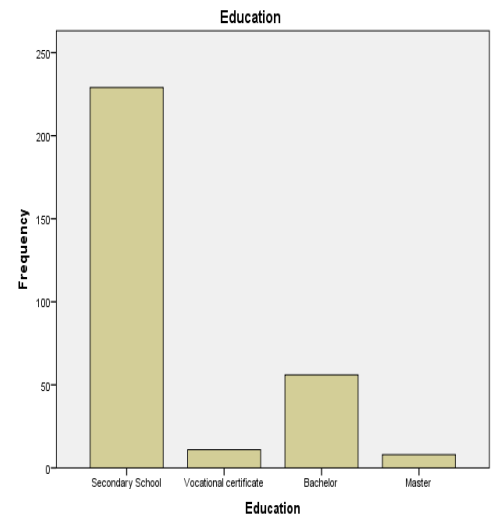


Figure 4-2: Age Frequency Bar Chart

Table 4-3: Frequency of respondents by Education

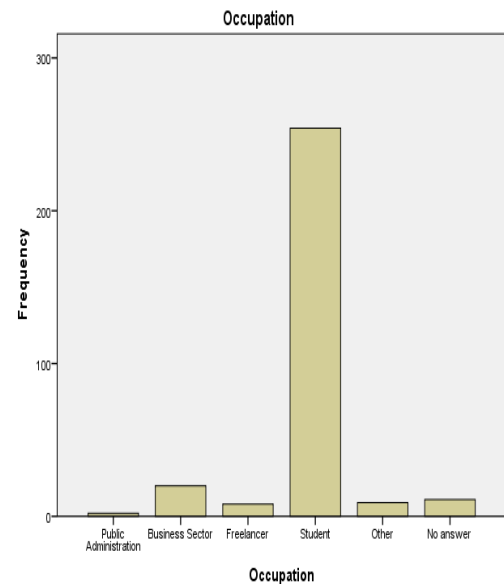
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Secondary School	229	75.3	75.3	75.3
Vocational certificate	11	3.6	3.6	78.9
Bachelor	56	18.4	18.4	97.4
Master	8	2.6	2.6	100.0
Total	304	100.0	100.0	

**Figure 4-3: Education Frequency by Bar Chart**

In Table 4-3, 75.3 % of the respondents have secondary school diploma, 3.6% having vocational certificates, 18.4% bachelor's and 2.6% have master degree. The occupation percentage varies. 0.7 % working at public administration, 6.6% for business sector, 2.6% as freelancer, 83.6% as student (the majority), 3% in other jobs, and 3.6% didn't reveal their jobs or indicated in different categories.

Table 4-4: Frequency of respondents by Occupation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Public Administration	2	.7	.7	.7
Business Sector	20	6.6	6.6	7.2
Freelancer	8	2.6	2.6	9.9
Student	254	83.6	83.6	93.4
Other	9	3.0	3.0	96.4
No answer	11	3.6	3.6	100.0
Total	304	100.0	100.0	

**Figure 4-4: Occupation frequency by Bar Chart**

4.4. General questions used in the measurement instrument

How often do you shop online? In this question, the descriptive statistics are measured and compared by gender and age variables and based on the maximum and minimum percentage. According to (Table 4-6), the highest peak was for 71.4 % of females within the age group of +35 by having online shopping several times a month in comparison with males by 45.5% by the age group 18-24 for e-shopping once in a month as the highest rate. The lowest ratio is for the females with 5% online shopping several times a week in a 18-24 age category in comparison with males who had 5.9% with the same criteria.

Table 4-5: Descriptive Statistic

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
How often do you shop online?	304	4	1	5	1072	3.52	1.061	1.126
Valid N (listwise)	304							

Table 4-6: How often do you shop online?

How often do you shop online?

Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	Several times a week	7	5.0	5.0	5.0
			Once a week	13	9.2	9.2	14.2
			Once a month	45	31.9	31.9	46.1
			Several times a month	53	37.6	37.6	83.7
			Less often	23	16.3	16.3	100.0
			Total	141	100.0	100.0	
	25-29	Valid	Several times a week	2	7.7	7.7	7.7
			Once a week	2	7.7	7.7	15.4
			Once a month	3	11.5	11.5	26.9
			Several times a month	10	38.5	38.5	65.4
			Less often	9	34.6	34.6	100.0
			Total	26	100.0	100.0	
	30-34	Valid	Several times a week	1	16.7	16.7	16.7
			Several times a month	2	33.3	33.3	50.0
			Less often	3	50.0	50.0	100.0
			Total	6	100.0	100.0	
	+35	Valid	Once a month	2	28.6	28.6	28.6
			Several times a month	5	71.4	71.4	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	Several times a week	6	5.9	5.9	5.9
			Once a week	10	9.9	9.9	15.8
			Once a month	26	25.7	25.7	41.6
			Several times a month	46	45.5	45.5	87.1
			Less often	13	12.9	12.9	100.0
			Total	101	100.0	100.0	
	25-29	Valid	Several times a week	1	6.3	6.3	6.3
			Once a week	3	18.8	18.8	25.0
			Once a month	3	18.8	18.8	43.8
			Several times a month	8	50.0	50.0	93.8
			Less often	1	6.3	6.3	100.0
			Total	16	100.0	100.0	
	30-34	Valid	Once a week	1	100.0	100.0	100.0
	+35	Valid	Once a month	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	Several times a week	1	20.0	20.0	20.0
			Once a month	1	20.0	20.0	40.0
			Several times a month	2	40.0	40.0	80.0
			Less often	1	20.0	20.0	100.0
			Total	5	100.0	100.0	

What categories of products or services do you usually buy online? In this question, the descriptive statistics are measured and compared by gender and age variables and based on the maximum and minimum percentage.

Table 4-7: Descriptive Statistics

Descriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Other	304	1	0	1	12	.04	.195	.038
Electronics and accessories	304	1	0	1	102	.34	.473	.224
Clothing and footwear	304	1	0	1	212	.70	.460	.212
Books, e-books, and educational materials	304	1	0	1	70	.23	.422	.178
Cosmetics and hygiene products	304	1	0	1	125	.41	.493	.243
Home furnishings	304	1	0	1	95	.31	.464	.216
Groceries and beverages	304	1	0	1	15	.05	.217	.047
Subscriptions and digital services	304	1	0	1	96	.32	.466	.217
Tickets and reservations	304	1	0	1	143	.47	.500	.250
Valid N (listwise)	304							

Table 4-8: Frequency Table of Electronics & Accessories

Electronics and accessories							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	94	66.7	66.7	66.7
			yes	47	33.3	33.3	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	11	42.3	42.3	42.3
			yes	15	57.7	57.7	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	3	50.0	50.0	50.0
			yes	3	50.0	50.0	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	5	71.4	71.4	71.4
			yes	2	28.6	28.6	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	76	75.2	75.2	75.2
			yes	25	24.8	24.8	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	7	43.8	43.8	43.8
			yes	9	56.3	56.3	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	4	80.0	80.0	80.0
			yes	1	20.0	20.0	100.0
			Total	5	100.0	100.0	

In table 4-8, the highest usage for electronic equipment & accessories are 57.7% by females between the age of 25-29. The lowest one also related to the males by 24.8% within the age range of 18-24.

Table 4-9: Frequency Table of Clothing & Footwear

Clothing and footwear							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	42	29.8	29.8	29.8
			yes	99	70.2	70.2	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	8	30.8	30.8	30.8
			yes	18	69.2	69.2	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	2	33.3	33.3	33.3
			yes	4	66.7	66.7	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	3	42.9	42.9	42.9
			yes	4	57.1	57.1	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	29	28.7	28.7	28.7
			yes	72	71.3	71.3	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	8	50.0	50.0	50.0
			yes	8	50.0	50.0	100.0
			Total	16	100.0	100.0	
	30-34	Valid	yes	1	100.0	100.0	100.0
	+35	Valid	yes	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	yes	5	100.0	100.0	100.0

In the Table 4-9, the highest usage of clothing and footwear was by the males by 71.3% within the age range of (18-24). The highest rate for females was also 70.2% within the age group of (18-24).

Table 4-10: Frequency Table of Books, e-books & educational materials

Books, e-books, and educational materials							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	111	78.7	78.7	78.7
			Yes	30	21.3	21.3	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	21	80.8	80.8	80.8
			Yes	5	19.2	19.2	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	5	83.3	83.3	83.3
			Yes	1	16.7	16.7	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	5	71.4	71.4	71.4
			Yes	2	28.6	28.6	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	75	74.3	74.3	74.3
			Yes	26	25.7	25.7	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	12	75.0	75.0	75.0
			Yes	4	25.0	25.0	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	3	60.0	60.0	60.0
			Yes	2	40.0	40.0	100.0
			Total	5	100.0	100.0	

In the highest usage of educational materials like books, e-books etc., females were dominant by 28.6% within the age group (+35), while the males had 25.7% at the ages of (18-24) as the highest rate in comparison; Table 4-10.

Table 4-11: Frequency Table of Cosmetics & Hygiene Products

Cosmetics and hygiene products							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	88	62.4	62.4	62.4
			yes	53	37.6	37.6	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	15	57.7	57.7	57.7
			yes	11	42.3	42.3	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	3	50.0	50.0	50.0
			yes	3	50.0	50.0	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	2	28.6	28.6	28.6
			yes	5	71.4	71.4	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	57	56.4	56.4	56.4
			yes	44	43.6	43.6	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	10	62.5	62.5	62.5
			yes	6	37.5	37.5	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	2	40.0	40.0	40.0
			yes	3	60.0	60.0	100.0
			Total	5	100.0	100.0	

Among the cosmetics and hygiene fans, females were dominant by 71.4% at the age group of +35 as the highest, and males by 37.5% within the age range of 25-29 were the lowest.

Table 4-12: Frequency Table of Home Furnishings

Home furnishings							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	94	66.7	66.7	66.7
			yes	47	33.3	33.3	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	14	53.8	53.8	53.8
			yes	12	46.2	46.2	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	3	50.0	50.0	50.0
			yes	3	50.0	50.0	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	5	71.4	71.4	71.4
			yes	2	28.6	28.6	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	80	79.2	79.2	79.2
			yes	21	20.8	20.8	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	8	50.0	50.0	50.0
			yes	8	50.0	50.0	100.0
			Total	16	100.0	100.0	
	30-34	Valid	yes	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	4	80.0	80.0	80.0
			yes	1	20.0	20.0	100.0
			Total	5	100.0	100.0	

For furnishings, females within the age group of 30-34 ranked the first by 50% in comparison to males with 50% between 25-29. The lowest rate was related to males by 20.8% between 18-24.

Table 4-13: Frequency Table of Groceries & Beverages

Groceries and beverages							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	136	96.5	96.5	96.5
			Yes	5	3.5	3.5	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	25	96.2	96.2	96.2
			Yes	1	3.8	3.8	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	6	100.0	100.0	100.0
	+35	Valid	No	5	71.4	71.4	71.4
			Yes	2	28.6	28.6	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	94	93.1	93.1	93.1
			Yes	7	6.9	6.9	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	16	100.0	100.0	100.0
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

The highest consumers for groceries and beverage, the highest 100% was related to the men within the age range of +35, 30-34 and 25-29, while the lowest related to females by 3.5% between 18-24. Those who prefer not to reveal their genders also used 100% e-shopping for groceries and beverages.

Table 4-14: Frequency Table of Subscriptions & Digital Services

Subscriptions and digital services							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	90	63.8	63.8	63.8
			yes	51	36.2	36.2	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	24	92.3	92.3	92.3
			yes	2	7.7	7.7	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	5	83.3	83.3	83.3
			yes	1	16.7	16.7	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	7	100.0	100.0	100.0
Male	18-24	Valid	No	64	63.4	63.4	63.4
			yes	37	36.6	36.6	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	12	75.0	75.0	75.0
			yes	4	25.0	25.0	100.0
			Total	16	100.0	100.0	
	30-34	Valid	yes	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

In Table 4-14, the highest rate for digital subscriptions related to both male and females within the range of ages 18-24, the former with % 36.6 and the latter 36.2%. The remaining rested for the minor groups between (30-34), +35 and prefer not to say about their gender as 100% usage.

Table 4-15: Frequency Table of Tickets & Reservations

Tickets and reservations							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	72	51.1	51.1	51.1
			yes	69	48.9	48.9	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	16	61.5	61.5	61.5
			yes	10	38.5	38.5	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	4	66.7	66.7	66.7
			yes	2	33.3	33.3	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	4	57.1	57.1	57.1
			yes	3	42.9	42.9	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	49	48.5	48.5	48.5
			yes	52	51.5	51.5	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	12	75.0	75.0	75.0
			yes	4	25.0	25.0	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	2	40.0	40.0	40.0
			yes	3	60.0	60.0	100.0
			Total	5	100.0	100.0	

As Table 4-15 ,51.5% were male (18-24) as the highest rate in buying tickets and reservations online in comparison with the females 48.9% (18-24). The lowest rate related to males with 25% (25-29). The remaining of all, indicated other staff for buying online including mainly pet food, jewelry, CDs, computer games, semi-finished products for handicrafts, sports equipment, dietary supplements and cleaning products which were in minor calculations.

Which online shopping websites do you use most often? In this question, the descriptive statistics are measured and compared by gender and age variables and based on the maximum and minimum percentage.

Table 4-16: Descriptive Statistics

Descriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Other	304	1	0	1	43	.14	.349	.122
Allegro	304	1	0	1	188	.62	.486	.236
Empik	304	1	0	1	67	.22	.415	.172
Amazon	304	1	0	1	21	.07	.254	.065
Zalando	304	1	0	1	34	.11	.316	.100
AliExpress	304	1	0	1	68	.22	.417	.174
Shein	304	1	0	1	101	.33	.471	.222
OLX	304	1	0	1	34	.11	.316	.100
Online grocery stores	304	1	0	1	8	.03	.160	.026
Electronics/appliance stores	304	1	0	1	34	.11	.316	.100
Official brand websites	304	1	0	1	68	.22	.417	.174
Travel agencies and booking platforms	304	1	0	1	34	.11	.316	.100
Valid N (listwise)	304							

Table 4-17: Frequency Table of Allegro

Allegro				Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Age						
Female	18-24	Valid	No	56	39.7	39.7	39.7
			yes	85	60.3	60.3	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	6	23.1	23.1	23.1
			yes	20	76.9	76.9	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	1	16.7	16.7	16.7
			yes	5	83.3	83.3	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	2	28.6	28.6	28.6
			yes	5	71.4	71.4	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	43	42.6	42.6	42.6
			yes	58	57.4	57.4	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	5	31.3	31.3	31.3
			yes	11	68.8	68.8	100.0
			Total	16	100.0	100.0	
	30-34	Valid	yes	1	100.0	100.0	100.0
	+35	Valid	yes	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	3	60.0	60.0	60.0
			yes	2	40.0	40.0	100.0
			Total	5	100.0	100.0	

In Table 4-17, the highest rate pertains to female between 30-34 with 83.3%, and the lowest relates to male 57.4% between 18-24.

Table: 4-18: Frequency Table of Empik

Empik							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	112	79.4	79.4	79.4
			yes	29	20.6	20.6	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	21	80.8	80.8	80.8
			yes	5	19.2	19.2	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	3	50.0	50.0	50.0
			yes	3	50.0	50.0	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	6	85.7	85.7	85.7
			yes	1	14.3	14.3	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	79	78.2	78.2	78.2
			yes	22	21.8	21.8	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	12	75.0	75.0	75.0
			yes	4	25.0	25.0	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	2	40.0	40.0	40.0
			yes	3	60.0	60.0	100.0
			Total	5	100.0	100.0	

For Empik, females (30-34) 50% recorded as the highest, and 14.3 (+35) as the lowest. Male had 31.3% (25-29) in the second position.

Table 4-19: Frequency Table of Amazon

Amazon							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	131	92.9	92.9	92.9
			yes	10	7.1	7.1	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	24	92.3	92.3	92.3
			yes	2	7.7	7.7	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	6	100.0	100.0	100.0
	+35	Valid	No	7	100.0	100.0	100.0
Male	18-24	Valid	No	92	91.1	91.1	91.1
			yes	9	8.9	8.9	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	16	100.0	100.0	100.0
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

For Amazon, males with 8.9% (18-24) were predominant in comparison with females (25-29) by 7.7%. Those females with the age ranges of (30-34), +35 as well as males (25-29), (30-34) and +35 did not use Amazon.

Table 4-20: Frequency Table of Zalando

Zalando							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	123	87.2	87.2	87.2
			yes	18	12.8	12.8	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	25	96.2	96.2	96.2
			yes	1	3.8	3.8	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	4	66.7	66.7	66.7
			yes	2	33.3	33.3	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	7	100.0	100.0	100.0
Male	18-24	Valid	No	90	89.1	89.1	89.1
			yes	11	10.9	10.9	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	14	87.5	87.5	87.5
			yes	2	12.5	12.5	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

In Table 4-20, the highest peak was for females (30-34) by 33.3%. The lowest rate was for the females, too (25-29) by 3.8%. The minority groups i.e., (30-34), +35, and prefer not to say their genders had 100% non-usage of Zalando.

Table 4-21: Frequency Table of AliExpress

AliExpress							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	105	74.5	74.5	74.5
			yes	36	25.5	25.5	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	21	80.8	80.8	80.8
			yes	5	19.2	19.2	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	6	100.0	100.0	100.0
	+35	Valid	No	7	100.0	100.0	100.0
Male	18-24	Valid	No	77	76.2	76.2	76.2
			yes	24	23.8	23.8	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	14	87.5	87.5	87.5
			yes	2	12.5	12.5	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	yes	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

AliExpress had a 25.5% of highest percentage among females (18-24), and 12.5 % among males (25-29) as the lowest.

Table 4-22: Frequency Table of Shein

Shein							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	95	67.4	67.4	67.4
			yes	46	32.6	32.6	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	15	57.7	57.7	57.7
			yes	11	42.3	42.3	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	5	83.3	83.3	83.3
			yes	1	16.7	16.7	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	5	71.4	71.4	71.4
			yes	2	28.6	28.6	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	67	66.3	66.3	66.3
			yes	34	33.7	33.7	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	13	81.3	81.3	81.3
			yes	3	18.8	18.8	100.0
			Total	16	100.0	100.0	
	30-34	Valid	yes	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	2	40.0	40.0	40.0
			yes	3	60.0	60.0	100.0
			Total	5	100.0	100.0	

Visibly, 42.3% females (25-29) the highest comparing with the same gender (30-34) 16.7% as the lowest rank.

Table 4-23: Frequency Table of OLX

OLX							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	123	87.2	87.2	87.2
			yes	18	12.8	12.8	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	23	88.5	88.5	88.5
			yes	3	11.5	11.5	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	6	100.0	100.0	100.0
	+35	Valid	No	7	100.0	100.0	100.0
	18-24	Valid	No	90	89.1	89.1	89.1
			yes	11	10.9	10.9	100.0
			Total	101	100.0	100.0	
Male	25-29	Valid	No	15	93.8	93.8	93.8
			yes	1	6.3	6.3	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	yes	1	100.0	100.0	100.0
	18-24	Valid	No	5	100.0	100.0	100.0
	18-24	Valid	No	5	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

In table (4-23), females (18-24) by 12.8% on the peak in comparison with males at the same age group by 6.3% as the lowest could be seen.

Table 4-24: Frequency Table of Online Grocery Stores

Online grocery stores							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	138	97.9	97.9	97.9
			yes	3	2.1	2.1	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	26	100.0	100.0	100.0
	30-34	Valid	No	5	83.3	83.3	83.3
			yes	1	16.7	16.7	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	7	100.0	100.0	100.0
	18-24	Valid	No	97	96.0	96.0	96.0
			yes	4	4.0	4.0	100.0
			Total	101	100.0	100.0	
Male	25-29	Valid	No	16	100.0	100.0	100.0
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
	18-24	Valid	No	5	100.0	100.0	100.0

The (30-34) females age group had the maximum percentage 16.7% while the same gender within the (18-24) became up to 2.1% as the lowest. The males only reached 4% in comparison with.

Table 4-25: Frequency Table of Electronics/Appliance Stores

Electronics/appliance stores							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	124	87.9	87.9	87.9
			yes	17	12.1	12.1	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	21	80.8	80.8	80.8
			yes	5	19.2	19.2	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	6	100.0	100.0	100.0
	+35	Valid	No	6	85.7	85.7	85.7
			yes	1	14.3	14.3	100.0
			Total	7	100.0	100.0	
Male	18-24	Valid	No	91	90.1	90.1	90.1
			yes	10	9.9	9.9	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	16	100.0	100.0	100.0
	30-34	Valid	yes	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

Females (25-29) with 19.2% of electronic appliance stores were at first position, while males (18-24) by 9.9% were at the lowest.

Table 4-26: Frequency Table of Official Brand Websites

Official brand websites							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	108	76.6	76.6	76.6
			yes	33	23.4	23.4	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	20	76.9	76.9	76.9
			yes	6	23.1	23.1	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	4	66.7	66.7	66.7
			yes	2	33.3	33.3	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	7	100.0	100.0	100.0
Male	18-24	Valid	No	75	74.3	74.3	74.3
			yes	26	25.7	25.7	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	15	93.8	93.8	93.8
			yes	1	6.3	6.3	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

The highest usage of brand websites related to 33.3% (30-34), and the lowest were the females with (25-29) by 23.1%. The highest rate for males also were 25.7% (18-24), and the lowest 6.3% (25-29).

Table 4-27: Frequency Table of Travel Agencies & Booking Platforms

Travel agencies and booking platforms							
Gender	Age			Frequency	Percent	Valid Percent	Cumulative Percent
Female	18-24	Valid	No	123	87.2	87.2	87.2
			yes	18	12.8	12.8	100.0
			Total	141	100.0	100.0	
	25-29	Valid	No	25	96.2	96.2	96.2
			yes	1	3.8	3.8	100.0
			Total	26	100.0	100.0	
	30-34	Valid	No	4	66.7	66.7	66.7
			yes	2	33.3	33.3	100.0
			Total	6	100.0	100.0	
	+35	Valid	No	7	100.0	100.0	100.0
Male	18-24	Valid	No	90	89.1	89.1	89.1
			yes	11	10.9	10.9	100.0
			Total	101	100.0	100.0	
	25-29	Valid	No	14	87.5	87.5	87.5
			yes	2	12.5	12.5	100.0
			Total	16	100.0	100.0	
	30-34	Valid	No	1	100.0	100.0	100.0
	+35	Valid	No	1	100.0	100.0	100.0
Prefer not to say	18-24	Valid	No	5	100.0	100.0	100.0

33.3% of females (30-34) got the highest percentage in using brandings, whereas 3.8% of the same gender (25-29) considered as the lowest. The highest rate for males were also 12.5% within the range of (25-29) age group. Among those who selected 'other' as their choice, they mentioned to the following brand names as popular: Temu, Vinted, Rossman, Hebe, Steam, Zooplus, Koleo, and Online drugstores.

Have you been satisfied with your online shopping experience so far? In this question, the descriptive statistics are measured and compared by gender variable and based on the maximum and minimum percentage.

Table 4-28: Descriptive Statistics of Online Satisfaction

Descriptive Statistics									
Gender		N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Female	Have you been satisfied with your online shopping experiences so far?	180	3	1	4	345	1.92	.624	.390
	Valid N (listwise)	180							
Male	Have you been satisfied with your online shopping experiences so far?	119	2	1	3	215	1.81	.572	.327
	Valid N (listwise)	119							
Prefer not to say	Have you been satisfied with your online shopping experiences so far?	5	1	1	2	6	1.20	.447	.200
	Valid N (listwise)	5							

Table 4-29: Frequency Table of online Shopping Satisfaction

Have you been satisfied with your online shopping experiences so far?						
Gender			Frequency	Percent	Valid Percent	Cumulative Percent
Female	Valid	Definitely yes	40	22.2	22.2	22.2
		yes	118	65.6	65.6	87.8
		Neither Yes/No	19	10.6	10.6	98.3
		No	3	1.7	1.7	100.0
		Total	180	100.0	100.0	
Male	Valid	Definitely yes	33	27.7	27.7	27.7
		yes	76	63.9	63.9	91.6
		Neither Yes/No	10	8.4	8.4	100.0
		Total	119	100.0	100.0	
Prefer not to say	Valid	Definitely yes	4	80.0	80.0	80.0
		yes	1	20.0	20.0	100.0
		Total	5	100.0	100.0	

Females were the most satisfied by saying “yes” 65.6% in comparison with the males 63.9%. Only among women 1.7% were unsatisfied, and 10.6% of females had neither yes/no e-satisfaction in comparing with the males 8.4%. Those unknown genders also had 80% definitely yes for online shopping satisfaction. The charts also illustrated as below;



Figure 4-5: Males e-satisfaction Bar Chart



Figure 4-6: Females e-satisfaction Bar Chart

However, there could be found some unsatisfaction too, due to the following reasons. In Table 4-30), there were 14.5% unsatisfied about e-payment security. 10.2% because of insufficient product information on the website, 10.2% for the long delivery time, 17.1% for high delivery costs, 19.7% due to inability to touch, see or try the product, 9.5% for product quality issues, 7.6% problems with complaints/returns, 5.6% with hidden costs, 9.5% with product inconsistency with the description, and 3.6% with customer service problems. A few of respondents also stated that they try to purchase from reputable websites so as not to confront with scam or fraudulence.

Table 4-30: Frequency Table of Reason for e-shopping unsatisfaction

Concerns about online payment security					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	260	85.5	85.5	85.5
	yes	44	14.5	14.5	100.0
	Total	304	100.0	100.0	

Insufficient product information on the website					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	273	89.8	89.8	89.8
	yes	31	10.2	10.2	100.0
	Total	304	100.0	100.0	

Long delivery time					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	273	89.8	89.8	89.8
	yes	31	10.2	10.2	100.0
	Total	304	100.0	100.0	

High delivery costs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	252	82.9	82.9	82.9
	yes	52	17.1	17.1	100.0
	Total	304	100.0	100.0	

Inability to touch, see, or try the product					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	244	80.3	80.3	80.3
	yes	60	19.7	19.7	100.0
	Total	304	100.0	100.0	

Product quality issues					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	275	90.5	90.5	90.5
	yes	29	9.5	9.5	100.0
	Total	304	100.0	100.0	

Table 4-30: (Continued) Frequency Table of Reason for e-shopping unsatisfaction

Problems with complaints/returns					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	281	92.4	92.4	92.4
	yes	23	7.6	7.6	100.0
	Total	304	100.0	100.0	

Hidden costs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	287	94.4	94.4	94.4
	yes	17	5.6	5.6	100.0
	Total	304	100.0	100.0	

Product inconsistency with the description					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	275	90.5	90.5	90.5
	yes	29	9.5	9.5	100.0
	Total	304	100.0	100.0	

Customer service problems					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	293	96.4	96.4	96.4
	yes	11	3.6	3.6	100.0
	Total	304	100.0	100.0	

Do you trust online shopping? In Błąd! Nieprawidłowy odsyłacz do zakładki: wskazuje na nią sama., the highest rate for online trusting related to unknow genders by 80%; second, males 70.6% and females 62.8 by saying ‘yes’. Thus, the majority expressed having trust in online shopping. The charts demonstrated as the following, too.

Table 4-31: Frequency Table of Online Trust

Do you trust online shopping?					
Gender			Frequency	Percent	Cumulative Percent
Female	Valid	Definitely yes	17	9.4	9.4
		Yes	113	62.8	72.2
		Neither yes nor no	47	26.1	98.3
		No	3	1.7	100.0
		Total	180	100.0	100.0
Male	Valid	Definitely yes	4	3.4	3.4
		Yes	84	70.6	73.9
		Neither yes nor no	30	25.2	99.2
		No	1	.8	100.0
		Total	119	100.0	100.0
Prefer not to say	Valid	Yes	4	80.0	80.0
		Neither yes nor no	1	20.0	100.0
		Total	5	100.0	100.0

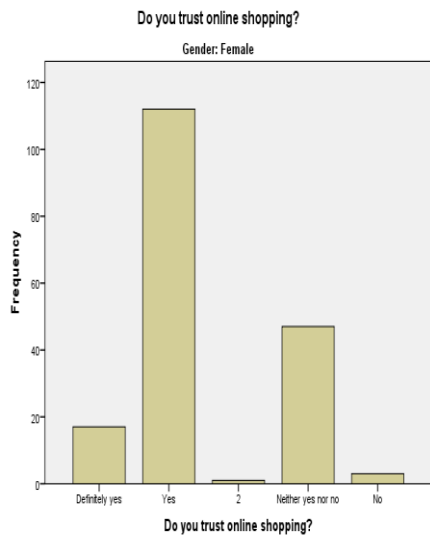


Figure 4-7: Males e-trust

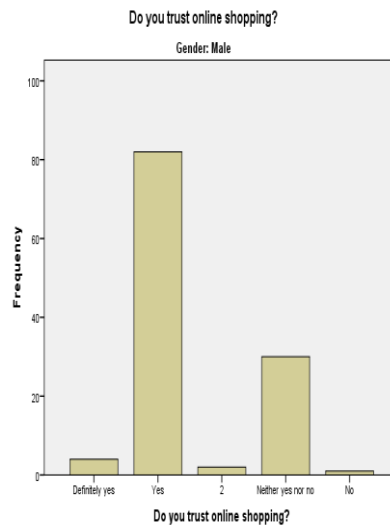


Figure 4-8: Females e-trust

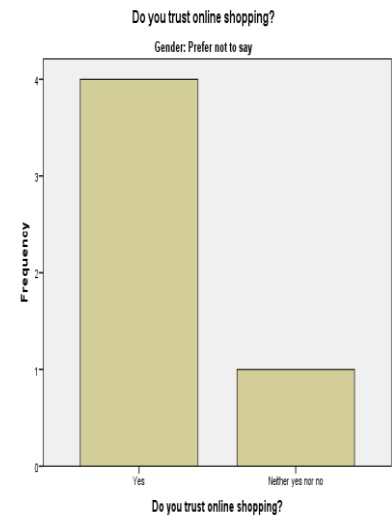


Figure 4-9: Unknown Genders e-trust

Nevertheless, there were a few respondents who still mistrust and complained that the delivered parcel does not actually look like the photos on the Internet, or something that they buy might not be the original. They also said before buying, they would check customers reviews. Some of them also worried that their addresses and personal data might not be well-protected, and there might be scammers. Also, some of them expressed their anxiety about courier problems.

Do you plan to shop online in the future?

Table 4-32: Descriptive Statistics of Shopping Intention in the Future

Descriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Do you plan to shop online in the future?	304	4	1	5	442	1.46	.553	.306
Valid N (listwise)	304							

Table 4-33: Frequency Table of e-shopping intention in the future

Do you plan to shop online in the future?						
Gender			Frequency	Percent	Valid Percent	Cumulative Percent
Female	Valid	Definitely yes	96	53.3	53.3	53.3
		Yes	81	45.0	45.0	98.3
		Neither yes nor no	2	1.1	1.1	99.4
		Definitely no	1	.6	.6	100.0
		Total	180	100.0	100.0	
Male	Valid	Definitely yes	74	62.2	62.2	62.2
		Yes	44	37.0	37.0	99.2
		Neither yes nor no	1	.8	.8	100.0
		Total	119	100.0	100.0	
Prefer not to say	Valid	Definitely yes	3	60.0	60.0	60.0
		Yes	2	40.0	40.0	100.0
		Total	5	100.0	100.0	

In Table 4-33, Males were dominant with 62.2% by saying ‘Definitely yes,’ and females with 53.4%. The graphs also illustrated as below;

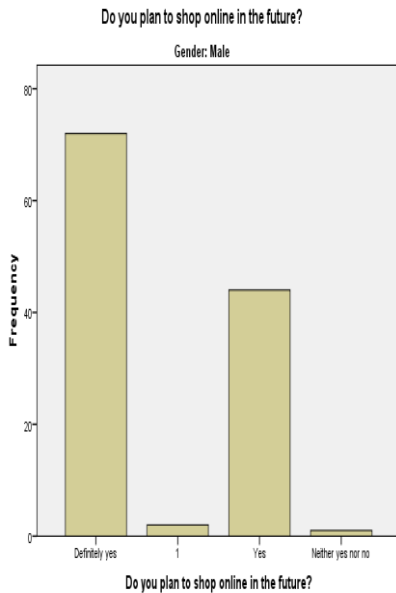


Figure 4-10: e-shopping intentions for Males

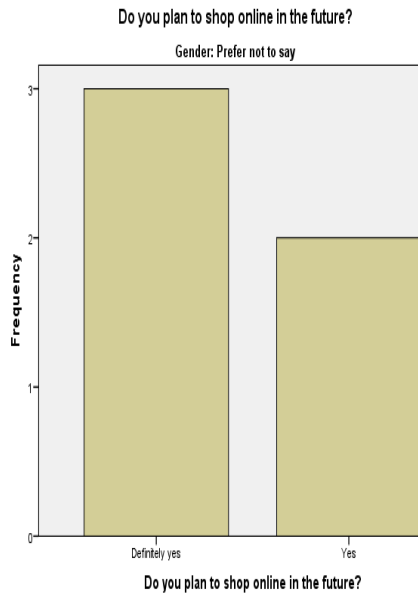


Figure 4-11: e-shopping intentions for unknown genders

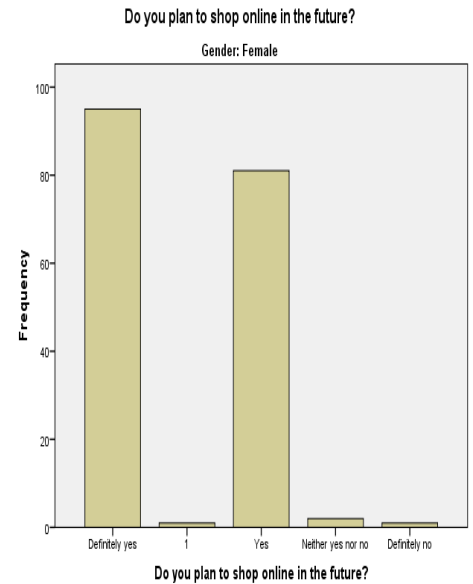


Figure 4-12: e-shopping intentions for females

What factors mainly influence your future online purchase? There were different feedbacks received by the respondents, which can be identified mainly as saving time and money, convenience, wide and better selective options , availability and easy access than physical stores, discounts promotions, collection from parcel lockers facility, reliability and efficiency, competitive prices for comparing, return/complaint policies, good customer service contacts, product guarantee, brand loyalty, lower delivery costs, items web assortment facility, product information, customers reviews, and fast/free delivery.

4.5. Part II: Analytical Statistics

Analytical Statistics deals with model fit assessments as well as assumptions support/rejection inferences. Albeit after kurtosis and skewness test it was found that the collected data of the study distributed normally; however, since Cronbach's Alpha benchmark could not still be achieved for three constructs of the model namely, online shopping; CA: 0.69, p. price advantage; CA: 0.64, and p. product awareness; CA: 0.69 for having the internal consistency reliability, the study could not use CB-SEM method for the analytical statistics, because it caused non-convergent and lack of discriminant validity for the model of study by AMOS. Instead, the study utilized PLS-SEM method by WarpPLS version 7.0, which had not to be met strictly with Cronbach's Alpha threshold and/or normality of data for its measurement (Hair et al., 2011). The partial Least Squares (PLS) are measured mainly by other alternatives such as Composite Reliability and Average Variance Extracted for convergent validity, which is more robust and appropriate indicators for the statistical power in PLS-SEM (Hair et al., 2013,2014,2019).

There are two distinct steps in analytical assessment using PLS-SEM i.e., the evaluation of the measurement and structural model. In the former, the evaluation of validity and reliability of constructs are measured (convergent & discriminant validity), and in the latter the correlations among the constructs are observed (Hair et al., 2011 Chin, 2010).

Before the assessment of measurement model performed, the types of the model should be defined in advance. There are generally two types of models for SEM estimation methods: reflective vs. formative, and sometimes but rarely mixed models (Garson, 2016). Reflective models, by definition, are the ones that in their path diagram, causal arrows go from the latent variable to the measured observable indicators. Reversibly, the formative models are those that arrows go from the indicators (observable variables) to the latent variable (factor). In a similar vein, in reflective models, indicators (observed variables) are a representative set of items of which all reflect the latent variable they are measuring, whereas in formative model, the indicators (observed variables) collectively represent all the dimensions of the latent variable (Henseler et al., 2009; Hair et al., 2014). Thus, as the model of this study is a reflective based model, the estimation method for the model treated as reflective. PLS can manage all types of reflective, formative or mixed models concurrently (Henseler et al., 2009; Hair et al., 2014).

4.5.1. Evaluation of the Measurement Model

The study applied eight reflective constructs/factors of which the constructs' names briefed for WarpPLS running system as e-shop (online shopping), p_shop (past shopping experience), web_q (p. web quality), e_trust (online trust), Pay_s (payment transaction safety), social (social influence), price (p. price advantage), and product (p. product awareness). For the evaluation of the measurement model as reflective, the reliability and validity of the model such as convergent and discriminant validity should be observed. The constructs' reliability in PLS measured by composite reliability (CR) to estimate a construct's internal consistency (Hair et al., 2011). In this way, it does not assume that all the indicators of construct are equally reliable hence makes it flexible for internal consistency estimation in PLS method. The benchmark for CR between 0.7 to 0.9 is satisfactory, while a CR below 0.6 is not considered reliable (Hair et al., 2011; 2013;2014).

To asses convergent validity estimation, the standardized loading of each indicator should be taken into account. Convergent validity refers to “whether the items/indicators comprising a scale behave as if they are measuring a common underlying construct” (Davis, 198). The benchmark for the standardized indicators loading should be ≥ 0.7 . Any indicators loadings between 0.4 to 0.7 should be omitted if only its removal leads to the increment of construct's composite reliability above the suggested benchmark. At the same time, any indicators loadings less than 0.4 should be omitted without any limitations (Hair et al., 2011). Another criterion that should be observed for convergent validity is the Average Variance Extracted (AVE). The acceptable value for AVE should be ≥ 0.50 , and any AVEs less than that should be amended (Hair et al., 2011). An AVE index of 0.5 or higher in convergent validity implies that the latent variable explains more than half of its indicator's variance (Hair et al., 2013). Thus, in order to meet the convergent validity of a construct, the values of indicators loadings as well as constructs AVEs should be compared and fixed at the same time.

On the other hand, discriminant validity refers to “the uniqueness of a construct and that what made it different from the other constructs so that there would be no overlap between the constructs used.” (Mayaseri et al., 2022). For discriminant validity assessment, there are two measures for considerations; the Fornell- Larcker criterion by cross loadings and Heterotrait-monotrait (HTMT) correlation ratio (Hair et al., 2011;2013; Mayaseri et al., 2022). The Fornell-Larcker postulates that a latent construct shares higher variance with its own scale than other constructs' scales in the structural model (Fornell & Larcker, 1981). In other words, it denotes that a construct is distinct

from the other constructs in the model in that the square root of the AVE of each construct should be more than the correlation between the assigned construct and other constructs in the model (Chin, 2010; Kock, 2014). This can be found through cross loadings, which indicates that an indicator loading with its relevant latent construct should be higher than its loading with all the remaining constructs (Hair et al., 2011;2013; Kock, 2014).

To test the convergent and discriminant validity the model was drawn in WarpPLS environment. After drawing the model and running Warp PLs the primary process of model depicted as Figure 4-13.

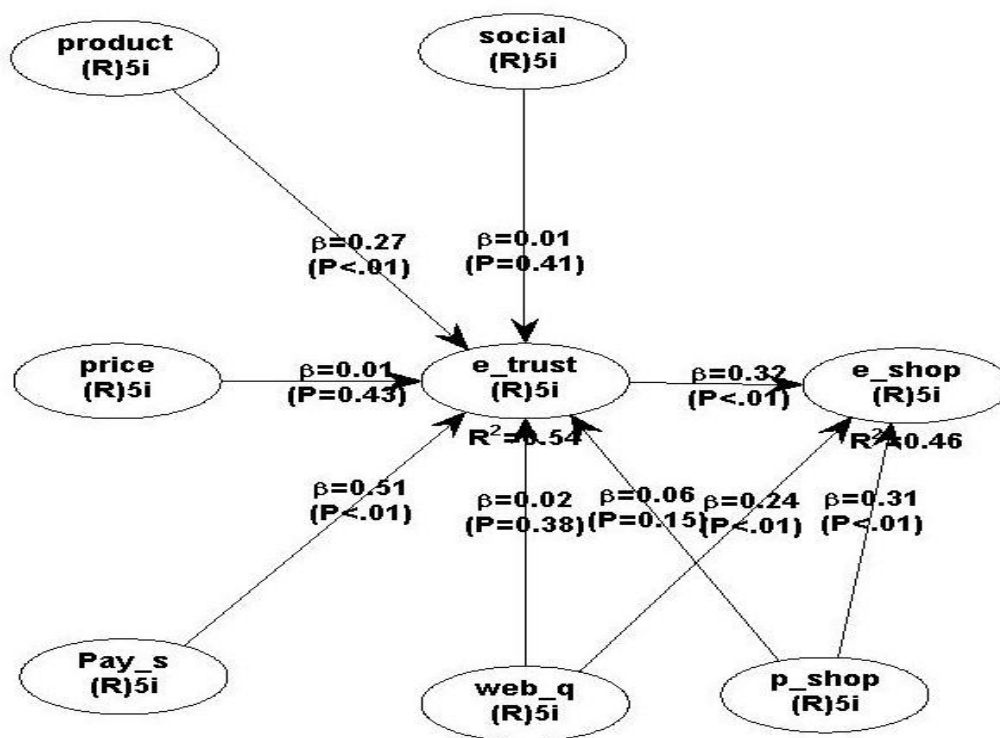


Figure 4-13: Primary Process of Model

For composite reliability assessment; firstly, the CR values checked according to the output of latent variables coefficients Table 4-34, the CRs of all constructs were > 0.7 . Thus, the quality of constructs in terms of composite reliability observed.

Table 4-34: Table of Latent Variables Coefficients

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
R-squared	0.464			0.543				
Adj. R-squared	0.459			0.534				
Composite reliab.	0.812	0.834	0.833	0.899	0.875	0.867	0.778	0.807
Cronbach's alpha	0.710	0.747	0.748	0.858	0.821	0.808	0.646	0.699
Avg. var. extrac.	0.464	0.506	0.502	0.640	0.585	0.567	0.429	0.458
Full collin. VIF	1.809	1.728	1.570	2.309	2.219	1.045	1.178	1.778
Q-squared	0.467			0.547				
Min	-2.759	-3.637	-4.368	-3.276	-3.991	-3.086	-3.018	-2.718
Max	2.091	1.640	1.710	2.230	2.120	1.631	1.735	2.555
Median	0.066	-0.099	-0.133	0.061	0.017	0.139	0.151	0.128
Mode	0.147	-0.218	-0.194	0.853	0.593	0.308	0.151	0.781
Skewness	-0.214	-0.534	-0.699	-0.332	-0.555	-0.463	-0.356	-0.072
Exc. kurtosis	-0.106	0.591	1.747	0.140	0.705	-0.159	-0.457	0.458
Unimodal-RS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unimodal-KMV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Normal-JB	Yes	No	No	Yes	No	No	No	Yes
Normal-RJB	Yes	No	No	Yes	No	No	No	No
Histogram	View	View	View	View	View	View	View	View

Notes: Unimodal-RS = Rohatgi-Székely test of unimodality; Unimodal-KMV = Klaassen-Mokveld-van Es test of unimodality; Normal-JB = Jarque-Bera test of normality; Normal-RJB = robust Jarque-Bera test of normality; click on "View" cell to see corresponding histogram.

Second, the AVEs of the constructs viewed. It was found that e_shop, price and product AVEs were <0.5. Thus, they should be amended by fixing the indicators loadings¹⁰. Among the eight factors only price had two indicators i.e., Q47 and Q48 loadings below 0.4. Thus, they removed from the construct scale without hesitation. Then, the AVES reviewed after deletion again. The results were as Table of 4-35.

¹⁰ (Ibid: Appendix D; I) Combined loadings and cross-loadings-Primary output results)

Table 4-35: Table of Latent Variables Coefficients

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
R-squared	0.464			0.544				
Adj. R-squared	0.459			0.534				
Composite reliab.	0.812	0.834	0.833	0.899	0.875	0.867	0.843	0.807
Cronbach's alpha	0.710	0.747	0.748	0.858	0.821	0.808	0.715	0.699
Avg. var. extrac.	0.464	0.506	0.502	0.640	0.585	0.567	0.646	0.458
Full collin. VIF	1.811	1.722	1.570	2.310	2.224	1.044	1.122	1.760
Q-squared	0.467			0.547				
Min	-2.759	-3.637	-4.368	-3.276	-3.991	-3.086	-2.760	-2.718
Max	2.091	1.640	1.710	2.230	2.120	1.631	1.391	2.555
Median	0.066	-0.099	-0.133	0.061	0.017	0.139	0.116	0.128
Mode	0.147	-0.218	-0.194	0.853	0.593	0.308	0.116	0.781
Skewness	-0.214	-0.534	-0.699	-0.332	-0.555	-0.463	-0.555	-0.072
Exc. kurtosis	-0.106	0.591	1.747	0.140	0.705	-0.159	-0.391	0.458
Unimodal-RS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unimodal-KMV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Normal-JB	Yes	No	No	Yes	No	No	No	Yes
Normal-RJB	Yes	No	No	Yes	No	No	No	No
Histogram	View	View	View	View	View	View	View	View

Notes: Unimodal-RS = Rohatgi-Székely test of unimodality; Unimodal-KMV = Klaassen-Mokveld-van Es test of unimodality; Normal-JB = Jarque-Bera test of normality; Normal-RJB = robust Jarque-Bera test of normality; click on "View" cell to see corresponding histogram.

It demonstrates now that all the constructs AVEs are > 0.5 , which implies the convergent validity of measurement of the model already met.

Table 4-36: Table of Latent Variables Coefficients

WarpPLS 7.0 - Latent variable coefficients

Close Help

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
R-squared	0.414			0.551				
Adj. R-squared	0.408			0.542				
Composite reliab.	0.808	0.834	0.833	0.899	0.875	0.867	0.843	0.817
Cronbach's alpha	0.683	0.747	0.748	0.858	0.821	0.808	0.715	0.702
Avg. var. extrac.	0.513	0.506	0.502	0.640	0.585	0.567	0.646	0.529
Full collin. VIF	1.647	1.761	1.595	2.275	2.211	1.034	1.123	1.736
Q-squared	0.416			0.554				
Min	-2.782	-3.637	-4.368	-3.276	-3.991	-3.086	-2.760	-2.841
Max	1.848	1.640	1.710	2.230	2.120	1.631	1.391	2.465
Median	-0.041	-0.099	-0.133	0.061	0.017	0.139	0.116	0.093
Mode	-0.041	-0.218	-0.194	0.853	0.593	0.308	0.116	0.831
Skewness	-0.242	-0.534	-0.699	-0.332	-0.555	-0.463	-0.555	-0.165
Exc. kurtosis	-0.079	0.591	1.747	0.140	0.705	-0.159	-0.391	0.298
Unimodal-RS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unimodal-KMV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Normal-JB	Yes	No	No	Yes	No	No	No	Yes
Normal-RJB	Yes	No	No	Yes	No	No	No	No
Histogram	View	View	View	View	View	View	View	View

Notes: Unimodal-RS = Rohatgi-Székely test of unimodality; Unimodal-KMV = Klaassen-Mokveld-van Es test of unimodality; Normal-JB = Jarque-Bera test of normality; Normal-RJB = robust Jarque-Bera test of normality; click on "View" cell to see corresponding histogram.

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Table 4-37 depicts discriminant validity based on Fornell-Larcker criterion. It is visible in the table that the square roots of AVEs of each construct (bolded) shares the highest variance with its own scale as well as higher cross loadings with other constructs correlations in a row. In view of these results, the Fornell-Larcker criterion for discriminant validity verified.

Table 4-37: Correlations among latent variables with square roots. of AVEs

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop	0.681	0.56	0.473	0.512	0.467	0.041	0.161	0.435
p_shop	0.56	0.712	0.511	0.383	0.451	0.02	0.2	0.353
web_q	0.473	0.511	0.708	0.361	0.39	0.042	0.157	0.443
e_trust	0.512	0.383	0.361	0.8	0.691	-0.05	0.249	0.569
Pay_s	0.467	0.451	0.39	0.691	0.765	-0.042	0.313	0.525
social	0.041	0.02	0.042	-0.05	-0.042	0.753	0.013	0.123
price	0.161	0.2	0.157	0.249	0.313	0.013	0.804	0.233
product	0.435	0.353	0.443	0.569	0.525	0.123	0.233	0.677

Another discriminant validity criterion that should be observed is the Heterotrait-monotrait (HTMT). HTMT first proposed by Henseler et al., (2015) as a new approach to evaluate the discriminant validity in SEM as they claimed that Fornell-Larker method could not reliably detect having discriminant validity amongst the constructs. The value to meet the HTMT criteria should be < 0.9 (Henseler et al., 2015; Mayaseri et al., 2022). Table 4-38 shows the HTMT results.

Table 4-38: Table of HTMT Ratios

HTMT ratios (good if < 0.90, best if < 0.85)								
	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop								
p_shop	0.762							
web_q	0.672	0.673						
e_trust	0.525	0.489	0.458					
Pay_s	0.511	0.579	0.496	0.818				
social	0.189	0.169	0.138	0.108	0.145			
price	0.239	0.328	0.267	0.311	0.415	0.132		
product	0.499	0.432	0.596	0.749	0.682	0.136	0.335	
P values (one-tailed) for HTMT ratios (good if < 0.05)								

By viewing the values of HTMT ratio, it is visible that the correlation values of each construct to each other is < 0.9. Thus, it would be verified that the HTMT criterion observed as well. After obtaining the evaluation of measurement model, the image of the secondary process of model were as Figure 4-14.

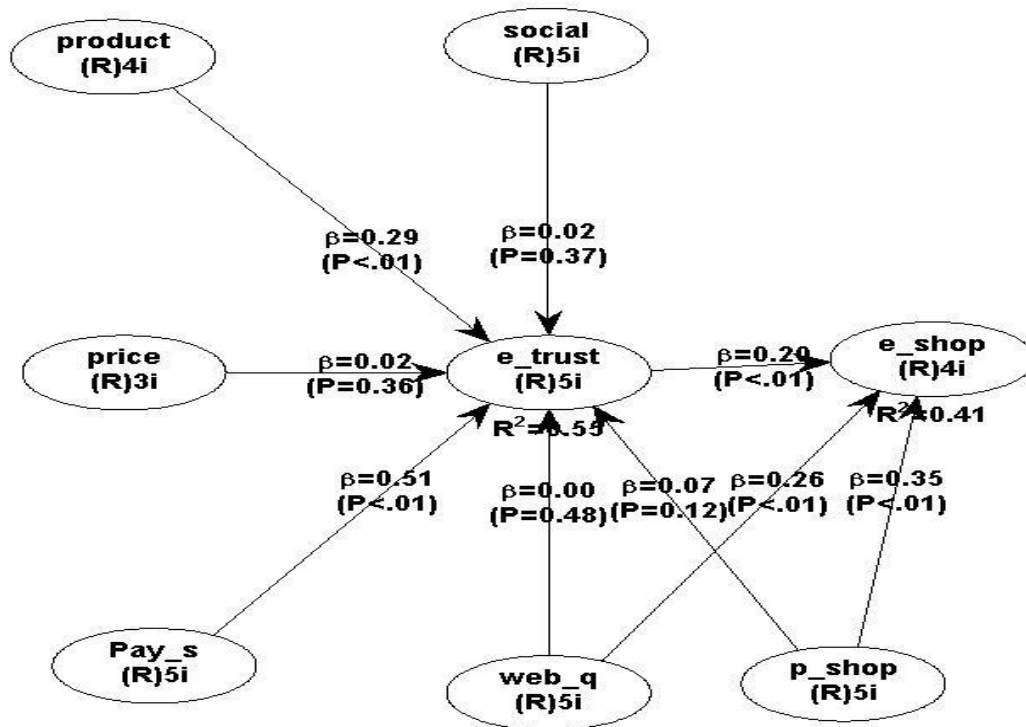


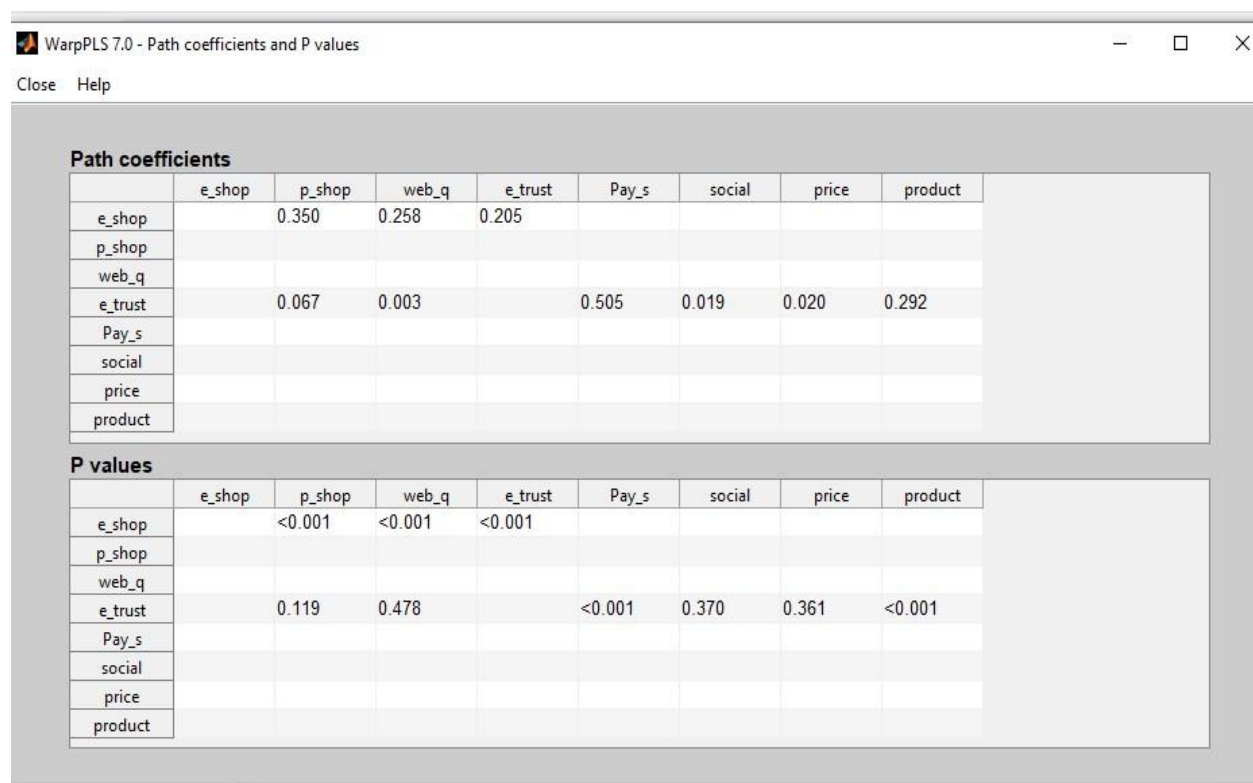
Figure 4-14: Secondary Process of Model

4.5.2. Evaluation of Structural Model

In the evaluation of the structural model there are some major criteria that should be considered; namely, 1) the value of R², 2) Stone–Geisser’s; Q², 3) the assessment of the significance of path coefficients for the endogenous constructs, and 4) F² (effect size for path coefficients), which is the share of R² on each construct. In the Table 4-36 & Figure 4-14, the R² of e_shop and e_trust is 0.41 and 0.55 respectively, which would be considered moderate and above the threshold (Hair et al., 2011). R² is the explanatory power indicator, and supports the overall quality of the model. There are three different values designated for R² quality for endogenous variables, which are 0.75 (substantial), 0.5 (moderate) and 0.25 (weak) respectively. A value of 0.2 for R² is satisfactory (Hair et al., 2011;2013; Chin, 1998). Also, the predictive relevance of effects identified by indicator Q² (Stone-Geisser) estimated for e_shop and e_trust is 0.41 and 0.55, which are > 0 (zero) hence meeting above the benchmark regarding the acceptability of capability of predicative relevance of the model, which demonstrates that the model has moderate quality overall (Hair et al., 2013). Third, path coefficient & relevant p-values should be checked that is shown in Table 4-39. The individual path coefficients of the PLS- SEM is the same as standardized beta coefficients of ordinary least squares regression shown by indicator of β in the model of Figure 4-14). In Table

4-39), the paths coefficients as well as p-values of each construct according to the hypotheses and their directions in the model presented.

Table 4-39: Table of Path coefficients & P Values



The screenshot shows the WarpPLS 7.0 interface with two tables displayed. The first table, titled 'Path coefficients', shows the following values:

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.350	0.258	0.205				
p_shop								
web_q								
e_trust		0.067	0.003		0.505	0.019	0.020	0.292
Pay_s								
social								
price								
product								

The second table, titled 'P values', shows the following values:

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		<0.001	<0.001	<0.001				
p_shop								
web_q								
e_trust		0.119	0.478		<0.001	0.370	0.361	<0.001
Pay_s								
social								
price								
product								

As all the betas values are > 0 , thus it indicates that they are positively significant. The beta values could be either positive or negative, and should be compared with the direction of the hypotheses. For hypotheses assessment the p -values should be significant of which the value should be < 0.05 as the requirement to validate an assumption (Hair et al., 2014). Thus, by considering the coefficients of p - values of Table 4-39, it would be found that among having nine hypotheses, five assumptions validated and the other four were rejected. The results of all hypotheses testing are depicted in Table 4-40. Next, F^2 (effect size for path coefficients) should be viewed to find out the hypotheses power. An effect size of F^2 recognized by three various values namely 0.02 (weak), 0.15 (moderate), and 0.35 (strong effect) (Hair et al., 2013). The effect sizes of path coefficients are illuminated at Table 4-41.

Table 4-40: Table of Hypotheses Results

#	Hypotheses	P-Value	Supported
H ₁	e-trust → e-shop	<0.001	Yes
H ₂	Product → e-trust	<0.001	Yes
H ₃	Price → e-trust	0.361	No
H ₄	Pay_s → e-trust	<0.001	Yes
H ₅	Social s → e-trust	0.37	No
H ₆	Web_q → e-trust	0.478	No
H _{6a}	Web_q → e-shop	<0.001	Yes
H ₇	P_shop → e-trust	0.119	No
H _{7a}	P_shop → e-shop	<0.001	Yes

Table 4-41: Table of Effect Sizes for Path Coefficients

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.197	0.132	0.086				
e_trust		0.026	0.001		0.35	0.002	0.006	0.17

Amongst the supported assumptions (the bold yellow highlighted), p_shop (past experience shopping) had the highest F² value with e-shop i.e., 0.19 recognized as a moderate hypothesis effect and Pay_s (payment transaction safety) with e_trust having F² value of 0.35 as the highest known

as strong hypothesis effect. Through the table of effect sizes for path coefficients, the factors' weights also could be detected by ranking from the highest to the lowest. For e-shop, 1) p-shop 2) web quality 3) e-trust have the highest weights for online shopping, and 1) pay_s 2) product has the highest weights for online trusting respectively.

4.5.3. Mediation Analysis

Online trust hypothetically developed as the mediator in the model according to the literature reviews, and theories as discussed in Chapter 1 & Chapter 2. To analyze e-trust as the mediator, both indirect and total effects mediation should be estimated (Hair et al., 2013; Albers; 2009; Sattler et al., 2010). This could be done via the VAF (variance accounted for) formula by having the indirect effect/total effect. The VAF coefficients have three types of interpretation namely <20% = no mediation, 20%-80%= partial mediation, and > 80% = full mediation (Hair et al., 2019). The following tables are the main statistical indices to measure the mediator with indirect effects.

Table 4-42: Indirect effects for paths with 2 segments

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.014	0.001		0.103	0.004	0.004	0.06

Table 4-43: P values of indirect effects for paths with 2 segments

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.367	0.494		0.005	0.462	0.459	0.069

Table 4-44: Effect sizes of indirect effects for paths with 2 segments

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.008	0		0.04	0	0.001	0.021

As an indirect effect of independent variables to dependent variable, e-trust only mediates between Pay_s (Payment transaction safety) and e_shop (online shopping) i.e., p -value < 0.05, Indirect effect (β) = 0.103 and Effect size (f^2) = 0.040 (weak).

Table 4-45: Total Effects

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.364	0.258	0.205	0.103	0.004	0.004	0.06
E_trust		0.067	0.003		0.505	0.019	0.02	0.292

Table 4-46: Table of P-value for total effects

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		<0.001	<0.001	<0.001	0.005	0.462	0.459	0.069
E_trust		0.119	0.478		<0.001	0.37	0.361	<0.001

Table 4-47: Effect sizes for total effects

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product
e_shop		0.205	0.132	0.086	0.04	0	0.001	0.021
E_trust		0.026	0.001		0.35	0.002	0.006	0.17

By viewing the above three tables of total effects, it could be found that Pay_s affects e_shop only through e_trust; p_shop and web_q are dominant direct drivers, and product has a weak, non-significant total effect on e_shop. In a similar vein, Pay_s is the strongest driver for of e_trust and product as the moderate one. In conclusion, the mediating role of e_trust was assessed by using indirect and total effects in WarpPLS. The results indicate that the indirect effect of payment transaction safety on e-shopping through e_trust was significant ($\beta = 0.103$, $p = 0.005$, $f^2 = 0.040$), whereas the total effect remained significant ($\beta = 0.103$, $p = 0.005$). The Variance Accounted For (VAF) value then calculated by the formula below:

Equation 4-1: Variance Accounted For, Formula

$$VAF = \frac{\text{Indirect Effect}}{\text{Total Effect}}$$

$$\text{Thus, VAF} = \frac{0.103}{0.103} = 1.00 (100\%)$$

The value of 1.00 (100%), indicates that e_trust fully mediates the relationship between payment transaction safety and e-shopping behavior.

Chapter 5. Discussion & Conclusion

5.1. Introduction

In this chapter; first, the principal findings of the investigation would be discussed and interpreted with respect to research objectives, questions and hypotheses. Second, it follows with conclusion respectively. Third, the theoretical and managerial applied contributions would be highlighted; and lastly, the limitations and future research works dealt with.

5.2. The evaluation of the adopted hypotheses

The main objective of this study led by finding the key important factors affecting the consumers' e-purchasing from the behavioural point of view. Thus, at first step, the study initiated the investigation by targeting general questions to 304 Polish university students as the population sample about the manner of their online shopping decisions/choices in various aspects. Furthermore, the study deliberated which factors had more weighting impact on the e-clients' online shopping relatively. Ultimately, seven factors elicited from the e-commerce literature; namely, perceived product awareness, perceived price advantage, payment transaction safety, online trust, perceived web quality, perceived social influence and past online shopping experience. These attributes then converged into the Theory of Planned Behaviour proposed by Ajzen (1991) as the conceptual model framework. Then, with respect to the available statistical estimations, PLS-SEM performed for hypotheses analyses. Lastly, the role of trust as the mediator assessed as well. Amongst nine assumptions, five of them became validated and the rest were rejected. The empirical results indicated that perceived product awareness and payment transaction safety were positively significant with perceived online trust. Besides, perceived online trust, perceived web quality and past online shopping experience were positively significant with online shopping, whereas it was found that perceived price advantage, perceived social influence, perceived web quality and past online shopping experience had no significance with perceived online trust. As such, past shopping experience, perceived web quality and online trust had the highest-ranking weights with online purchasing relatively. In light of mediation in the model, perceived online trust tuned out to play the role of mediator between payment transaction safety and online shopping. Overall, the findings revealed that consumer online trust has remained as a vital mechanism in the scope of online purchasing decision process. Thus, the findings interpreted in broad represented as the following:

The Effect of Perceived Online Trust to Online Shopping

H₁: Perceived online trust has a positive impact on the online shopping

$\beta=0.205$; $p\text{-value}= <0.001$

✓ Supported. The principal assumption of this study verified that perceived online trust significantly influences online shopping behaviour. Trust serves as a core psychological mechanism decreasing uncertainty and encouraging transactional commitment (Mc Knight & Shervani, 2001; Koufaris & Sosa, 2004; Elwalda et al., 2016; Yousafzai & Pallister, 2005; Punyatova, 2018; Urbonavičius, et al., 2023; Putra & Antonio, 2021). From the TPB model analysis point of view, this finding reinforces the argument that trust acts as a mediating factor linking antecedent perceptions to actual consumer behaviour in the online environments (Kaur & Quareshi, 2015; Mc Knight et al., 2001, 2004; Jarvenpaa et al., 2000; Stouthuysen et al., 2018; Dabbous et al., 2020; Alnoor et al., 2022). The verification of this hypothesis indicating that it was congruent with the other findings (Kaur & Khanam Quareshi, 2015; Lee et al., 2016; Kouser et al, 2018; Hoang, 2020; Chetoui et al. 2021; Quang & Thuy, 2022; Jeddy et al., 2022).

The Effect of Perceived Product Awareness Trust to Online Trust

H₂= Perceived product awareness has a positive impact on the perceived online trust

$\beta=0.292$; $p\text{-value}= <0.001$

✓ Supported. The findings demonstrate that perceived product awareness significantly impacts on perceived online trust. This implies that consumers who receive clear, detailed, and accessible product information tend to perceive online vendors as more trustworthy. This result aligns with previous studies emphasizing the importance of information transparency in the uncertainty avoidance during online transactions (Hossain et al., 2022; Bartels, 2015; Mofokeng, 2021; Singh & Sirvastava, 2018; Bucko et al., 2018; Ningrum & Hayuningtias, 2022; Devedi et al., 2017; Alam, 2020; Fu et al., 2018). From the TPB perspective, product awareness may enhance favourable attitudes toward online purchasing by reducing ambiguity and supporting informed decision-making instead. Thus, providing accurate product descriptions and visualizations can enhance trust formation.

The Effect of Perceived Price Advantage to Perceived Online Trust

H₃ = Perceived price advantage has a positive impact on the perceived online trust.

$\beta = 0.020$; $p\text{-value} = 0.361$

× Rejected. Contrary to expectations, perceived price advantage did not significantly influence perceived online trust. One possible justification could be that consumers may consider price as a transactional or economic factor rather than a trust-building element. In addition, in mature e-commerce markets, lower prices alone may not signal reliability or credibility. In contrary, lower price may even reflect an opposite attitude of a low product quality. Thus, this finding reveals that trust is shaped more by quality and security perceptions than by economic benefits.

The Effect of Payment Transaction Safety to Perceived Online Trust

H₄ = Perceived payment transaction safety has positive impact on the perceived online trust

$\beta = 0.505$; $p\text{-value} < 0.001$

✓ Supported. The study found a positive and significant relationship between perceived payment transaction safety and online trust. It was detected as one of the robust predictors of online trust. This finding confirms that perceived financial and security protection plays an essential role in trust development in the e-commerce environments. (Chang et al., 2016; Tandon et al., 2018; El-Deeb & Hamed, 2019; Suki & Suki, 2017; Arifin et al., 2018; Jordan et al., 2018; Zhao et al., 2017; Nurfatiasari & Aprianingsih, 2017; Dillahunt et al., 2019; Oghazi et al., 2018). This result supports institutional-based trust theories suggesting that security mechanisms reduce perceived risk and encourage behavioural intention. Consumers appear to prioritize secure payment systems as a prerequisite for trusting online sellers (McKnight et al., 1998, 2002; Grabner-Kräuter & Faullant, 2008; Hobbs & Goddard, 2015; Yeon et al., 2019). The result was also in direction with the past research findings (Javadi et al., 2012; Hoang, 2020).

The Effect of Perceived Social Influence to Perceived Online Trust

H₅ = Social influence has positive impact on the perceived online trust.

$\beta = 0.019$; $p\text{-value} = 0.307$

× Rejected. The results convey that perceived social influence does not significantly affect online trust. This outcome may reflect the increasing independence of the Polish Generation Z, who rely more on personal experience and website evaluation rather than external social opinions. Within the TPB framework, this suggests a reduced influence of subjective norms in digital shopping environments, especially among younger, digitally experienced users. Thus, eWOM may not be as robust as before for the consumers. This result then contradicts with the past research findings on subjective norms (Chetioui et al., 2021; Gang et Wang, 2022).

The Effect of Perceived Web Quality to Perceived Online Trust

H₆ = Perceived web quality has positive impact on the perceived online trust.
β=0.003; p-value=0.478

× Rejected. The findings reveal that perceived web quality has no significance with perceived online trust. This suggests that contrary to expectations, web quality is now considered as a basic prerequisite for the e-clients rather than a determinant of trust. In other words, in to date highly competitive digitally mature environment, an e-vendor should already equip its functionality and reliability with robust web designing otherwise can neither attract consumers nor stay in the tantalizing e-commerce domain. This result indeed implies the argument that technical attributes alone are not sufficient to build trust in contemporary online interfaces; rather, security, privacy, and organizational credibility are more important to form trust perceptions among the consumers.

The Effect of Web Quality on Online Shopping

H_{6a} = Perceived web quality has positive impact on the online shopping.
β=0.258; p-value=<0.001

✓ Supported. This result confirms that perceived web quality significantly influences online shopping behaviour. A user-friendly, visually appealing, and functional website enhances consumers' perceived control and convenience, which in turn encourages purchase behaviour (Suki & Suki, 2017; Chi, 2018; Kousar et al., 2018; Nurfatiasari, & Aprianingsih; 2017; Lo et al., 2016; Jadhav & Khana, 2016; Pereira et al., 2016; Tandon et al., 2018). This finding supports prior research suggesting that website quality functions as a facilitating condition within the TPB model. This finding also corresponds with the previous research (Kaur & Khanam Quareshi, 2015; Lee et al., 2016; Han et al., 2018; Kouser et al., 2018).

The Effect of Past Online Shopping Experience on Perceived Online Trust

H₇ = Past online shopping experience has positive impact on the perceived online trust.

$\beta=0.067$; $p\text{-value}=0.119$

× Rejected. The finding demonstrates that past online shopping experience did not have significantly effect on online trust. It may imply that trust may be acquired institution-based like rather than experience-based in the experimental context, and that consumers may rely more on infrastructure assurances (e.g. platform guarantees, payment protection, legal frameworks and institutional mechanisms) than on prior transactions. Thus, it could be inferred that being competent in the e-environment does not essentially enhance trust toward the platform. This result reinforces the conceptual distinction between internal control beliefs as self-efficacy and relational trust perceptions within the TPB model.

The Effect of Past Online Shopping Experience on Online Shopping

H7a = Past online shopping experience has positive impact on the online shopping.

$\beta=0.350$; $p\text{-value}<0.001$

✓ Supported. Past online shopping experience was found to positively influence online shopping behaviour. Consumers with prior positive experiences show higher confidence and lower perceived risk, which increases their likelihood of future online purchases. This result aligns with the concept of self-efficacy, indicating that past successful behaviour strengthens behavioural intention (Fenech, 2000; Bart et al., 2005; Sultan & Uddin, 2011; Wang et al., 2018; Stouthuysen et al., 2018; Mofokong, 2021; Ling et al., 2010). The results also aligned with the past research findings (Han et al., 2018; Zoghi, 2019; Lubis et al., 2019; Hoang, 2022; Mainardes et al., 2020).

5.3. Conclusion

This thesis investigated the factors influencing merchandise online shopping behaviour through the mediating role of trust. The findings depict that trust remains a fundamental determinant of online purchasing decisions. While economic and social factors may not directly build trust, payment security and product awareness forms initial trust. On the other hand, website quality, and prior online shopping experience play essential roles in shaping consumer buying decision. It was

also found that past shopping experience, perceived web quality and online trust had the robust ranking weights with online purchasing in order.

Overall, the study confirms that integrating trust into behavioural model offers a deeper understanding of online shopping dynamics and provides valuable insights for both academics and practitioners. In a similar vein, trust performing as a pivotal predictor (mediator) in the e-commerce environment that can indeed amplify the relationship between website technical attributes and e-purchasing behaviour.

5.4. Theoretical & Managerial Implications

This research contributes to theory in several ways. Firstly, it extends the TPB framework by integrating perceived online trust as a mediating construct in online shopping behaviour. Second, it clarifies which factors primarily build trust (product awareness and payment transaction safety) versus those that directly influence behaviour (web quality and past e-shopping experience). Third, it provides empirical evidence from the Polish e-commerce context, contributing to the limited literature available on online consumer behaviour in this region.

In terms of managerial implications, the findings suggest several practical recommendations for e-vendors and digital marketers 1) To improve payment security systems, visibility and communicate safety assurances clearly 2) To provide detailed product information and transparent descriptions along with the right images of products. 3). To invest in website usability, navigation, and design quality 4) To strengthen customer experience to encourage re-purchasing by the ease of use of working with their system, or offering bonus, coupons etc. 5) To concentrate less on price competition alone and more on trust-building strategies such as smooth return policies, product quality and guarantees, swift delivery as well as less or free delivery charges.

5.5. Limitations of the Study

Like any other research, this study also had no exceptions from boundaries in practice. Firstly, the sample was limited to university students, which may infer generalizability with caution. Second, the study used PLS-SEM or variance-based estimation for testing the assumptions instead of covariance-based estimation CB-SEM due to not reaching the Cronbach's Alphas threshold for a few of constructs and the time limits for gathering further responses to meet the benchmark. Nonetheless, those limitations do not undermine the overall validity of the findings.

Firstly, the sampling procedure limits the generalizability of the findings. The study was conducted on a sample of students from Polish universities (371 total responses, of which 304 were fully completed and valid), which—despite the coherence and homogeneity of this population—does not reflect the full demographic and behavioral structure of Polish e-consumers (let alone those in an international context). Students tend to shop online in specific product categories, and they are typically more digitally proficient and more sensitive to price incentives. These characteristics may distort the relationships between the trust construct and purchasing behavior. Therefore, caution is required when generalizing the findings, which suggests the need for replications in more diverse population samples.

Secondly, the research design relied on a self-reported online survey (LimeSurvey) and a cross-sectional measurement, which—as in all survey-based studies—introduces the risk of common method bias and socially desirable responding. Additionally, due to the inability to reach the Cronbach's alpha threshold for several constructs and time constraints preventing the collection of additional responses, a variance-based PLS-SEM approach (WarpPLS) was used instead of covariance-based CB-SEM. Although PLS-SEM is appropriate for exploratory and complex models because of its lower distributional and sample-size requirements, it limits the possibility of using traditional covariance-based model-fit metrics and may affect the interpretation of the strength and stability of structural parameters, but it can be considered as an approximate estimation of covariance-based method.

Thirdly, the conceptual scope of the model—focused on selected antecedents of trust (such as product awareness, transaction security, website quality) and on the mediating role of trust in online purchasing—omits several potentially important determinants. These include: platform/brand reputation, delivery and return conditions, privacy policy beyond payment security, post-purchase experience, as well as the intensity of mobile device usage and omnichannel purchase paths. Excluding such variables may result in omitted variable bias and underestimation of moderating interactions (e.g., differences between marketplaces and standalone online stores). Moreover, testing the mediating role of trust using cross-sectional data does not allow for fully determining causality or the dynamic nature of trust formation over time.

5.6. Directions for future research

For the future avenue of research, these investigations are suggested. 1) The findings of this study resulted from Polish context. It would be a good idea to conduct the research in the European cross-countries to compare the findings with each other. 2) In literature, satisfaction is known as a predictor of trust. Thus, examining satisfaction as the moderating variable in the model that may enhance/hinder trust is recommended. 3) It would be also advised to examine the role of digital literacy as a control variable of trust and buying decision in the model.

Firstly, future studies should consider cross-cultural and cross-national replications, ideally using multi-group analysis with measurement invariance testing. Expanding the sample beyond students and beyond Poland would allow researchers to assess the stability of the observed effects, compare the importance of specific factors across different institutional contexts (e.g., consumer protection regimes, e-commerce maturity, payment habits), and distinguish universal determinants from culturally specific ones. Including European countries—as originally suggested—would help identify transnational patterns and map heterogeneity in the mechanisms influencing trust and purchasing decisions.

Secondly, the model should be extended with additional moderated and mediated relationships. In the literature, satisfaction is frequently conceptualized as a precursor (or co-existing component) of trust. Therefore, testing its moderating role would be worthwhile to determine whether and to what extent it strengthens or weakens the effects of determinants (e.g., service quality, payment security) on trust, as well as the effects of trust on shopping intentions and behaviors. Furthermore, it is recommended to incorporate digital literacy as a control variable (or moderator), allowing for a better understanding of differences in information processing and risk management among users with varying levels of digital competence. Extending trust measurement to multidimensional components (integrity, competence, benevolence of the vendor) may also help explain why certain paths were statistically insignificant for trust but significant for online shopping.

Thirdly, future research should consider methodological triangulation: (a) longitudinal panel studies to capture the dynamics of trust formation (e.g., before purchase, after purchase, after post-sales support), (b) experiments/A-B testing manipulating messages about payment security, product transparency, or website usability to evaluate causal effects, and (c) qualitative methods (e.g., in-depth interviews, shopping diaries) to better understand the psychological mechanisms

underlying trust. Additionally, combining self-reported survey data with behavioral data (clickstream, transaction logs) could reduce the risk of common method bias and enhance the validity of conclusions about real purchasing behavior. In the area of advanced modeling, future studies may test alternative specifications (full versus partial mediation), non-linear relationships, interaction effects, and segmentation procedures (such as FIMIX-PLS) to identify latent classes of e-consumers differing in trust-building mechanisms.

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Appendix (A): Survey questionnaire

Title: Factors Influencing Merchandise Online Shopping: The Mediating Role of Trust

General Questions

1. Gender: ☐ Male ☐ Female ☐ Prefer not to say
2. Age: ☐ 18-24 ☐ 25-29 ☐ 30-34 ☐ +35
3. Education: ☐ Secondary School ☐ Vocational Degree ☐ Bachelor ☐ Master ☐ PhD
4. Occupation: ☐ Public Administration ☐ non-governmental Organization (NGO) ☐ Business Sector ☐ Freelancer ☐ Student ☐ Other ☐ No answer
5. How often do you shop online?

☐ Several times a week ☐ Once a week ☐ Once a month ☐ Several times a month ☐ Less often ☐ I don't shop online
6. What categories of products or services do you usually buy online?
Please select the 3 categories you visit most often.

☐ Electronics and accessories (e.g., phones, headphones)

☐ Clothing and footwear

☐ Books, e-books, and educational materials

☐ Cosmetics and hygiene products

☐ Home furnishings (e.g., decorations, household appliances, tools)

☐ Groceries and beverages

☐ Subscriptions and digital services (e.g., streaming, online courses, software)

☐ Tickets and reservations (e.g., events, travel, transportation)

☐ Other.....

7. Which online shopping websites do you use most often?

Please select up to 3 websites you visit most frequently.

☐ Allegro

☐ Empik

☐ Amazon

☐ Zalando

☐ AliExpress

☐ Shein

☐ OLX

☐ Online grocery stores (e.g., Frisco, Carrefour, Auchan)

☐ Electronics/appliance stores (e.g., Media Expert, Media Markt, Euro RTV AGD)

☐ Official brand websites (e.g., Apple, Nike, Ikea, Samsung)

☐ Travel agencies and booking platforms (e.g., Booking, eSky, TUI)

☐ Other

8. Have you been satisfied with your online shopping experiences so far?

☐ Definitely yes

☐ Yes

☐ Neither yes nor no

☐ No

☐ Definitely no

9. If not, please indicate the reason (s) of your dissatisfaction?

☐ Concerns about online payment security

☐ Insufficient product information on the website

☐ Long delivery time

☐ High delivery costs

☐ Inability to touch, see, or try the product

☐ Product quality issues (product does not meet expectations, differs from the description/photo)

☐ Problems with complaints/returns

☐ Hidden costs (e.g., additional fees not visible at first)

☐ Product inconsistency with the description (color, size, features)

☐ Customer service problems (difficult contact, no response)

☐ Other

10. Do you trust online shopping?

☐ Definitely yes

☐ Yes

☐ Neither yes nor no

☐ No

☐ Definitely no

11. If not, please explain the reason (s).....

12. Do you plan to shop online in the future?

☐ Definitely yes

☐ Yes

☐ Neither yes nor no

☐ No

☐ Definitely no

13. What factors mainly influence your future e-shopping?

.....

Statements

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
1	Perceived product awareness	Product descriptions on shopping websites are easy for me to understand					
		The information provided about products on shopping websites is sufficient for making a purchase decision					
		Information about after-sales services (e.g., warranties, guarantees) is clearly presented on shopping websites					
		Product information on shopping websites is consistent and matches reality after purchase					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
		Detailed product information on e-shop websites helps me make better purchasing decisions					
2	Perceived price advantage	Online shopping helps me save money					
		Thanks to promotional offers, online shopping allows me to reduce expenses					
		Online shopping enables me to easily compare prices					
		Price is the most important factor for me when making a purchase					
		Price transparency on shopping websites increases my trust in the e-seller					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
3	Perceived payment transaction safety	I feel safe when using online payment methods					
		I am willing to use online payment methods when shopping online					
		Information on online shopping websites is trustworthy, and transactions are secure					
		Security measures used by e-sellers increase my trust in online shopping					
		E-sellers take care of the payment transaction security of their customers					
4	Perceived social influence	I often pay attention to what others buy and recommend to make sure I choose the right product					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
		Before purchasing, I usually ask friends or family for their opinion about a product					
		I often consult others before deciding to buy a specific product					
		Ratings and reviews from other users online are important to me when making purchase decisions					
		When I have little experience with a product, I often look for information – on social media, in online reviews, or from friends					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
5	Perceived online trust	I trust online shopping websites in general					
		I believe that online shopping sites offer high-quality services					
		I trust that products purchased online will match their description and be free of defects					
		I believe that e-sellers are trustworthy					
		Online shopping does not raise any concerns for me regarding sellers' reliability or transaction security					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
6	Perceived web quality	Online shopping websites make it easy for me to find products based on different options and specifications					
		Navigating online shopping sites is simple and intuitive for me					
		I can easily find the information I need on online shopping websites					
		Shopping online is easy for me					
		Shopping websites are attractive and catch my attention					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
7	Past Onlin shopping experience	I have experience using online shopping websites					
		I am satisfied with my previous online shopping experiences					
		I feel comfortable shopping online because I do it often					
		I believe that online shopping skills come from prior experience					
		I know how to shop online because I have experience with it					

#	Dimensions/Constructs	Item	Strongly disagree 1	Disagree 2	No idea 3	Agree 4	Strongly agree 5
8	Online shopping	Online shopping is attractive and engaging to me					
		I prefer shopping online rather than in the traditional way					
		I believe that online shopping websites are safe and trustworthy					
		It is very likely that I will recommend online shopping to my friends					
		It is very likely that I will shop online again in the near future					

Appendix (B): Experts survey evaluation form

Dear Expert,

The survey below is about an upcoming PhD thesis research entitled “Factors Influencing Merchandise Online Shopping: The Mediating Role of Trust, which will be conducted at Nicolaus Copernicus University in Toruń, Poland. The topic intends to investigate about consumers’ behaviour against the online-shopping attitudes. Therefore, you are kindly asked to participate in filling-out the following forms by evaluating your comments, feedback in three categories namely 1) Relevancy 2) Clarity 3) Completeness of the items of constructs/dimensions. By relevancy, it means whether the items of each construct define the construct in a relevant/suitable manner with the definition of the dimension/construct. By clarity, it denotes how far the items are clear/obvious to express or define the dimension/construct; and lastly, by completeness, it is to measure whether the items are sufficient for each construct/dimension) or not. (Are there the right number of items for each construct/dimension, or something is missing, or there are too many/few, or you may add further suggested items). It is noteworthy to declare that the list of items and constructs have been derived from literature review. Your remarks are highly valuable to us as we are preparing a questionnaire before proceeding with the main survey. You are kindly supposed to evaluate and express your opinions based on your understanding of the definitions and examples of the following dimensions/constructs:

- **Perceived product awareness:** *refers to “the valence, intensity and the extent of the information that a product-image may have on the web”* It can be expected as a full description of product information such as qualified photo, brand description, product particulars, guarantee/warranty information, free returning policy etc.
- **Perceived price advantage:** *refers to “the degree to which a consumer believes that the price of the product is more reasonable and economically attractive than the other similar ones”*
- **Perceived payment transaction safety:** *refers to “potentially malicious activities related to online transactions such as unauthorized*

transactions, altering and breaching transaction information.” Examples include: fear of scamming, identity theft, fraudulency etc.

- **Perceived social influence:** *refers to “accepting information from others as evidence of reality”* Examples include: word-of-mouth- online customer review, family, social media opinions, TV, Radio, satellite and e-promotions etc.
- **Perceived web quality:** *refers to “user’s evaluation of a web site’s features meeting user’s needs and reflecting overall excellence of the web site”* For instance, graphical features, ease of use and functionality.
- **Past online shopping experience:** *refers to “past history of the online user for actual product or service purchase, using Internet medium from an e-retailer”*
- **Perceived online trust:** *refers to “the belief that the online seller can be trusted; it is a feeling of confidence and security towards the online transactions”*

Should you also have any questions or ambiguities while filling out the forms, please feel free to contact me.

Shahriar Jeddy

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Sample of Evaluation Form Headings

Please tick (✓) the appropriate box.

I) Relevancy

Items #	Dimension/ Construct	1 Not relevant	2 Somewhat relevant	3 Quite relevant	4 Highly relevant
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II) Clarity

Items #	Dimension/ Construct	1 Unclear	2 Somewhat unclear	3 Quite clear	4 Clear
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III) Completeness

Items #	Dimension/Construct	Remarks
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Please also answer the following questions:

1. Your professional experience (in years)
2. Your experience in the issue under study (in years)
3. Your experience in the current company/university (in years)

Appendix (C): Cronbach's alpha coefficients

Online Shopping

Reliability Statistics

Cronbach's Alpha	N of Items
.692	5

Online Shopping CA = 0.69 ~ 0.7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(Online shopping) Online shopping is attractive and engaging to me	15.28	5.108	.538	.616
I prefer shopping online rather than in the traditional way	15.87	4.128	.446	.660
I believe that online shopping websites are safe and trustworthy	15.86	4.872	.409	.660
It is very likely that I will recommend online shopping to my friends	15.33	5.028	.461	.638
It is very likely that I will shop online again in the near future	14.97	5.217	.452	.644

Past Online Shopping Experience

Reliability Statistics

Cronbach's Alpha	N of Items
.744	5

Past Online shopping experience CA = 0.74

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(Past e-shopping experience) I have experience using online shopping websites	16.11	5.400	.477	.712
I am satisfied with my previous online shopping experiences	16.42	5.551	.403	.735
I feel comfortable shopping online because I do it often	16.72	3.892	.621	.658
I believe that online shopping skills come from prior experience	16.39	5.322	.385	.744
I know how to shop online because I have experience with it	16.41	4.599	.709	.628

Perceived Web Quality

Reliability Statistics

Cronbach's Alpha	N of Items
.741	5

Perceived web quality CA = 0.74

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(P. web quality) Online shopping websites make it easy for me to find products based on different options and specifications	16.24	5.026	.463	.710
Navigating online shopping sites is simple and intuitive for me	16.19	4.538	.623	.652
I can easily find the information I need on online shopping websites	16.38	4.382	.539	.682
Shopping online is easy for me	16.04	4.843	.530	.687
Shopping websites are attractive and catch my attention	16.61	4.720	.395	.743

Perceived Online Trust

Reliability Statistics

Cronbach's Alpha	N of Items
.857	5

Perceived Online Trust CA= 0.85

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(Perceived online trust) I trust online shopping websites in general	13.32	8.911	.695	.822
I believe that online shopping sites offer high-quality services	13.26	9.850	.572	.852
I trust that products purchased online will match their description and be free of defects	13.59	8.388	.692	.823
I believe that e-sellers are trustworthy	13.63	8.649	.751	.808
Online shopping does not raise any concerns for me regarding sellers' reliability or transaction security	13.68	8.349	.668	.830

Perceived Payment Transaction Safety

Reliability Statistics

Cronbach's Alpha	N of Items
.822	5

Perceived Payment Transaction Safety CA: 0.82

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
(P. Payment Transaction Safety) I feel safe when using online payment methods	14.57	6.273	.705	.759
I am willing to use online payment methods when shopping online	14.17	7.086	.635	.781
Information on online shopping websites is trustworthy, and transactions are secure	14.64	6.837	.685	.766
Security measures used by e-sellers increase my trust in online shopping	14.35	7.984	.495	.819
E-sellers take care of the payment transaction security of their customers	14.56	7.785	.568	.801

Social Influence

Reliability Statistics

Cronbach's Alpha	N of Items
.806	5

Social Influence CA = 0.8

em-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(Social influence) I often pay attention to what others buy and recommend to make sure I choose the right product	14.79	10.386	.599	.767
Before purchasing, I usually ask friends or family for their opinion about a product	15.40	8.980	.622	.760
I often consult others before deciding to buy a specific product	15.30	8.618	.684	.738
Ratings and reviews from other users online are important to me when making purchase decisions	14.63	10.978	.522	.789
When I have little experience with a product, I often look for information – on social media, in online reviews, or from friends	14.61	10.649	.553	.780

Perceived Price Advantage

Reliability Statistics

Cronbach's Alpha	N of Items
.646	5

Perceived Price Advantage CA = 0.64 ~ 0.65

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(P. Price advantage) Online shopping helps me save money	15.67	5.198	.577	.488
Thanks to promotional offers, online shopping allows me to reduce expenses	15.59	5.894	.562	.504
Online shopping enables me to easily compare prices	14.88	7.942	.396	.606
Price is the most important factor for me when making a purchase	15.65	7.297	.251	.669
Price transparency on shopping websites increases my trust in the e-seller	15.24	8.157	.272	.644

Perceived Product Awareness

Reliability Statistics

Cronbach's Alpha	N of Items
.698	5

Perceived Product Awareness CA = 0.69 ~ 0.7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(P. Product awareness)				
Product descriptions on shopping websites are easy for me to understand	13.93	5.408	.528	.621
The information provided about products on shopping websites is sufficient for making a purchase decision	14.37	4.954	.508	.624
Information about after-sales services (e.g., warranties, guarantees) is clearly presented on shopping websites	14.57	5.270	.421	.665
Product information on shopping websites is consistent and matches reality after purchase	14.23	5.377	.503	.629
Detailed product information on e-shop websites helps me make better purchasing decisions	13.88	6.070	.323	.698

Appendix (D): Loadings & cross-loadings output

I) Combined loadings and cross-loadings (Primary output results)

	eshop	P-shop	webqual	e-trust	Payment	Social	Price	product	Type (a	SE	P value
Q14	0.745	-0.072	0.056	-0.12	0.121	-0.029	0.019	-0.021	Reflect	0.051	<0.001
Q15	0.663	0.012	0.052	-0.037	-0.078	-0.099	-0.002	0.029	Reflect	0.052	<0.001
Q16	0.626	-0.14	-0.127	0.479	0.026	-0.131	-0.017	0.097	Reflect	0.052	<0.001
Q17	0.694	0.048	0.01	0.028	-0.072	0.21	0.016	-0.087	Reflect	0.051	<0.001
Q18	0.671	0.149	-0.006	-0.307	-0.008	0.035	-0.02	-0.006	Reflect	0.052	<0.001
Q19	0.161	0.686	0.167	-0.146	0.102	0.121	-0.084	-0.137	Reflect	0.052	<0.001
Q20	-0.188	0.596	0.061	0.405	0.163	0.037	-0.1	-0.077	Reflect	0.052	<0.001
Q21	0.314	0.803	-0.017	-0.093	0.034	-0.089	-0.024	0.032	Reflect	0.051	<0.001
Q22	-0.342	0.576	-0.194	0.029	-0.214	-0.067	0.301	0.039	Reflect	0.052	<0.001
Q23	-0.062	0.855	-0.03	-0.097	-0.083	0.006	-0.043	0.108	Reflect	0.05	<0.001
Q24	-0.037	-0.246	0.654	-0.021	-0.064	0.018	0.09	0.03	Reflect	0.052	<0.001
Q25	-0.155	0.076	0.81	0.02	0.044	-0.034	-0.06	-0.037	Reflect	0.051	<0.001
Q26	-0.106	0.001	0.747	0.14	-0.155	-0.034	0.012	0.118	Reflect	0.051	<0.001
Q27	0.102	0.126	0.727	-0.23	0.194	-0.038	0.037	-0.084	Reflect	0.051	<0.001
Q28	0.267	0.011	0.581	0.104	-0.032	0.117	-0.08	-0.028	Reflect	0.052	<0.001
Q29	0.12	0.077	-0.052	0.815	0.087	-0.035	-0.055	0.004	Reflect	0.051	<0.001
Q30	-0.022	-0.005	0.093	0.712	-0.095	0.112	0.064	0.041	Reflect	0.051	<0.001
Q31	-0.117	0.031	0.055	0.817	-0.183	0.068	-0.076	-0.077	Reflect	0.05	<0.001
Q32	-0.029	-0.098	0.054	0.854	0.032	0.011	0.034	-0.067	Reflect	0.05	<0.001
Q33	0.049	-0.001	-0.145	0.796	0.149	-0.145	0.04	0.111	Reflect	0.051	<0.001
Q34	-0.007	-0.041	-0.079	0.125	0.834	-0.081	0.026	-0.035	Reflect	0.05	<0.001
Q35	0.044	0.159	0.006	-0.194	0.779	-0.037	-0.068	-0.102	Reflect	0.051	<0.001

Q36	0.07	-0.053	0.108	0.208	0.818	-0.009	0.013	0.01	Reflect	0.05	<0.001
Q37	-0.119	0.085	-0.053	-0.122	0.657	0.162	0.016	-0.03	Reflect	0.052	<0.001
Q38	-0.012	-0.141	0.012	-0.059	0.723	-0.003	0.014	0.167	Reflect	0.051	<0.001
Q39	0.064	0.086	0.028	-0.063	-0.028	0.76	-0.004	-0.012	Reflect	0.051	<0.001
Q40	-0.032	-0.179	-0.026	0.168	-0.229	0.762	0.094	0.118	Reflect	0.051	<0.001
Q41	0.005	-0.08	-0.084	0.176	-0.201	0.808	0.007	0.088	Reflect	0.051	<0.001
Q42	0.067	0.062	-0.002	-0.114	0.201	0.701	-0.084	-0.117	Reflect	0.051	<0.001
Q43	-0.103	0.127	0.093	-0.196	0.298	0.728	-0.022	-0.095	Reflect	0.051	<0.001
Q44	-0.223	-0.047	-0.043	0.188	0.015	-0.077	0.841	-0.092	Reflect	0.05	<0.001
Q45	-0.099	-0.045	-0.053	0.236	-0.088	0.062	0.797	-0.084	Reflect	0.051	<0.001
Q46	0.086	0.039	0.299	-0.375	0.217	-0.049	0.638	-0.096	Reflect	0.052	<0.001
Q47	0.243	0.111	-0.235	-0.073	-0.348	0.067	0.429	0.218	Reflect	0.054	<0.001
Q48	0.234	0.005	-0.026	-0.165	0.15	0.04	0.458	0.244	Reflect	0.053	<0.001
Q49	0.01	0.002	0.118	-0.219	-0.054	0.045	0.013	0.742	Reflect	0.051	<0.001
Q50	0.043	-0.159	0.014	0.117	-0.071	-0.108	-0.041	0.731	Reflect	0.051	<0.001
Q51	0.032	-0.063	-0.105	-0.123	0.185	-0.046	0.069	0.639	Reflect	0.052	<0.001
Q52	-0.105	0.001	0.049	0.472	-0.142	-0.014	0.004	0.722	Reflect	0.051	<0.001
Q53	0.032	0.293	-0.124	-0.352	0.145	0.162	-0.051	0.527	Reflect	0.053	<0.001

II) Combined loadings and cross-loadings (Primary output results)

	e_shop	p_shop	web_q	e_trust	Pay_s	social	price	product	Type (a	SE	P value
Q14	0.745	-0.069	0.058	-0.117	0.128	-0.028	0	-0.022	Reflect	0.051	<0.001
Q15	0.663	0.014	0.048	-0.035	-0.09	-0.099	0.011	0.031	Reflect	0.052	<0.001
Q16	0.626	-0.143	-0.124	0.479	0.028	-0.132	-0.011	0.094	Reflect	0.052	<0.001
Q17	0.694	0.048	0.017	0.03	-0.057	0.211	-0.008	-0.091	Reflect	0.051	<0.001
Q18	0.671	0.146	-0.014	-0.313	-0.021	0.034	0.008	0.001	Reflect	0.052	<0.001
Q19	0.14	0.686	0.179	-0.135	0.117	0.119	-0.106	-0.153	Reflect	0.052	<0.001
Q20	-0.188	0.596	0.063	0.401	0.162	0.034	-0.072	-0.083	Reflect	0.052	<0.001
Q21	0.317	0.803	-0.021	-0.092	0.026	-0.09	-0.015	0.033	Reflect	0.051	<0.001
Q22	-0.312	0.576	-0.211	0.018	-0.231	-0.059	0.291	0.069	Reflect	0.052	<0.001
Q23	-0.068	0.855	-0.026	-0.097	-0.076	0.005	-0.046	0.103	Reflect	0.05	<0.001
Q24	-0.014	-0.246	0.654	-0.036	-0.076	0.02	0.114	0.047	Reflect	0.052	<0.001
Q25	-0.164	0.072	0.81	0.023	0.051	-0.035	-0.06	-0.046	Reflect	0.051	<0.001
Q26	-0.096	-0.001	0.747	0.135	-0.164	-0.034	0.033	0.122	Reflect	0.051	<0.001
Q27	0.102	0.132	0.727	-0.227	0.19	-0.036	0.028	-0.081	Reflect	0.051	<0.001
Q28	0.24	0.013	0.581	0.119	-0.014	0.116	-0.12	-0.045	Reflect	0.052	<0.001
Q29	0.125	0.071	-0.054	0.815	0.079	-0.037	-0.03	0.004	Reflect	0.051	<0.001
Q30	-0.026	-0.001	0.095	0.712	-0.083	0.114	0.036	0.043	Reflect	0.051	<0.001
Q31	-0.131	0.03	0.063	0.817	-0.178	0.067	-0.085	-0.09	Reflect	0.05	<0.001
Q32	-0.018	-0.096	0.048	0.854	0.021	0.011	0.05	-0.06	Reflect	0.05	<0.001
Q33	0.05	0.001	-0.145	0.796	0.153	-0.144	0.032	0.114	Reflect	0.051	<0.001
Q34	0.011	-0.043	-0.088	0.118	0.834	-0.081	0.061	-0.026	Reflect	0.05	<0.001
Q35	0.045	0.158	0.004	-0.191	0.779	-0.039	-0.047	-0.106	Reflect	0.051	<0.001
Q36	0.075	-0.051	0.104	0.208	0.818	-0.009	0.02	0.012	Reflect	0.05	<0.001

Q37	-0.122	0.083	-0.05	-0.127	0.657	0.163	0.002	-0.029	Reflect	0.052	<0.001
Q38	-0.035	-0.138	0.026	-0.05	0.723	-0.002	-0.043	0.156	Reflect	0.051	<0.001
Q39	0.079	0.086	0.018	-0.068	-0.049	0.76	0.03	-0.004	Reflect	0.051	<0.001
Q40	-0.029	-0.179	-0.024	0.159	-0.216	0.762	0.077	0.125	Reflect	0.051	<0.001
Q41	-0.006	-0.078	-0.077	0.182	-0.189	0.808	-0.016	0.081	Reflect	0.051	<0.001
Q42	0.059	0.06	0	-0.106	0.198	0.701	-0.078	-0.127	Reflect	0.051	<0.001
Q43	-0.103	0.126	0.092	-0.196	0.296	0.728	-0.019	-0.095	Reflect	0.051	<0.001
Q44	-0.112	-0.019	-0.092	0.123	-0.023	-0.055	0.904	0.01	Reflect	0.05	<0.001
Q45	0.01	-0.027	-0.097	0.166	-0.118	0.082	0.857	0.013	Reflect	0.05	<0.001
Q46	0.149	0.065	0.268	-0.409	0.197	-0.033	0.622	-0.031	Reflect	0.052	<0.001
Q49	-0.002	0.002	0.126	-0.216	-0.036	0.045	-0.016	0.742	Reflect	0.051	<0.001
Q50	0.046	-0.163	0.013	0.116	-0.077	-0.11	-0.022	0.731	Reflect	0.051	<0.001
Q51	0.054	-0.068	-0.113	-0.139	0.176	-0.045	0.1	0.639	Reflect	0.052	<0.001
Q52	-0.111	0.006	0.05	0.48	-0.145	-0.013	-0.007	0.722	Reflect	0.051	<0.001
Q53	0.025	0.297	-0.125	-0.345	0.142	0.161	-0.058	0.527	Reflect	0.053	<0.001