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Rethinking Entrepreneurship for Sustainability: An Application of the Spirit, Body and Soul (SBS) Model to Developing Economies

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Abstract

Entrepreneurship has truly driven the developed economies to growth and development, and the case of developing economies cannot be different. Despite the huge population and natural resource dominance of these economies, development in terms of infrastructure and growth has been distorted. This paper takes a critical look at the understanding of the concept of entrepreneurship with the aim of ensuring sustainable entrepreneurship in the developing economies. To achieve this, the paper examines the SBS model of entrepreneurship relating its applicability to the developing economies for there to be any form of sustainable development. Following the lead of scholars such as Baumol (1968); Dees (2001); Coyne & Leeson (2004); Austin et.al. (2006); Baumol & Strom (2007) Desai & Acs (2007); Schumpeter (2008); Boettke & Coyne (2009); Kirzner (2009); Simons et. al. (2011); Desai (2013); Lucas & Fuller (2015); Hippel (2017), the paper adopted the approach of giving 'life' to entrepreneurship through the application of the spirit, body and soul (SBS) model, where entrepreneurship or being enterprising is likened to the human 'body', entrepreneurial to the 'spirit', and entrepreneurialism to the 'soul' with the submission that sustainable entrepreneurship must connect the trio in the entrepreneur who is the 'person' that creates the product and the enterprise, as the 'business' that work in partnership to create sustainable development.

Keywords: entrepreneurship, sustainability, development, developing economies, SBS model

1. Introduction

We have seen variants of entrepreneurship theories and practice, and have come across studies of entrepreneurship development, entrepreneurial activities and entrepreneurialism that have shaped and formed the stages of development of different societies. Over the years, countries have moved from one stage of development to another, following the promotion of entrepreneurship by the state, through policies and programmes that have been purposeful towards affecting the

society positively resulting in consistent growth and development.

The various development institutions have also come up with various criteria to categorize and classify economies, using parameters that range from economic to social and human. Based on these parameters, nations have been broadly categorized into developed or developing. The yardstick for determining which category a nation belongs to, are the human development indices that measure the economic, social and cultural capacities of these nations, and how well these affect the inhabitants of these nations and their well-being.

It is therefore not enough for a nation to be rich or endowed with generous natural resources, but the applicability of these resources to provide general access to the basic necessities of life, such as food, water, healthcare, education, housing, security and other basic infrastructure, go a long way in determining the standard of living of the people and the level of the nation's growth and development. The availability of resources has been proven not to be enough, as the accessibility and utility of such resources contributes more towards better life for the people.

The spirit, body and soul (SBS) model, although not universally applied in literature, however, comes as a promising framework to address entrepreneurship sustainability challenges in developing economies. What this means, in this context, is that entrepreneurship should not be seen solely from the profitability point of view, as the entrepreneurs are encouraged by this framework to navigate the complex socio-economic, environmental and cultural characteristics of the predominant informal markets, community and cultural values, resource scarcity, and often unstable political and regulatory conditions of the developing economies for sustainable development. It is expected that with the integration of the three dimensions of the SBS model (spirit, body and soul), the entrepreneurs, in developing economies, will be better equipped to foster sustainable enterprises that will contribute to long-term, sustainable and inclusive development.

Based on the above, this paper attempts to take another look at the concept of entrepreneurship and how its applicability has translated to development in the developed economies, with the hope that the concern about the peculiarities of the developing economies will make for a reconceptualization and rethinking of entrepreneurship for sustainable development, desired by these developing countries. What is certain is that, whether at the developed or the developing economies, entrepreneurship is practiced and profusely pursued. However, the nature of entrepreneurship in these economies appeared to be different due to distinct peculiarities.

What makes for these observed differences, and how can we address them, is one primary purpose of this paper. Following this introduction, this paper vigorously reviews literature to dissect the concept of entrepreneurship, by looking at the various theories of entrepreneurship. This is followed by conceptualizing the spirit, body and soul (SBS) model of entrepreneurship, in an effort to come up with what we consider as sustainable entrepreneurship framework. This framework is then applied to the developing economies as a model considered suitable for the desired development, with reasons adduced to justify the suitability of the model for sustainable development.

2. Literature Review

This section looks at some basic theories of entrepreneurship as a way of reviewing and enhancing our understanding of the concept. This is because, for us to arrive at a sustainable entrepreneurship for sustainable development, every perspective to entrepreneurship must be given due consideration. Hopefully, this effort will give a holistic view to our concept of sustainable entrepreneurship, and perhaps give it wider acceptability for successful application in the developing economies.

Entrepreneurship has long been recognized as a critical engine for economic growth, job creation and innovation, especially in developed economies. However, the increasing challenges posed by climate change, resource depletion, and social inequality have led to growing interest in how entrepreneurship can align with sustainability goals and sustainable development in developing economies. Traditional models of entrepreneurship tend to focus primarily on profit maximization and economic growth. Yet, emerging frameworks emphasize a more holistic, integrated approach, which considers not just economic, but also

social, cultural and environmental dimensions for sustainable entrepreneurship.

This review explores the "Spirit, Body, and Soul" (SBS) model as an alternative framework for rethinking entrepreneurship within the context of sustainable development in developing economies. This review will start with economic theory and end with the group theory of entrepreneurship.

2.1 Economic Theory of Entrepreneurship

Without any iota of doubt, most scholars agree that entrepreneurship is a product of the economy (Schumpeter, 1934; Casson, 1982; Coyne & Leeson 2004). For this reason, an entrepreneur is seen as a risk-taker because it is impossible for he/she to predict into the future of the economy for reasons of uncertainty. According to Austin, Stevenson & Wei-Skillern (2006) economic theory becomes the basis of entrepreneurship, and the foundation of the economic theory of entrepreneurship. What economic theory asserts is that the economy and entrepreneurship cannot be separated as they are seen as birds of the same feather that flocks together. When the economic conditions are good, the economy grows and entrepreneurship thrives. However, when the conditions of the economy are not good, entrepreneurship suffers (Baumol & Strom 2007). The drivers of economic theory of entrepreneurship are the presence of economic enablers and incentives, such as; trade policy, industrial policy, taxation policy, monetary policy, sources of raw materials, availability of infrastructure, investment opportunities, marketing opportunities, availability of information regarding the conditions of the market and technology, among others. These are the determinants of the business environment and panacea for sustainable entrepreneurship, according to the economic theory of entrepreneurship.

2.2 Sociological Theory of Entrepreneurship

The nature of society and social arrangements are another set of factors that affect the business environment, aside from the economic factors, and they invariably affect the pace of entrepreneurship. The sociologists have argued that social forces affect entrepreneurship, and this has led to the sociological theory of entrepreneurship (Boettke & Coyne 2009). The theory argues that entrepreneurs are more likely to achieve growth in particular social settings than in others (Dees, 2001; Nhamo, G., et al. 2019). Among the social aspects that affect an entrepreneur include social values, customs, taboos, religious beliefs and other socio-cultural activities. Entrepreneurs are expected to conform to certain social expectations when carrying out their business. Certain social factors also gravitate entrepreneurship towards certain places and people (York & Venkataraman 2010). This theory states that entrepreneurship thrives in thickly populated cities and towns due to population which is one sociological factor (Santos, 2012; Schumpeter, 1942, 2008; Seelos & Mair, 2005; Sriram, et al. 2020). The theory is also supported by evidences of people from certain part of the country being seen as more entrepreneurial than the others. The Igbos of Nigeria are a case in point here.

2.3 Innovation Theory of Entrepreneurship

This theory is founded on the ability of the entrepreneur to create and transform problems into opportunities for innovation. It is propounded by no less a person than Joseph Schumpeter who sees entrepreneurship as innovation based (Schumpeter, 1934). As one of the top theories of entrepreneurship, innovation theory believes that the entrepreneur does not merely conduct business to better their lives alone, but through their entrepreneurial activities, they positively disrupt and cause development in the economy and the society at large (Drucker, 1985). The entrepreneur, through the exercise of his/her creative skills, comes up with new products to solve societal problems. The innovation theory of entrepreneurship recognizes that the entrepreneur improves the production process, opens new markets, identify growth opportunities, discover new sources of raw materials in addition to introducing new products and setting up businesses. All of these add up not only to solve the demand problems, but to also solve the unemployment problems and bring about economic growth and development (Sriram, et al. 2020).

2.4 Psychological Theory of Entrepreneurship

The psychological theory of entrepreneurship is based on the various characteristics of entrepreneurship which requires some sterling qualities from the entrepreneur (Boettke & Coyne 2009). This theory identifies the psychological characteristics of entrepreneurship among which are foresightedness, steadfastness, doggedness, perseverance, delayed gratification, among

others (Kirzner, 2009). Some of these psychological traits are acquired through upbringing, training and experience. It is the presence or absence of these traits that determines the ability of an entrepreneur to succeed or fail, as propounded by this theory. This is one of the fundamental reasons for the submission that entrepreneurship can be learnt and taught (Drucker, 1985).

2.5 Achievement/Motivation Theory of Entrepreneurship

The desire to succeed or achieve has been put across as a theory of entrepreneurship. It has been established that not everybody can become an entrepreneur, and the basis for this is that the desire and motivation of individuals differ from one person to another. What people aim to achieve or set as targets differs, and what motivates people equally differs. While some people are motivated to solve problems, some are motivated to aspire for money and power. Quite a lot are satisfied with just a little token of getting a job and collecting salaries regularly. The submission of this theory is that entrepreneurial personality is established based on the achievement and motivation theory. The passion for something is a driving factor to get or acquire that thing. This is not different when it comes to entrepreneurship. People are driven by various motives. The hunger for success and determination to break the poverty cycle have been major factors in the making of some notable entrepreneurs in our society which is a confirmation of the relevance of this theory (Boettke & Coyne 2009).

2.6 Resource-Based Theory of Entrepreneurship

One of the major requirements for entrepreneurship is the ability to mobilize or gather the required resources for the enterprise. Since whatever service or product of the enterprise cannot be put together without the required resources, the resource-based theory of entrepreneurship becomes as important as any other factor. Whatever efforts of the entrepreneur without being able to put together the resources required by the enterprise will amount to nothing. This theory of entrepreneurship is thus very significant. What this theory is based on is that the availability or accessibility to the required resources is a major factor that promotes entrepreneurship. The entrepreneurs are therefore not only required to work hard, but also to work smart in the process of gathering the resources (Simmons, Yonk & Thomas 2011).

2.7 Opportunity Based Theory of Entrepreneurship

Entrepreneurs are regarded as problem solvers. While every other person sees problems in society, the entrepreneurs see opportunities in the problems. The entrepreneur, therefore, must have the ability to transform problems into opportunities. While there are outright opportunities brought about by changes in society, there are also other opportunities that are hidden in problems. This theory, therefore, suggests that entrepreneurs are always on the lookout for opportunities that will enable them to grow their businesses. Where others see problems, entrepreneurs see opportunities and transforms these opportunities into innovative products and enterprises, thereby providing solutions to the problems and making money in the process (Cohen & Winn 2007).

2.8 Status/Role Model Theory of Entrepreneurship

This theory is based on the fact that certain people desire to become a force to reckon with in society. This drive for status and recognition has been the driver of some entrepreneurs in our society. Some members of society, who are in the minority or lower class of society, may also be driven by the status theory into entrepreneurship. This theory also draws from the point of view of people been driven by successful individuals in society, who are seen as role models whether so proclaimed or not. Their lives and accomplishments become the driving force that motivates some people into entrepreneurship. It is also on record that people who have, in the past, created products in the form of solution to societal problems, have influenced the decisions of others in search for landmark problem-solving products as entrepreneurs.

2.9 Anthropological Theory of Entrepreneurship

The anthropological theory of entrepreneurship states that cultural practices lead to entrepreneurial attitudes, such as problem solving and innovation that lead to enterprise creation. The study of anthropology is about people, social groups, their narratives and practices as products and producers of culture. Therefore, from the anthropological theory perspective, for someone to successfully create an enterprise, the social and cultural contexts matter and should be examined. The foundation of this theory is the cultural entrepreneurship

model which states that a new venture is created by the influence of culture.

2.10 Cultural Theory of Entrepreneurship

Attitudes, expectations and perceptions are critical factors that have been considered as key in determining entrepreneurial behavior. These are culturally determined forces, hence the cultural theory of entrepreneurship. Thomas Cochran had argued that entrepreneurs are influenced by their own attitudes toward their occupation, the expectations of groups facilitating new ventures, and the difficulty level of the operational requirements of their career. Thus, cultural values influence entrepreneurial behaviours in a society, affecting the propensity to take risks or pursue innovations that deviate from norms. People that are risk averse will run away from entrepreneurship. Also, a society where people place high value on being independent will see more people gravitating towards entrepreneurship, whereas a society with people that are conforming will have less people pursuing entrepreneurship.

2.11 Behavioural Theory of Entrepreneurship

The behavioural theory of entrepreneurship assumes that the entrepreneurial development of any society depends upon its past and existing social-economic aspirations. This theory sees the entrepreneur as the main element in the entrepreneurship equation. Kunkel presented a behavioural model of entrepreneurship that depends upon the particular combination of circumstances, listing the essential factors for entrepreneurial development as labour composition, opportunity competition, demand structure, and limitations. The behavioural theory becomes fundamental as the collective behavior of people as entrepreneurs/managers, workers/employees, customers/consumers, and government/regulators determine the sustainability of the entrepreneurship process.

2.12 Group Theory of Entrepreneurship

The group theory of entrepreneurship is based on the assumption that expansion of entrepreneurial activities is possible only by entrepreneurial groups. Frank W. Young, that propounded this theory emphasizes that entrepreneurial initiatives are conditioned by group-level patterns. He deduced the group level pattern behaviour exhibited by the entrepreneurs on the basis of his test known as Thematic Appreciation Test (TAT) on groups of entrepreneurs. Young disapproves of the notion of an entrepreneur working individually, promoting the group theory based on his position that entrepreneurial initiatives are the outcome of the experiences and exposures of an individual entrepreneur as a member of a particular group. Sustainable entrepreneurship is, therefore, significantly factored on this group theory.

3. The Theoretical Framework of the SBS Model

Following the above review of literature, it is apt to present the theoretical framework for the spirit, body and soul (SBS) model of entrepreneurship which this paper attempts to apply to the developing economies for sustainable development. In an earlier paper, Awodun (2022) has proposed this model of entrepreneurship, relating the "spirit of entrepreneurship" to the entrepreneurial spirit that motivates an individual to see solutions in problems and set out to ideate and innovate in the process. It is an attribute that is sometimes associated with knowledge, skill or understanding such as when a person knows his or her industry so well such that the knowledge could be exploited to create new opportunities. It is often associated with the spirit, mindset, habit or culture in our SBS model. Hence, you hear things such as entrepreneurial spirit, entrepreneurial mindset, entrepreneurial habit or entrepreneurial culture. It is expressed through the behavior of the person which can only be seen in the action taken by the person, but what is responsible for the action, however, remains unseen, and that is the first 'S' in the model which represents the 'spirit' of entrepreneurship. It occupies the innermost part of the model because it is unseen (see figure 1).

The next concept that was clarified in the development of the SBS model is entrepreneurialism. This concept is commonly referred to as "the state of acting in an entrepreneurial manner". It is simply the action, that gives soul to the spirit in the model. The ability backing the willingness provided by being entrepreneurial, is entrepreneurialism (which represents the soul of entrepreneurship). So, if the 'spirit' is entrepreneurial, then, entrepreneurialism is the 'soul' of entrepreneurship, and this represents the second letter 'S' in the SBS model. With entrepreneurialism, entrepreneurship is not just about creating a venture or making money. Rather, it is seen as a way of life that transcends

beyond the creation of business, as it pertains to all economic spheres of life. Entrepreneurialism is that ability to change the status quo through creative and innovative attributes clearly put into action, and does not have to be necessarily for the purpose of making profit, but mostly to add value and make things or situations better. Entrepreneurialism, from the above description is, therefore, regarded as the 'soul' (the second inner layer as shown in Figure 1) while being entrepreneurial is the 'spirit' (the first inner layer) in our SBS model.

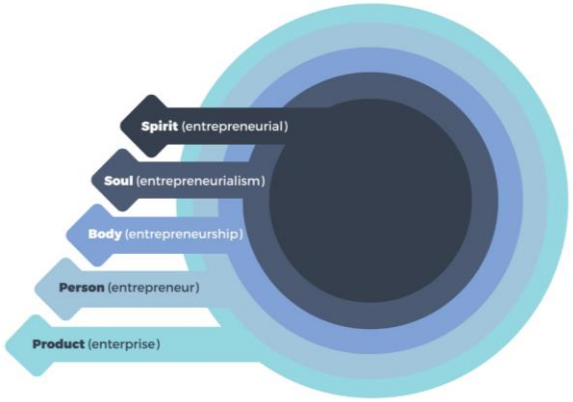

Figure 1. The SBS Model of Enterprise Creation

Just like it is very difficult to separate the spirit from the soul of a living being, so is it difficult to separate being entrepreneurial (spirit) from entrepreneurialism (soul) when describing being enterprising (which is the body of entrepreneurship). Having the mind to do good without actually doing it amounts to nothing. In the same manner that willingness without ability, in economics, does not lead to demand. It is only the entrepreneurial (spirit) backed up by the action of entrepreneurialism (soul) that reflects in being enterprising (body), the combination of which we all refer to and sees as entrepreneurship. The enterprising body is the third layer in the SBS model shown in Figure 1. In Awodun (2022), the willingness to take risk, through resource gathering, to invest in the venture in expectation of a return for the risk to dare, which is referred to as being enterprising, is the body of entrepreneurship.

The person that is involved in all of these activities of entrepreneurship is referred to as the entrepreneur in whom you find an entrepreneurial (spirit), in an enterprising (body) with entrepreneurialism (soul). The entrepreneur (in whom the spirit, body and soul exists) creates not only the products that solves the problems of the society, but creates enterprises to produce the products, and engages the people (employees) from the society through employment creation, generates income from the sales of the products, distributes the income to the employees (through payments of wages/salaries), suppliers (through payments for supplies), government (through payments of taxes) and keeps the surplus (in form of profits) as the reward for entrepreneurship. This concentric circle ends up as a circular flow of income which is predominantly sustained by continuous entrepreneurship. This is what we refer to as sustainable entrepreneurship.

4. Applying SBS Model to Sustainable Entrepreneurship in Developing Economies

4.1 Sustainable Entrepreneurship

Sustainable entrepreneurship refers to business activities that aim to create economic value while simultaneously promoting social equity and environmental responsibility. According to Schaltegger, Hansen, and Lüdeke-Freund (2016), sustainable entrepreneurship transcends traditional profit-driven motives by incorporating environmental and societal values into the business model. Sustainable entrepreneurs are often characterized by their capacity to innovate in ways that contribute to environmental sustainability, such as adopting circular economy principles or creating solutions for social well-being (Cohen & Winn, 2007). The contributions of sustainable entrepreneurship are all encompassing, as these go beyond profit-making. The varieties of economic contributions notwithstanding, variants of socio-cultural and environmental values are drawn from it.

Based on the above, in the context of developing economies, the role of sustainable entrepreneurship becomes even more significant because these economies face pressing challenges of poverty, unemployment, inadequate healthcare, and environmental degradation. For these reasons, scholars argue that sustainable entrepreneurship can provide a pathway for simultaneously addressing the socio-economic challenges, while at the same time, promoting long-term environmental sustainability (York & Venkataraman, 2010) and sustainable growth and development.

4.2 The Spirit, Body and Soul (SBS) Model for Sustainable Entrepreneurship

The Spirit, Body, and Soul (SBS) model represents a multidimensional approach to entrepreneurship, grounded in the belief that human enterprises should attend to the economic, social, and spiritual needs of both individuals and communities (Miller & Acres, 2019). The SBS framework proposes that entrepreneurship can be understood in three interrelated components: the *Spirit*, the *Body*, and the *Soul*.

1) **The Spirit**: This dimension represents the internal motivations, values, and vision that drive an entrepreneur. It emphasizes the need for a sense of purpose beyond mere profit, incorporating elements such as ethical decision-making, community involvement, and a commitment to social change (Dees, 2001). In developing economies, this often means entrepreneurs must balance local cultural values with global sustainability goals.
2) **The Body**: The *Body* aspect focuses on the tangible, practical elements of entrepreneurship, including the operational and logistical concerns of running a business. In a sustainable context, it highlights the importance of environmental stewardship, resource efficiency, and sustainable supply chains. For developing economies, this might involve innovative approaches to local resource use, energy efficiency, and waste management (O'Neill, 2018).
3) **The Soul**: The *Soul* dimension addresses the emotional and psychological well-being of the entrepreneur and their community. It emphasizes community-building, trust, and the holistic impact of the entrepreneur's efforts on society. For sustainable entrepreneurship, this includes fostering a sense of social responsibility, creating positive social change, and developing a business that nurtures collective well-being (Santos, 2012).

4.3 Applying the SBS Model to Developing Economies

1) **The Spirit in Developing Economies**: In many developing economies, entrepreneurship is deeply rooted in local traditions, communal values, and religious or spiritual beliefs. For instance, an emphasis on collective well-being over individual profit aligns with the *Spirit* dimension of the SBS model. Studies suggest that businesses that are driven by a sense of purpose and community, rather than just financial gains, have a greater chance of sustainability in these settings (Santos, 2012). In Africa, for example, social entrepreneurship has become an effective strategy for tackling poverty and providing public goods (Nhamo et al., 2019).
2) **The Body and Operationalizing Sustainability**: The *Body* dimension is particularly relevant in the context of developing economies where environmental degradation and resource inefficiency are prevalent. Entrepreneurs are increasingly adopting sustainable production techniques and eco-friendly technologies to address these challenges. For example, social enterprises that focus on sustainable agriculture, renewable energy, and waste management are becoming more common in countries like India and Kenya (Sriram et al., 2020). Such initiatives not only contribute to environmental sustainability but also create jobs and enhance economic resilience.
3) **The Soul and Social Impact**: The *Soul* aspect is central to the development of a more inclusive economy, which is vital for social stability in developing nations. Entrepreneurship that nurtures social capital, builds trust, and empowers marginalized communities has a profound impact on societal well-being. Entrepreneurs in many developing economies are adopting business models that provide affordable healthcare, clean water, and education, which align with the *Soul* principle of holistic impact (Seelos & Mair, 2005). The creation of businesses that prioritize human dignity and societal welfare can help build more resilient communities.

5. Challenges of the SBS Model

Despite the promising potential of the SBS model, several challenges remain in applying it effectively in developing economies. One critique is that the model's spiritual and emotional dimensions may be difficult to operationalize in empirical research or in the context of formal business practices (Miller & Acres, 2019).

Furthermore, while the SBS model advocates for

a balanced approach to sustainability, there may be tensions between economic, social, and environmental goals, particularly when immediate economic pressures outweigh longer-term sustainability objectives (Gibson, 2006).

Another significant challenge is the lack of access to capital, technical expertise, and infrastructure in developing economies, which can hinder entrepreneurs from implementing sustainable practices effectively. Moreover, political instability, corruption, and weak regulatory frameworks can create obstacles to the successful implementation of SBS-inspired entrepreneurship (O'Neill, 2018; Awodun, 2022).

6. Conclusion and Recommendations

The SBS model offers a comprehensive, integrative approach to entrepreneurship that could have profound implications for sustainability in developing economies. By recognizing the interconnectedness of economic, social, and spiritual dimensions of entrepreneurial activity, this model encourages a more balanced and holistic view of entrepreneurship. Although there are challenges in its application, particularly in the face of practical barriers such as access to capital and regulatory constraints, the SBS model represents a promising framework for fostering sustainable entrepreneurship in developing economies.

Future research could explore the practical applications of the SBS model in specific contexts and sectors, particularly in terms of how entrepreneurs in developing economies navigate the complex interplay of economic, social, and environmental factors. Additionally, understanding how local cultural and spiritual values intersect with sustainable entrepreneurial practices would offer valuable insights into the broader applicability of the SBS framework in various global contexts.

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The Greatest Opportunities to Realize a New Understanding of Perfect Competition by Example of Hong Kong

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From economics textbook and many scientific works (Akerlof G., n.d.; Arrow K. J., 1959; Arrow K. J. & Debreu G., 1954; Aumann R. J., 1964; Backhouse R. & Boianovsky M., 2012; Begg D., Fischer S., Dornbusch R., 2002; Bork R. H., 1993; Bowles S. & Edwards R. (Ed), 1990; Bromberg M., 2023; Dalkey N. & Helmer O., 1963; Dixon H., 1990; Drucker P. F., 1973; Frank R., 2007; Gerard D., 1972; Gilmour P. M., 2022; Gitman L. & Zutter C., 2019; Gordon J., 2022; Groenewegen P., 2011; Gretsky N. E., Ostroy J. M. & Zame W. R., 1999; Higham C., Setzer J., Narulla H. & Bradeen E., 2023; Howe N. & Strauss W., 1991; Kim JY, Rhatigan J, Jain SH, Weintraub R & Porter ME., 2010; Kirzner I., 1981; Krep D. M., 1990; Lee F.S., 1998; Lipsey R. G. & Lancaster K., 1956; Marynchak Y., 2019; McNulty P. J., 1967; Novshek W. & Sonnenschein H., 1987; Petri F., 2004; Porter M., 2008; Porter M., 2019; Porter M. & Heppelmann, J.E., 2017; Roberts, J., 1987; Roger L. M., 1982; Sickles R. & Zelenyu V., 2019; Stigler J. G., 1987; Stiglitz J. E. & Atkinson A. B., 1980), the whole world knows the example of Hong Kong as a model of the most freely developed city-regional economy and maximally free (perfect by me) competition. As a researcher, I have devoted my life to the study of perfect competition and with using the laws of physics for economics has significantly changed the classic economics' vision of perfect competition from the erroneous vision by numerous competitors to atomic equilibrium for market core in my understanding. I was happy that global Wikipedia saw my discovery.

I am confident that if the different country-economic models follow the example of the most liberal taxes and non-interference in the economy, the new understanding of perfect competition will be implemented in practice as quickly as possible. I see as well the best results of American and Eurasian scientists in the study of perfect competition will make the world the most peaceful and rich as quickly as possible.

At determining the maximal and optimal efficiency of political-economic competition (Lordkipanidze R., 2022; Lordkipanidze R., 2023; Lordkipanidze R., 2024), I used the approximate analogy of Atomic model and Ohm's law of electric current I=V/R, where under "I" meant by me the force of competition, "V" – the market capacity and "R" – the resistance of the largest

supplier. For calculation of competition efficiency not only by proportion of market core, I used my formula: Competition Level=Market efficiency/Weighted average share of companies in the market by $\sum (S_i V_i)/V$, where S_i – market share of i company in %, V_i – i company volume in $, V – total market volume in $. My formula complements the famous Herfindahl-Hirschman Index with the necessary connection of market efficiency.

For peaceful economic relations, by examples of Hong Kong, free port zones with maximally free perfect competition are effectively supported in modern America, in Europe — warehouses at airports, in all China — regional spaces with minimal tax on profit by mentioned examples. I am developing a theory according to which micro-regional priorities are more stringent and necessary criteria for assessing a perfect — mature equilibrium economic structure than micro-sectoral ones. My arguments are based on my assumption that if we properly — naturally arrange territorial clusters with the active participation of local authorities, banks and universities, we will get an effective sectoral structure of the economy too. In the opposite approach, we do not always get the desired effect. "Warm" — greenhouse conditions of traditionally successful pin-point zones in the economy are able to overcome the crisis "cooling" in backward regions and industries.

For general equilibrium competition, we consider it appropriate to especially emphasize the importance of protecting competition through universal — international efforts. Even the economically strongest countries are not able to withstand the pressure from hidden monopolies, which often have universal roots. We began publishing a series of theses on researchgate.net to support INTERPOL and the creation under its wing of an international antitrust agency with the participation of at least 5 major scientists from each country who will specialize in protecting perfect competition and local-regional and global markets. In addition, international monitoring services must have sufficient financial and military resources to quickly resolve local conflicts. I am confident that such common mutually beneficial interests of all countries will stop as well increasingly frequent conflicts.

I also suggest that the international scientific community concentrate on competitive zonal-sectorial management approaches rather than on utopian goals. Having goals and striving to achieve them is not a bad thing, but unreasonable goals are often not fulfilled and can cause complications of a depressive nature and long-term economic cold. It is better to know your own advantages well than to try to remake yourself in order to comfortably achieve an unrealistic goal. As easy examples to understand, I would like to note that if a talented promising basketball player suddenly wants to become a football player or boxer due to high income, if he does not have the corresponding talents, he will lose entire future, including basketball prospects. We need the most beautiful long-range basketball hits and jumps in the innovation economy to quickly solve the demographic problems of some economically "cooled" regions after political-military conflicts. The use of physics in economics has shown me that focusing on multiple competitors can lead to blocking the local (regional) bona fide large sector, which can lead to call by me "ant economy" with a short circuit and overheating of the economy.

Logical reasoning led me to the natural necessity of both small and larger regions and enterprises, which is also confirmed by the statistics of their actual equivalence in the productivity of productions and services. The same can be said about the importance of large countries with known economies of scale, and small countries are particularly distinguished by their high efficiency and ability to quickly change economic policy priorities in the crises of natural cycles of economic downturns.

The macroeconomics of each country is subject to some regulation, but the world economy is as free as possible and in such free conditions, two poles always appear in the core of competition. In the history of mankind, we remember the varieties of competition between Western and Eastern countries with a variable advantage. In recent history, we remember the competition between the USA and the USSR, and now we are witnessing the really maximally healthy competition between the USA and China with Hong Kong. Free competition leads to the progress of mankind, but this competition must not develop into a war that leads to serious casualties and the poor.

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Research on Automation and Efficiency Optimization in Intelligent Logistics Centers — Taking JD Logistics' "Asia No.1" as an Example

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Abstract

This study investigates how automation technology in intelligent logistics centers can significantly enhance logistics efficiency, taking JD Logistics' "Asia No.1" smart logistics center as a case example. By analyzing the implementation methods of highly automated operations and their impact on operational efficiency, the research finds that large-scale application of artificial intelligence, big data, cloud computing, and robotics can build a comprehensive intelligent logistics system. This system achieves full-process intelligence and unmanned operations in logistics, greatly improving operational efficiency. In addition, the study explores the application effects of automation technology in different logistics links and provides insights for the design and management of future logistics centers.

Keywords: intelligent logistics, automation technology, efficiency optimization, JD Logistics, "Asia No.1", artificial intelligence, big data, Internet of Things, robotics, logistics center design, automated warehousing, path planning, inventory management, unmanned operations, logistics innovation, operation management

1. Introduction

1.1 Research Background

With the acceleration of global economic integration and the rapid development of e-commerce, the logistics industry, as a key link connecting production and consumption, is facing unprecedented opportunities and challenges. In recent years, the logistics industry has gradually shifted from a labor-intensive model to a technology-intensive model, and intelligent logistics has emerged accordingly. Intelligent logistics integrates cutting-edge technologies such as artificial intelligence, big data, and the Internet of Things to achieve full-process automation, intelligence, and unmanned operations in logistics, greatly improving logistics efficiency and service quality.

1.2 Development Trends of the Logistics Industry and the Rise of Intelligent Logistics

The traditional operation mode of the logistics industry faces many bottlenecks, such as high labor costs, low efficiency, and unstable service quality. With the continuous progress of technology, intelligent logistics has become the key to solving these problems. Intelligent

logistics can not only achieve rapid sorting and precise delivery of goods but also optimize the layout of logistics networks through data analysis, reducing operating costs. JD Logistics, as a leading domestic logistics enterprise, has been committed to promoting the intelligent transformation of the logistics industry through technological innovation.

1.3 Background of JD Logistics' "Asia No.1" as an Industry Benchmark

JD Logistics' "Asia No.1" smart logistics center is an important achievement of JD Logistics in the field of intelligent logistics. Since the first "Asia No.1" was put into use in 2014, this series of logistics centers has been laid out in many places across the country and has become a benchmark for intelligent logistics in the industry. By widely applying automated equipment and intelligent management systems, "Asia No.1" has achieved automation and intelligence in warehousing, sorting, and delivery, significantly improving operational efficiency and service quality. (Ibiyemi, M. O., & Olanrewaju, D. O., 2024)

1.4 Research Significance

This study aims to explore how automation technology in JD Logistics' "Asia No.1" smart logistics center can significantly enhance logistics efficiency by conducting an in-depth analysis of the center. The research not only supplements and improves the theoretical system of automation technology application in the logistics industry but also provides practical guidance for the design and management of corporate logistics centers. By summarizing the successful experience of "Asia No.1," other logistics enterprises or related industries can draw lessons and promote the widespread application of intelligent logistics.

1.5 Research Objectives and Questions

The main objectives of this study include:

- Exploring how "Asia No.1" enhances logistics efficiency through automation technology;
- Analyzing the application effects of automation technology in different logistics links (such as warehousing, sorting, and delivery);
- Providing insights for the design and management of future logistics centers.

2. Literature Review

Intelligent logistics integrates artificial intelligence, big data, the Internet of Things, and other technologies to achieve full-process automation and intelligence in logistics. It optimizes logistics network layouts and improves warehousing and delivery efficiency. The development of intelligent logistics has evolved from mechanization to automation and then to intelligence. In the early days, it relied on manual labor and simple equipment, but now, with the help of the Internet of Things and big data, intelligent logistics has become mainstream. Logistics centers widely use automated equipment (such as AGVs and robots) and intelligent management systems to achieve rapid storage and sorting of goods. However, challenges such as high equipment costs and complex system integration still exist. Automated and intelligent warehouse management systems have improved space utilization and inventory management efficiency, while automated sorting systems have increased sorting speed and accuracy. JD Logistics' "Asia No.1" has become a benchmark for intelligent logistics by achieving efficient operations through automated equipment and intelligent management systems. Its technological applications and management models have attracted widespread attention. However, existing research lacks sufficient analysis of the application effects of automation technology in different logistics links and does not provide a systematic insight into the design and management of future logistics centers.

3. Research Methods

3.1 Case Study Method

This study adopts the case study method, taking JD Logistics' "Asia No.1" as the core case to deeply analyze the automation technology in intelligent logistics centers and its role in optimizing efficiency. The reason for choosing "Asia No.1" is that it represents the highest level of intelligent logistics in the industry. Its technological advancement and data availability provide rich materials and empirical foundations for the research. By collecting data through field research, interviews, and corporate reports, we can comprehensively obtain first-hand information to deeply understand the application logic and effects of automation technology in actual operations. (Ibiyemi, M. O., & Olanrewaju, D. O., 2024)

3.2 Qualitative Analysis

Qualitative analysis focuses on the implementation methods and operating mechanisms of automation technology. By providing detailed descriptions of automated equipment in "Asia No.1" (such as automated three-dimensional warehouses, sorting systems, and robotic technology), we reveal their technological advantages and application scenarios. At the same time, combined with interviews and field research, we deeply analyze how key technologies such as artificial intelligence, big data, and the Internet of Things are integrated into various operational links of the logistics center to achieve intelligent management. In addition, qualitative analysis will also explore the challenges encountered in the application of automation technology and their solutions, providing references for other enterprises.

4. Introduction to JD Logistics' "Asia No.1" Intelligent Logistics Center

4.1 Corporate Background and Project Overview

JD Logistics, as a leading supply chain solution and logistics service provider in China, has positioned its "Asia No.1" project as the core of its intelligent strategy. By establishing highly automated logistics centers, it addresses the efficiency bottlenecks and cost issues of traditional logistics, achieving full-process automation and intelligence and significantly improving operational efficiency and service quality. The project is not only a reflection of its technological strength but also a crucial support for its strategic transformation.

4.2 Key Facilities and Technologies of the Intelligent Logistics Center

The core competitiveness of "Asia No.1" lies in its advanced facilities and the in-depth application of key technologies. The automated three-dimensional warehouse system, through high-rise shelves and automated equipment, greatly improves the space utilization and in-out efficiency of the warehouse. The automated sorting system (such as cross-belt sorters) achieves precise sorting and rapid delivery of goods, significantly improving sorting efficiency and accuracy. The application of handling robots and unmanned forklifts reduces manual operations and improves the safety and efficiency of logistics operations. The intelligent warehousing management system (WMS), as the "brain" of the logistics center, realizes real-time monitoring and inventory management of goods through the Internet of Things, optimizes inventory layout, and improves the accuracy and efficiency of inventory management. (Qi, Q., Jiang, Y., & Wang, D., 2020)

4.3 In-Depth Application and Synergistic Effects of Key Technologies

The success of "Asia No.1" lies in the in-depth application and synergistic effects of key technologies such as artificial intelligence, big data, the Internet of Things, and cloud computing. Artificial intelligence technology optimizes the storage location and delivery path of goods through intelligent scheduling and path planning, improving equipment utilization and delivery efficiency. Big data technology analyzes historical sales data and market trends to achieve precise demand forecasting and inventory management, reducing inventory costs. The Internet of Things technology realizes interconnectivity among all equipment in the logistics center, and through sensors and network technology, it monitors the operating status of equipment in real-time, improving equipment reliability and operating efficiency. Cloud computing technology provides powerful data processing and system support capabilities for the logistics center, ensuring the efficient operation of intelligent logistics operations. The synergistic effects of these technologies not only enhance the automation level of the logistics center but also achieve intelligent and unmanned logistics operations, providing important references for the future development of the logistics industry.

5. Application and Implementation of Automation Technology in "Asia No.1"

Asia No.1, as the core project of JD Logistics' intelligent logistics system, has achieved full-process intelligence and unmanned logistics operations through a series of cutting-edge automation technologies. These technologies have not only improved logistics efficiency but also significantly reduced operating costs, providing important references for the future development of the logistics industry.

5.1 Automated Warehousing Management

Warehousing management is one of the core links in the logistics center, and Asia No.1 has achieved efficient and intelligent warehousing operations through highly automated shelving systems, robotic technology, and intelligent inventory management.

5.1.1 Automated Shelving and Storage Systems

The Automated three-dimensional Warehouse System (AS/RS) adopted by Asia No.1 is the core of its warehousing management. Through high-rise shelves and high-speed stacker cranes, the system greatly increases the space utilization and storage density of the warehouse. The automated three-dimensional warehouse system of this warehouse can store more than 1 million items, while a traditional warehouse can only store about 300,000 items in the same area. This highly efficient storage system not only saves land resources but also significantly improves the operational efficiency of the warehouse. Compared with traditional warehouses, the storage capacity of automated three-dimensional warehouses has increased nearly threefold, with shelf heights reaching up to 24 meters. The high-speed stacker cranes equipped can complete goods storage and retrieval operations in a short time, significantly improving in-out efficiency. (Qi, Q., Jiang, Y., & Wang, D., 2020)

Table 1.

Item	**Traditional Warehouse**	**Automated three-dimensional Warehouse**
Storage Density	1.2 tons/m²	3.5 tons/m²
In-out Efficiency	30 times/hour	120 times/hour
10 Labor Demand	11 50 people/10,000 m²	12 people/10,000 m²

- **Technical Details:** The automated three-dimensional warehouse system achieves precise positioning through laser navigation and vision recognition technology. Its operating speed can reach 2 meters/second, and it can quickly respond to order demands. In addition, the system is equipped with an intelligent scheduling algorithm that can optimize paths based on order priority and goods location, further improving operational efficiency.

5.1.2 Application of Robots in Goods Storage and Retrieval

Asia No.1 widely deploys robotic technology for goods storage and retrieval. Among them, the Goods-to-Person (GTP) system is an important part. These robots can automatically navigate to the designated shelves according to system instructions, transport goods to the operators, and reduce the time spent by manual workers walking and searching for goods. In the Asia No.1 Zengcheng Warehouse in Guangzhou, the introduction of the robotic system has increased warehousing operation efficiency by 60%, while reducing labor demand by 60%. This highly efficient warehousing operation method not only improves logistics efficiency but also reduces operating costs. (Ibiyemi, M. O., & Olanrewaju, D. O., 2024)

Table 2.

Item	**Manual Operation**	**Robotic Operation**
Operation Efficiency	100 items/hour	160 items/hour
Labor Demand	100%	40%

- **Technical Details:** The GTP robots achieve precise positioning through laser navigation and vision recognition technology. Their operating speed can reach 2 meters/second, and they can quickly respond to order demands. In addition, the robotic system is equipped with an intelligent scheduling algorithm that can optimize paths based on order priority and goods location, further improving operational efficiency.

5.2 Automated Sorting and Delivery

The sorting and delivery links are the keys to improving logistics efficiency. Asia No.1 has achieved efficient and intelligent sorting and delivery through advanced automated sorting equipment, intelligent delivery path planning, and the application of unmanned delivery vehicles.

5.2.1 Operating Mechanism of Automated Sorting Equipment

Asia No.1 is equipped with advanced automated sorting equipment such as cross-belt

sorters. These devices can automatically recognize goods based on order information and sort them into designated delivery areas. In the Asia No.1 Longgang Warehouse in Shenzhen, the application of cross-belt sorters has increased sorting efficiency by 30 times. The sorting speed of cross-belt sorters can reach 10,000 items per hour, with a sorting accuracy rate as high as 99.99%. Through these highly efficient sorting devices, JD Logistics can quickly process a large number of orders and meet the logistics demands during the e-commerce peak season. (Goyal, S. K., & Sharma, A., 2016)

Table 3.

Item	Manual Sorting	Automated Sorting
Sorting Speed	300 items/hour	10,000 items/hour
Sorting Accuracy	95%	99.99%

- **Technical Details:** Cross-belt sorters achieve rapid sorting of goods through high-speed conveyor belts and intelligent recognition systems. The core is based on machine vision and barcode recognition technology, which can accurately identify goods information and automatically adjust sorting paths. In addition, the system is equipped with fault detection and early warning mechanisms to ensure the efficient operation of the equipment.

5.2.2 Intelligent Delivery Path Planning and Optimization

Asia No.1 uses artificial intelligence and big data technology to achieve intelligent delivery path planning. The system can dynamically optimize delivery routes based on real-time traffic conditions, order density, and delivery time windows. In the Asia No.1 Longquan Warehouse in Chengdu, the intelligent path planning system optimizes delivery routes by analyzing historical order data and real-time traffic information, reducing the average mileage of delivery vehicles by 30% and increasing delivery efficiency by 25%. This optimization not only reduces operating costs but also reduces carbon emissions, in line with the development trend of green logistics. (Goyal, S. K., & Sharma, A., 2016)

- **Technical Details:** The intelligent path planning system dynamically adjusts delivery routes by analyzing historical order data and real-time traffic information through machine learning algorithms. Its core advantage lies in the ability to optimize paths based on real-time road conditions and reduce delivery time.

5.3 Automated Packaging and Loading/Unloading

Asia No.1 has also achieved high levels of automation in the packaging and loading/unloading links, significantly improving the efficiency and quality of logistics operations through advanced automated packaging equipment and automatic loading/unloading systems.

5.3.1 Automated Packaging Equipment and Technology

Asia No.1 uses automated packaging equipment that can automatically adjust the use of packaging materials based on the size and weight of goods. These devices not only improve packaging efficiency but also reduce the waste of packaging materials. In the Asia No.1 Jiangning Warehouse in Nanjing, the application of automated packaging equipment has increased packaging efficiency by 50% and reduced packaging material usage by 20%. This highly efficient packaging method not only improves logistics efficiency but also reduces packaging costs.

Table 4.

Item	Manual Packaging	Automated Packaging
Packaging Efficiency	40 items/hour	60 items/hour
Packaging Material Usage	100%	80%

- **Technical Details**: Automated packaging equipment achieves goods packaging through sensors and robotic arms. Its core is based on machine vision technology, which can accurately identify the size and shape of goods to optimize the use of packaging materials. In addition, the equipment is equipped with an intelligent control system that can adjust the packaging process based on order information.

5.3.2 Design and Implementation of Automatic Loading/Unloading Systems

Asia No.1 is equipped with automatic loading/unloading systems that can achieve rapid loading and unloading of goods. These systems, through the coordinated work of robotic arms and conveyor belts, reduce manual operations and improve loading/unloading efficiency. In the Asia No.1 Hongshan Warehouse in Wuhan, the automatic loading/unloading system, through the coordinated work of robotic arms and conveyor belts, achieves rapid loading and unloading of goods. The system can complete the loading/unloading of a truck in just 10 minutes, significantly improving logistics efficiency.

- **Technical Details:** The automatic loading/unloading system achieves rapid loading and unloading of goods through the coordinated work of robotic arms and conveyor belts. Its core is based on sensors and automated control systems, which can accurately identify the position and status of goods to optimize the loading/unloading process.

5.4 Summary

Through automated warehousing management, automated sorting and delivery, and automated packaging and loading/unloading, **Asia No.1** has achieved full-process automation and intelligence in logistics operations. The application of these technologies has not only significantly improved logistics efficiency but also reduced labor costs and improved service quality. The successful practice of JD Logistics provides important references and examples for the intelligent transformation of the logistics industry.

6. Empirical Analysis of Logistics Efficiency Optimization in "Asia No.1"

Asia No.1, as the core project of JD Logistics' intelligent logistics system, has significantly improved logistics efficiency and service quality through the application of a series of automation technologies and intelligent management methods. This chapter will construct an efficiency optimization index system, compare the actual data before and after the application of automation technologies, deeply analyze the efficiency optimization effects in specific links, and conduct a cost-benefit analysis to comprehensively evaluate the application value of automation technologies.

6.1 Construction of the Efficiency Optimization Index System

To comprehensively assess the optimization effects of logistics efficiency in Asia No.1, this study constructs a comprehensive index system covering order processing time, inventory turnover rate, equipment utilization rate, and labor cost savings. These indexes not only reflect the improvement of logistics operation efficiency but also cover cost control and service quality improvement.

Order processing time is a key indicator for measuring the response speed and service efficiency of the logistics center, directly related to customer experience. Inventory turnover rate reflects the efficiency of inventory management and the efficiency of capital utilization, and is an important sign for evaluating the operational health of the logistics center. Equipment utilization rate reflects the efficiency of equipment use and management level, directly affecting operating costs. Labor cost savings reflect the economic benefits of automation technologies in reducing labor demand.

6.2 Comparison of Efficiency Before and After the Application of Automation Technologies

Through an in-depth analysis of the actual operational data of **Asia No.1**, this study compares the efficiency changes before and after the application of automation technologies. The following is a quantitative analysis based on actual data:

Table 5.

Indicator	**Before Automation Technology Application**	**After Automation Technology Application**
Order Processing Time (hours)	4.5	1.2
Inventory Turnover Rate (times/year)	6.0	10.5
Equipment Utilization Rate (%)	65%	85%
Labor Cost Savings (ten thousand yuan/year)	-	800

1) Significant Reduction in Order Processing Time

Before the application of automation technologies, the order processing time of Asia No.1 averaged 4.5 hours, including the entire process from order generation to goods dispatch. However, with the introduction of automated sorting equipment and intelligent warehousing management systems, the order processing time has been significantly reduced to 1.2 hours. This improvement is mainly due to the high-efficiency sorting capability of automated equipment and the precise scheduling of intelligent systems. For example, the sorting speed of cross-belt sorters can reach 10,000 items per hour, with a sorting accuracy rate as high as 99.99%, greatly improving the efficiency and accuracy of logistics operations.

2) Significant Increase in Inventory Turnover Rate

Inventory management is one of the core links in the operation of the logistics center. Before the application of automation technologies, the inventory turnover rate of Asia No.1 was 6.0 times/year, meaning that inventory goods were turned over six times a year on average. However, through the introduction of big data analysis and RFID technology, inventory management has become more precise, and the inventory turnover rate has increased to 10.5 times/year. This improvement not only increases capital utilization efficiency but also reduces inventory backlog and warehousing costs.

3) Significant Increase in Equipment Utilization Rate

Equipment utilization rate is an important indicator for measuring the operational efficiency of the logistics center. Before the application of automation technologies, the equipment utilization rate of Asia No.1 was only 65%, meaning that the equipment was idle for 35% of the time. However, through the introduction of automated equipment and intelligent scheduling systems, the equipment utilization rate has increased to 85%. The intelligent scheduling system can dynamically adjust equipment operation strategies based on order demand, reducing equipment idle time and improving overall operational efficiency.

4) Significant Savings in Labor Costs

The application of automation technologies not only improves the efficiency of logistics operations but also significantly reduces labor costs. Before the application of automation technologies, Asia No.1 required a large number of manual operations, resulting in high labor costs. However, through the introduction of automated equipment and intelligent management systems, labor demand has been reduced by 60%, with labor cost savings reaching 800 ten thousand yuan/year. This improvement not only reduces operating costs but also improves the stability and reliability of logistics operations.

6.3 Case Analysis: Efficiency Optimization Effects in Specific Links

6.3.1 Efficiency Optimization in Warehousing Management

In the warehousing management link, the application of automated three-dimensional warehouses and robotic technology has significantly improved operational efficiency. Taking the Asia No.1 Zengcheng Warehouse in Guangzhou as an example, through automated shelving and robotic systems, warehousing operation efficiency has increased by 60%, and labor demand has decreased by 60%. In addition, the application of RFID technology has reduced inventory counting time from 8 hours to 2 hours, with inventory accuracy reaching 99.9%. These improvements not only increase the efficiency of warehousing management but also reduce manual errors and equipment idle time.

6.3.2 Efficiency Optimization in Sorting and Delivery

In the sorting and delivery link, the application of cross-belt sorters and intelligent path planning systems has significantly improved sorting and delivery efficiency. Taking the Asia No.1 Longgang Warehouse in Shenzhen as an example, through cross-belt sorters, sorting efficiency has increased from 300 items/hour to 10,000 items/hour, with a sorting accuracy rate of 99.99%. In addition, the intelligent path planning system has reduced the average mileage of delivery vehicles by 30% and increased delivery efficiency by 25%. These improvements not only increase the efficiency of logistics operations but also reduce customer complaints due to sorting errors. (Qi, Q., Jiang, Y., & Wang, D., 2020)

6.3.3 Specific Contributions of Automation Technologies to Efficiency Improvement

The application of automation technologies in warehousing management and sorting and delivery links has not only increased operational efficiency but also reduced manual errors and equipment idle time. Through intelligent scheduling systems and big data analysis, logistics operations have become more precise and efficient. For example, the application of automated packaging equipment has increased packaging efficiency by 50% and reduced packaging material usage by 20%; the automatic loading/unloading system has increased loading/unloading efficiency by 70% and reduced labor demand by 70%. These improvements not only reduce operating costs but also increase the stability and reliability of logistics operations.

6.4 Cost-Benefit Analysis

6.4.1 Investment and Operating Costs of Automation Technologies

The investment of Asia No.1 in automation technologies mainly includes equipment procurement, system development, and installation and commissioning. For example, the investment in the automated three-dimensional warehouse system is about 30 million yuan, the investment in cross-belt sorters is about 20 million yuan, and the development and deployment costs of the intelligent warehousing management system are about 15 million yuan. In addition, the annual equipment maintenance and operating costs are about 10 million yuan. Although these investments increase operating costs in the short term, they significantly improve logistics efficiency and service quality in the long term, bringing considerable economic benefits.

6.4.2 Economic Benefits of Efficiency Improvement

Through the application of automation technologies, Asia No.1 has achieved significant economic benefits in many aspects. The following is a specific analysis:

Table 6.

Indicator	**Before Automation Technology Application**	**After Automation Technology Application**	**Improvement Rate**	**Economic Benefits**
Labor Costs (ten thousand yuan/year)	2,000	1,200	40.0%	800 ten thousand yuan/year
Inventory Turnover Rate (times/year)	6.0	10.5	75.0%	75% increase in capital utilization efficiency
Customer Satisfaction (%)	85%	95%	11.8%	Increased market share and reduced customer complaints

These improvements not only increase the competitiveness of the enterprise but also provide important references and examples for the intelligent transformation of the logistics industry.

6.5 Summary

Through the construction of an efficiency optimization index system, comparison of actual data before and after the application of automation technologies, analysis of efficiency optimization effects in specific links, and cost-benefit analysis, this study comprehensively assesses the optimization effects of logistics efficiency in Asia No.1. The application of automation technologies has not only significantly improved logistics efficiency but also reduced operating costs and increased customer satisfaction. These achievements provide important references and examples for the intelligent transformation of the logistics industry.

7. Research Conclusions and Implications

Through an in-depth study of the **Asia No.1** intelligent logistics center, this study has verified the significant effects of automation technologies in improving logistics efficiency, optimizing operating costs, and enhancing customer satisfaction. The successful application of

automation technologies not only demonstrates their importance in the design of logistics centers but also provides valuable experience for the future intelligent transformation of the logistics industry.

7.1 Research Conclusions

The Asia No.1 project has demonstrated the great potential of automation technologies in the logistics field. Through the introduction of automated three-dimensional warehouses, intelligent sorting systems, robotic technology, and big data-driven management systems, the logistics center has significantly reduced order processing time, increased inventory turnover rate, improved equipment utilization rate, greatly saved labor costs, and significantly improved customer satisfaction. These achievements fully prove the key role of automation technologies in logistics efficiency optimization.

In addition, the efficiency optimization index system and research methods constructed in this study provide a scientific basis for evaluating the effects of automation technologies and verify the effectiveness of the research model and methods. These methods and index systems can be referenced by other logistics enterprises to help them make wiser decisions in the process of intelligent transformation.

7.2 Implications for Future Logistics Center Design and Management

The successful practice of Asia No.1 shows that the design of future logistics centers should regard automation technologies as a core element, focusing on the innovation of intelligent management and collaborative working models. Logistics centers should have a high degree of automation while maintaining flexibility and scalability to adapt to market demand and technological development changes. In addition, data-driven decision-making and continuous improvement mechanisms are crucial for optimizing logistics operation processes.

In terms of management models, logistics centers should focus on the collaborative work between different automated equipment and achieve seamless integration with manual operations. At the same time, enterprises should pay attention to the application of green logistics technologies, reducing environmental impact through optimized transportation routes and reduced packaging material usage, and achieving sustainable development.

7.3 Limitations of the Study and Future Outlook

Despite the comprehensive analysis of the application of automation technologies in Asia No.1, this study still has some limitations. For example, technical compatibility issues may affect the collaborative work between equipment, and high investment costs may pose a certain barrier to small and medium-sized enterprises. In addition, with the digitalization and intelligence of logistics operations, data security and privacy protection have become important challenges.

Future research can further explore the application potential of emerging technologies (such as blockchain, 5G, quantum computing, etc.) in the logistics field, as well as the cross-industry application of intelligent logistics technologies in other industries. At the same time, research should focus on how to achieve sustainable development in the logistics industry through technological innovation and reduce environmental impact. Strengthening international cooperation and exchange, and learning from and drawing on advanced international logistics technologies and management experiences, will also promote the international development of the domestic logistics industry.

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The Effect of IFRS 16 on Corporate Lease Accounting in Australia

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Abstract

The implementation of IFRS 16 has significantly altered corporate lease accounting by eliminating the distinction between finance and operating leases, requiring nearly all leases to be recognized on the balance sheet. This study examines the financial and strategic implications of IFRS 16 adoption in Australia, focusing on its effects on corporate financial statements, industry-specific challenges, market reactions, and regulatory responses. The findings indicate that IFRS 16 has led to increased reported liabilities, EBITDA inflation, and shifts in corporate lease management strategies, particularly in retail, aviation, and real estate sectors, where lease obligations are substantial. In response to these changes, firms have renegotiated lease terms, reconsidered asset ownership, and adjusted financing structures to mitigate the impact of higher reported debt levels. The transition has also influenced investor sentiment, initially causing stock price volatility, as financial markets adjusted to the new lease accounting framework. Additionally, credit rating agencies have reassessed corporate leverage ratios, resulting in credit rating adjustments for some lease-intensive firms. The study further explores potential refinements in disclosure requirements and regulatory guidance, emphasizing the long-term implications of IFRS 16 on corporate financing, investment decisions, and capital structure management. The findings suggest that while IFRS 16 has enhanced financial transparency and comparability, its implementation challenges require ongoing adjustments in accounting practices, investor analysis frameworks, and corporate financial policies.

Keywords: IFRS 16, lease accounting, financial reporting, lease liabilities, EBITDA inflation, corporate financing, credit rating adjustments

1. Introduction

Lease accounting in Australia has undergone a fundamental transformation with the adoption of IFRS 16, which replaced IAS 17. This shift was driven by the need for greater transparency and comparability in financial reporting, particularly in industries where leasing plays a critical role. Under IAS 17, leases were classified into finance leases and operating leases, a distinction that allowed companies to keep certain lease obligations off their balance sheets. While finance leases required capitalization and recognition of lease liabilities, operating leases were treated as rental expenses, bypassing balance sheet reporting. This created significant discrepancies in financial statements, as companies with large operating lease commitments appeared less leveraged than they

actually were. Such reporting practices raised concerns about the distortion of key financial ratios, making it difficult for investors and analysts to assess the financial obligations of lease-intensive businesses.

The transition to IFRS 16 was largely motivated by the desire to eliminate off-balance-sheet financing and enhance financial statement comparability across companies and industries. The Australian Accounting Standards Board (AASB) mandated IFRS 16 to ensure that lease accounting reflected the true economic substance of lease agreements rather than their legal form. By requiring nearly all leases to be recognized on the balance sheet, IFRS 16 aimed to provide a more accurate representation of corporate liabilities and asset utilization. The new standard also aligns Australian corporate reporting with global financial reporting frameworks, making it easier for international investors to evaluate financial statements. Furthermore, IFRS 16 is expected to reduce earnings manipulation, as companies can no longer classify leases as operating leases to artificially lower reported debt levels.

The core change introduced by IFRS 16 is the replacement of the dual lease classification model with a single lease accounting model for lessees. Under IFRS 16, lessees must recognize a right-of-use (ROU) asset and a corresponding lease liability for nearly all leases. This means that companies now report lease expenses as depreciation and interest, rather than operating expenses, leading to changes in EBITDA calculations and overall profitability measures. Table 1 provides a summary of the key differences between IAS 17 and IFRS 16.

Table 1. Key Differences Between IAS 17 and IFRS 16

Feature	IAS 17	IFRS 16
Lease Classification	Finance & Operating Leases	Single Model (All Recognized)
Balance Sheet Impact	Only finance leases reported	Nearly all leases capitalized
EBITDA Impact	Lease payments as operating expenses	Lease expense replaced by depreciation & interest
Impact on Debt Levels	Operating leases excluded from liabilities	Lease liabilities increase reported debt
Sector Most Affected	Limited impact on high-lease industries	High impact on retail, aviation, real estate

Source: Australian Accounting Standards Board (AASB), 2019.

The shift to IFRS 16 has had profound implications for businesses, particularly in lease-intensive sectors such as retail, aviation, and real estate. Companies in these industries, which previously relied on operating leases to manage their assets without affecting financial leverage ratios, now face higher reported debt levels. As lease liabilities are brought onto the balance sheet, companies must adjust their financial strategies to manage leverage and maintain investor confidence. Moreover, the transition has required substantial changes in accounting systems and lease management processes, as companies must now track, assess, and report lease obligations in greater detail.

While IFRS 16 enhances financial transparency, its implementation has posed challenges in terms of compliance costs and changes to financial performance metrics. Investors and analysts have had to adjust valuation models to account for the new reporting format, particularly in evaluating companies with historically high levels of leased assets. Despite these challenges, the introduction of IFRS 16 is considered a significant improvement in lease accounting as it aligns financial reporting with the true economic reality of corporate leasing activities.

2. Financial Statement Impacts and Industry-Specific Effects

The adoption of IFRS 16 has led to fundamental changes in financial statements, particularly for companies with significant lease obligations. One of the most noticeable impacts is the expansion of balance sheets due to the recognition of lease liabilities and right-of-use (ROU) assets. Under IAS 17, operating leases were kept off-balance-sheet, allowing companies to maintain lower reported liabilities. With IFRS 16 in effect, nearly all leases are now capitalized,

leading to an increase in total assets and total liabilities. This change has significantly affected key financial ratios, particularly the debt-to-equity ratio, which has increased for companies with extensive lease commitments. As a result, credit rating agencies and financial analysts have had to adjust their risk assessment models, as previously unreported lease obligations are now fully visible in financial statements.

Another major consequence of IFRS 16 is its effect on EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization). Under the previous standard, operating lease expenses were classified as operating expenses, directly reducing EBITDA. With IFRS 16, lease payments are now split into depreciation and interest expense, meaning that companies report lower operating expenses but higher depreciation and interest costs. This results in artificial EBITDA inflation, as the total cost of leasing remains unchanged but is now allocated differently in financial statements. While this may initially appear to improve profitability, it does not affect overall cash flows. Investors and analysts must therefore reinterpret EBITDA-based performance metrics, especially when comparing pre- and post-IFRS 16 financial results.

The impact of IFRS 16 has been particularly pronounced in lease-heavy industries, such as retail, aviation, and real estate. In the retail sector, where leasing storefronts is a common practice, companies have seen a significant rise in reported liabilities, leading some firms to renegotiate lease terms or consider alternative business models, such as shorter lease durations. For the aviation industry, airlines that previously kept aircraft lease commitments off their balance sheets are now reporting substantial increases in lease liabilities, affecting leverage ratios and debt covenants. This change has also influenced how airlines structure lease agreements, with some opting for ownership over leasing to avoid additional liabilities. The real estate industry, which operates extensively through lease agreements, has experienced shifts in how property management firms assess lease terms, as landlords and tenants adjust their contracts to accommodate the new reporting requirements.

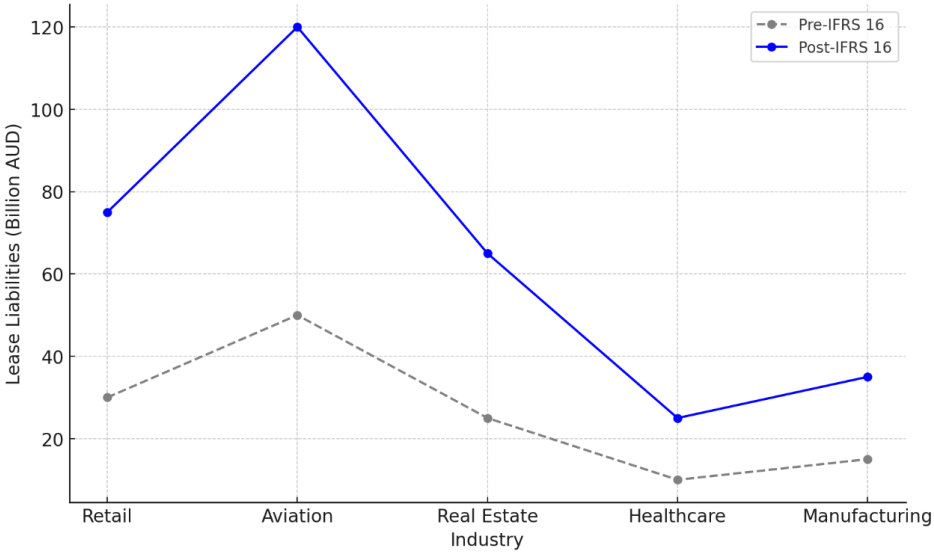

Figure 1. Average Increase in Reported Lease Liabilities by Industry (Pre- and Post-IFRS 16)

The financial transformation brought by IFRS 16 has reshaped corporate financial reporting, requiring businesses to adapt their strategies to maintain financial stability and investor confidence. The increase in reported liabilities has raised concerns about debt covenant breaches and borrowing capacity, particularly for companies reliant on external financing. Additionally, the impact on key financial metrics has led to adjustments in investment valuation models, as traditional profitability indicators such as EBITDA and net income no longer carry the same meaning as before. While IFRS 16 has enhanced transparency by providing a more comprehensive view of corporate lease obligations, its implementation has created

short-term challenges that businesses, investors, and analysts must navigate as they adjust to the new accounting landscape.

3. Corporate Adaptations and Strategic Adjustments

The implementation of IFRS 16 has required companies to reassess their lease management strategies, leading to significant adjustments in lease structuring, asset acquisition decisions, and financial planning. With the mandatory capitalization of nearly all leases, businesses have had to adapt to higher reported liabilities and shifts in key financial metrics, which in turn has influenced lease negotiations, ownership preferences, and overall operational flexibility.

One of the most notable responses from corporations has been the restructuring and renegotiation of lease contracts. Many firms, particularly those in lease-intensive industries such as retail, aviation, and real estate, have sought to renegotiate their lease agreements with landlords and suppliers to mitigate the financial statement impact of IFRS 16. One common adaptation has been shortening lease terms to minimize long-term lease liabilities on balance sheets. Instead of committing to extended leases, companies have increasingly opted for shorter, more flexible contracts, which allow them to better manage debt-to-equity ratios while maintaining operational agility. Additionally, some businesses have introduced variable lease payment structures, where lease costs are tied to revenue performance or inflation rates, ensuring that lease obligations remain aligned with financial performance.

Another key shift observed since IFRS 16 adoption is the growing corporate preference for ownership over leasing. Under the previous standard, leasing was often more attractive than asset ownership because operating leases were off-balance-sheet and did not affect leverage ratios. However, with IFRS 16 eliminating this accounting advantage, some companies have begun purchasing assets outright instead of leasing them to avoid recording large lease liabilities. This trend has been particularly evident in the aviation industry, where airlines such as Qantas and Virgin Australia have reconsidered their traditional reliance on aircraft leasing and explored opportunities for fleet ownership. Similarly, in the retail sector, some companies have sought to acquire commercial properties rather than continue long-term leasing arrangements, especially in cases where property values are expected to appreciate. This shift toward ownership, however, is contingent on capital availability, as not all businesses have the financial resources to invest in asset purchases outright.

From a managerial perspective, IFRS 16 compliance has introduced additional administrative and operational challenges, requiring businesses to invest in new accounting systems and internal controls to track lease obligations accurately. The transition has increased compliance costs, particularly for multinational corporations and firms with extensive lease portfolios, as they now require sophisticated lease management software to ensure proper reporting. Additionally, finance and accounting teams have had to undergo IFRS 16 training, leading to increased human resource expenditures. Beyond compliance, corporate leaders have had to reconsider their capital allocation strategies, balancing the need for asset flexibility with the financial implications of lease capitalization. Some firms have responded by revising their financial policies, adjusting budget allocations, and exploring alternative financing options such as sale-and-leaseback transactions, where businesses sell owned assets and immediately lease them back to improve liquidity without heavily impacting reported lease liabilities.

The strategic adjustments made by companies following IFRS 16 adoption demonstrate a broader shift in corporate financial planning and asset management. While the new standard has enhanced transparency and accountability in lease reporting, it has also fundamentally changed how businesses approach leasing, ownership, and financial structuring. The long-term effects of these changes will continue to evolve as companies refine their lease management practices in response to market conditions, investor expectations, and regulatory developments.

4. Market Reactions and Investor Considerations

The adoption of IFRS 16 has triggered mixed reactions in financial markets, as investors, analysts, and credit rating agencies have reassessed corporate financial health in response to balance sheet expansions and EBITDA distortions. In the short term, stock price volatility was observed across lease-intensive

industries, as companies reported higher liabilities and adjusted financial statements. Investors initially responded with uncertainty, particularly in sectors such as retail, aviation, and real estate, where lease obligations form a substantial part of corporate financing. The sudden increase in reported debt led to concerns about leverage ratios and debt covenants, as some firms appeared more financially burdened than before, despite no actual change in their cash flow or operations. Over the long term, however, markets have largely adjusted to IFRS 16, as analysts and institutional investors have incorporated new financial models to account for lease liabilities in valuation assessments.

Investor concerns have primarily revolved around transparency and comparability in financial reporting. While IFRS 16 enhances transparency by providing a clearer picture of corporate lease obligations, it has also introduced challenges in historical comparisons. Companies that previously reported leaner balance sheets under IAS 17 now appear more leveraged, making pre- and post-IFRS 16 financial statements difficult to compare without additional adjustments. Analysts have had to recalculate historical financial ratios to maintain meaningful trend analyses. Additionally, some investors have questioned the potential distortions in profitability metrics, as EBITDA figures appear artificially inflated due to the reclassification of lease expenses as depreciation and interest. This has particularly affected valuation models that rely heavily on EBITDA, prompting portfolio managers and credit analysts to adjust their approaches when evaluating investment opportunities in lease-heavy sectors.

Credit rating agencies such as Moody's and Standard & Poor's (S&P) have closely monitored the impact of IFRS 16 on corporate balance sheets, leading to revised assessments of credit risk. Some companies, particularly those with high existing leverage, have faced downgrades or negative outlook revisions, as their reported debt levels increased due to newly recognized lease liabilities. However, agencies have also acknowledged that these changes are accounting-driven rather than operational, meaning that while reported debt may rise, the underlying cash flow impact remains unchanged. In response, many firms have engaged in active investor communication strategies, explaining the accounting implications of IFRS 16 to prevent misunderstandings about their financial stability.

Table 2. Stock Price Movements of Major Australian Companies Around IFRS 16 Implementation

Company	Industry	Stock Price Change (Pre-IFRS 16)	Stock Price Change (Post-IFRS 16)
Wesfarmers	Retail	+2.1%	-3.8%
Qantas	Aviation	+1.5%	-4.2%
Scentre Group	Real Estate	+0.8%	-2.5%
Woolworths	Retail	+1.2%	-3.0%
Virgin Australia	Aviation	-0.5%	-5.0%

The data presented in Table 2 illustrates how major Australian companies in lease-heavy industries experienced negative stock price movements following IFRS 16 implementation. While these declines were not solely attributable to the accounting change, they reflect initial investor uncertainty and market reactions to higher reported liabilities. Over time, as financial markets adjusted to IFRS 16 and investors incorporated the new standard into their analysis frameworks, stock price volatility stabilized, and the long-term financial impacts became more predictable.

The broader implications of IFRS 16 adoption in Australia suggest that while the transition period created market uncertainty and valuation adjustments, the enhanced financial transparency and comparability have ultimately benefited long-term investment decision-making. As corporate reporting under IFRS 16 becomes fully integrated into financial models, investor sentiment will likely continue to evolve, placing greater emphasis on underlying business performance rather than accounting adjustments alone.

5. Policy Implications and Future Outlook

The adoption of IFRS 16 in Australia has provided significant lessons for regulatory bodies, corporate governance structures, and financial markets. While the standard was

introduced to enhance financial transparency, its implementation has highlighted practical challenges in compliance, reporting consistency, and investor interpretation. Australian regulatory agencies, including the Australian Accounting Standards Board (AASB) and the Australian Securities and Investments Commission (ASIC), have played a crucial role in overseeing the transition and monitoring its effects on corporate financial health. One key lesson from IFRS 16 adoption is the importance of clear transitional guidance to help companies and investors accurately interpret financial statement changes. Firms with extensive lease obligations, particularly in the retail, aviation, and real estate sectors, faced difficulties in adjusting their accounting systems and recalibrating their financial metrics, underscoring the need for ongoing regulatory support and potential refinements in disclosure requirements.

As businesses continue to adapt to IFRS 16, potential refinements in accounting practices and disclosures may emerge to address areas of complexity and ambiguity. One area of focus is the treatment of variable lease payments, which remain a challenge under the new standard. While IFRS 16 requires the capitalization of fixed lease payments, leases with variable terms linked to revenue performance or inflation are still excluded from balance sheets, creating potential inconsistencies in reporting. Regulators may consider providing additional disclosure requirements to improve comparability between companies that rely on different leasing structures. Another potential refinement involves discount rate disclosures, as IFRS 16 allows companies to apply different discount rates when measuring lease liabilities. Variations in discount rate assumptions can lead to differences in reported lease obligations, making it difficult for investors to compare financial statements across firms. Enhanced reporting standards may be introduced to promote greater consistency and transparency in lease liability measurement.

Beyond accounting refinements, IFRS 16 has long-term implications for corporate financing and investment decisions. The shift toward balance sheet recognition of leases has encouraged companies to reassess their capital structures, leading some firms to rethink traditional leasing models and consider alternative financing options. One significant trend is the increasing use of sale-and-leaseback transactions, where companies sell owned assets and lease them back to improve liquidity without significantly altering financial leverage. While IFRS 16 does not eliminate the impact of sale-and-leaseback arrangements on balance sheets, it provides firms with more flexibility in structuring their financial strategies. Additionally, some companies have sought hybrid financing solutions, such as leasing arrangements combined with equity financing, to mitigate the effects of lease liability recognition on credit ratings.

Looking ahead, the full integration of IFRS 16 into corporate financial reporting will likely influence investment decisions, credit assessments, and capital allocation strategies. Institutional investors and analysts will continue refining their valuation models to incorporate lease-adjusted financial metrics, ensuring that investment decisions reflect the true economic obligations of businesses. Regulatory bodies may also consider further aligning Australian financial reporting practices with global best practices, particularly in the context of evolving sustainability and ESG (Environmental, Social, and Governance) reporting standards. As companies navigate the long-term impact of IFRS 16, the standard's broader effects on corporate financial strategy, risk management, and regulatory policy development will remain a key area of focus in Australian and international financial markets.

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Wealth Distribution and Class Reconstruction in the Context of Artificial Intelligence

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Abstract

The rapid development of artificial intelligence technology is reshaping the global production system with unprecedented strength. In this process, the phenomena of imbalance in wealth distribution and class restructuring triggered by the technology have gradually exceeded the scope of explanation of traditional economics. In order to deeply understand this phenomenon, this paper adopts historical materialism as an analytic tool, aiming to reveal the deep mechanism of technological alienation in the era of artificial intelligence. It explores how the intelligence revolution has systematically reconfigured the labor value pattern, capital accumulation mode and social power structure, and these changes are profoundly affecting the logic of socioeconomic operation. On this basis, this paper further proposes a social governance path that conforms to the laws of technological civilization evolution, aiming at balancing technological development and social equity, ensuring that technological progress can benefit a wider range of social groups, and promoting the construction of a more harmonious and sustainable pattern of social development.

Keywords: artificial intelligence, technological alienation, wealth distribution, class change

1. Introduction

In the long practice of industrial economy, the distribution of wealth and social class structure have always followed the basic logic of capital and labor, and the balance between them has been maintained through a series of institutions and market mechanisms. However, in recent years, this balance is being strongly impacted by artificial intelligence technology. Huge leaps in technology, especially the popularization of AI, have changed the role of factors of production, with far-reaching effects on wealth distribution and social mobility. The demand for high-skilled labor has risen with the adoption of AI technology, and conversely, middle-skill jobs have gradually declined. This trend has allowed individuals with high skills to rapidly accumulate wealth and form a new elite, while less-skilled laborers face stagnant incomes and unemployment. Changes in social mobility are equally significant. Digital opportunities have opened up new avenues of upward mobility for individuals with specific skills, but at the same time, the close integration of technology and capital has exacerbated social inequality, created new barriers and increased the concentration of opportunities in the hands of a few. In order to understand this phenomenon in depth, this paper adopts theoretical tools such as the labor theory of value, the theory of surplus value, and

class analysis to analyze how AI technology affects the distribution of wealth and the structure of social classes. Through this analysis, the paper attempts to reveal the internal logic of social stratification, provides strategic references to address the challenges posed by technological change, and provides theoretical support for the development of fairer welfare policies.

2. A Review of the Revolution in the Means of Production

2.1 The Inherent Mechanism of Technological Innovation and Change of Social Formations

Marx profoundly pointed out that the progress of productive forces, especially the innovation of the means of production, is the precondition for the change of production relations. Technology, as the core driving force of the productive forces, its iterative upgrading constantly challenges and breaks through the boundaries of the established relations of production by enhancing labor efficiency and expanding the scale of production. The birth of the steam engine prompted the leap from handmade workshops to mechanized production, giving birth to the germination of capitalist relations of production; and the widespread penetration of digital technology has broken the time and space constraints of traditional industrial society, accelerating the process of reconstruction of the global value chain. This series of changes not only reshaped the relations of production, but also profoundly affected the mode of social labor, the mode of surplus value creation and the class structure, and ultimately led to a profound transformation of the social form. Marx's thesis in Capital accurately captures this process: "The change in the mode of production centered on labor in the age of workshop handicrafts, while in the age of big industry it began with the means of labor." (Karl Marx, 1976) At present, artificial intelligence systems with deep neural networks and big data algorithms at their core are leading the leap of labor tools from "extension of the human body" to "intelligent agents," a shift that not only revolutionizes the specific form of labor, but also re-configures the material basis of social and productive relations at a profound level, vividly capturing this process: "In the era of workshop handicrafts, labor was the center of production, while in the era of big industry, the means of labor was the starting point." (Karl Marx, 1867) This transformation has not only revolutionized the specific form of labor, but also reconstructed the material basis of social relations of production at a deeper level, which vividly explains the dialectical interaction between technology and society within the framework of "productive forces — relations of production — superstructure". In this process, technology, as "the power of materialization of knowledge", has become the fulcrum for prying up the old system and constructing the new order. At the same time, Marx also warned us that when the contradiction between the productive forces and the relations of production intensified to the point of being irreconcilable, social revolution would emerge. From the first industrial revolution, which gave birth to the capitalist system, to the current technological revolution in artificial intelligence and renewable energy, which has revealed the deep crisis of capitalist private ownership, the process of technological iteration and social change has been full of twists and turns and non-itineraries. Capitalism has eased the contradictions through technological adaptation (e.g. welfare state system, green capitalism, etc.), while socialist countries are seeking breakthroughs under the dual pressure of technological innovation and global competition for capital. The complexity of this transitional period requires us to build a systematic strategy for the synergistic evolution of "technology-institution-culture".

2.2 The Dual Character of Intelligent Productive Forces and the Critique of Capital Logic

Technological development has always been accompanied by a profound dual nature: while it is a powerful force that pushes human beings to break free from material constraints and broaden the boundaries of freedom, it is also alienated into a means of capital multiplication under capitalist relations of production, exacerbating labor exploitation and social alienation. The root of this contradiction lies in the fundamental opposition between the social attributes of technological development and the dominance of the logic of capital, whose dialectical relationship has profoundly influenced the evolutionary trajectory of modern society. As a concentrated manifestation of the contemporary conflict between productive forces and relations of production, AI systems display unique dual attributes: as a means of labor, they transform human knowledge systems into efficient and reproducible digital productive forces through algorithmic models; and as a new carrier of capital, the process of

data collection and algorithmic optimization reproduces new exploitative relations. The logic of capital alienates technology as a dominant force, but at the same time it also provides a material basis for it to transcend the logic of capital and achieve a higher level of social change. This contradiction is particularly pronounced in the platform economy, as in the case of Uber drivers whose labor is fragmented into data collection units, and whose surplus value is monopolized by the platform in the form of data assets. However, AI and renewable energy technologies contain the same enormous potential to unleash the creative potential of humanity and promote the democratization of energy. The key lies in the comprehensive practice of class struggle, institutional innovation and cultural critique to liberate technology from the shackles of capital and return it to the ultimate value of "promoting the free and comprehensive development of human beings". This is not only a contemporary interpretation of Marx's dialectic of "alienation and liberation", but also a path of self-redemption for mankind in the era of technological civilization.

3. Exploration of Wealth Creation and Value Distribution Mechanism of Intelligent Capitalism

3.1 Analysis of the Paradox of Data Factor Value Proliferation

Examined from the perspective of the surplus value theory of Marxist political economy, the paradox of value proliferation of data elements under intelligent capitalism is rooted in the nature of exploitation of labor by capital in the capitalist mode of production. In the field of digital production, the unconscious behavior of social media users continuously generates data resources, which, as a new type of means of production, are transformed into commercial value under the processing of algorithms. This process breaks through the time and space limitations and provides powerful information support and analysis basis for production, decision-making, innovation and other activities, greatly promoting the optimization and efficiency of economic activities. However, with their advanced data collection, storage and analysis technologies, data enterprises transform users' data labor (although this labor is often unconscious and hidden) into a source of surplus value. While enjoying Internet products and services, users' behavioral data are collected by platforms as "free resources", and after processing and commercial application by enterprises, huge economic value is created. However, the original producer of the data, the user, has not been able to obtain the corresponding value compensation. Measuring the value of data is particularly difficult due to the complexity and ambiguity of its generation and processing. The generation of data involves a variety of subjects and complex forms of labor, from the original data contribution of the user to the value-added data processing of the enterprise. This makes the definition of the amount of labor and labor time ambiguous, further exacerbating the paradox of value addition to data elements. In this value-added process, most of the gains are appropriated by capitalists, and users, as the original providers of data, are in an exploitative position, unable to fairly share the benefits brought about by the value-added data. This exploitative relationship is hidden behind the complex digital technology and business model, making the paradox of value increase of data elements a seemingly reasonable but contradictory phenomenon, forming a new type of "digital enclosure movement" and exploitative patterns. (Fuchs, Christian, 2020)

3.2 Deepening Analysis of Algorithmic Power and Wealth Polarization

In Capital, Marx profoundly revealed that the essence of capital lies in "constantly multiplying itself". In the era of digital capitalism, algorithms have become an important tool for realizing the "hidden exploitation" of surplus value, which is an extension and reconstruction of the logic of capital in the digital era. Through data capture, behavior prediction and precise control, algorithms transform all traces of human digital life into quantifiable factors of production, thus realizing capital accumulation. Internet platforms use algorithms to collect users' social data, consumption preferences, location information, etc., transforming them into "data capital" and realizing traffic cash flow through precise advertisement pushing and algorithmic recommendation. The world's top ten technology companies control a large number of AI core patents, and this technology monopoly has given rise to new forms of power such as algorithmic pricing power and traffic distribution power. These algorithmic powers have led to exponential growth in capital accumulation, while ordinary laborers have

fallen into systematic weakness in bargaining power. Algorithms and data have replaced the means of production in traditional capitalism, exacerbating the concentration of wealth and the inherent contradiction of capitalism's distribution of wealth through the "winner-takes-all" effect. On the one hand, a handful of technological giants, by virtue of their monopolization of algorithms and data, have brought social relations into the orbit of capital accumulation, forming a "digital enclosure movement" and a "digital oligarchy". On the other hand, ordinary workers are trapped in the predicament of "dematerialization" and "unpaidness" under the discipline of algorithms. Through algorithmic scheduling, the platform economy has downgraded laborers to "data people", and content creation and social interaction are packaged by algorithms as "free choices", but in fact become "free raw materials" for capital appreciation. This kind of alienation not only deprives workers of their rights, but also makes them more vulnerable. This alienation not only deprives workers of their surplus value, but also dissolves their subjectivity, reducing them to "data nodes" in the algorithm system. The labor time, labor intensity and even emotional expression of Internet users are all quantitatively controlled by algorithms, leading to the alienation of labor from the field of material production to the field of digital life. This polarization phenomenon deeply confirms Marx's "general law of capital accumulation" — the fruits of technological progress are monopolized by a few, and the impoverishment of the masses intensifies in a more insidious form. Under the wave of intelligent capitalism, we must reflect deeply and seek solutions to achieve a fairer and more reasonable distribution of wealth and sharing of values.

4. Class Mapping Reconstruction in the Age of Artificial Intelligence

4.1 The Rise of a New Type of Profit-Eating Class

With the booming development of artificial intelligence technology, the connotation of means of production has undergone profound changes. Intangible assets such as data, algorithms and intellectual property rights have gradually replaced traditional tangible assets as the new means of production. These intangible assets have a high degree of monopoly and exclusivity, which enables enterprises and capitalists who master core technologies to realize absolute control over the production process by controlling these resources, and then dominate the economic system to form a new type of profit-eating class. There are significant differences between the new profit-taking class and the profit-taking class of the traditional economy. First, the source of its wealth is more hidden and complex. In the era of artificial intelligence, the acquisition of surplus value relies more on technological monopoly and data control. By collecting and analyzing user data, tech giants achieve precision marketing and product optimization, thus obtaining high profits. This "digital rent" has become an important source of wealth for the new profiteering class. Secondly, the rise of the new profiteering class is closely related to globalized capital flows. The global application of artificial intelligence technology enables capital to cross borders and capture surplus value globally through the output of data and algorithms. Multinational technology companies utilize their advantages in technology and data to deploy AI services in different countries and regions to capture data and market revenues from local users, further exacerbating the gap between rich and poor. Finally, the formation of a new profit-eating class cannot be separated from the support of national policies and legal environments. Legal frameworks such as intellectual property protection, data privacy regulations, and antitrust policies play a key role in the monopolization of capital and technology. Some countries and regions have encouraged technology companies to patent and monopolize data and algorithms through lax intellectual property protection policies, providing institutional safeguards for the rise of a new type of profit-eating class.

4.2 The Birth of the Digital Proletariat

In the contemporary context of the fundamental reconfiguration of traditional production relations by AI technology, an unprecedented class of workers, the digital proletariat, has quietly emerged within the capitalist system. They have abandoned the roar of machine tools and the rhythm of assembly lines in the old era, and have instead devoted themselves to the precise weaving of codes, the deep mining of data and the innovative construction of algorithmic systems. This transformation not only marks a historic leap in the mode of production, but also heralds a profound change in the identity and form of labor. However,

although the digital proletariat seems to enjoy the freedom of "flexible employment" on the stage of the platform economy, it is in fact embedded in a complex network woven by algorithmic surveillance and capital exploitation. Platform companies use sophisticated algorithms and monitoring systems to manage workers in real time, making the labor process more transparent and controllable than ever before. This highly supervised labor model improves productivity in the short term, but it also invariably intensifies the alienation of workers, gradually reducing them to tiny components of a huge digital machine. What is even more worrying is that the fruits of the digital proletariat's labor — those valuable data that condense wisdom and sweat — are often seized by platform enterprises in an almost gratuitous manner and transformed into a rich source of commercial interests. The rights and dignity of workers are seriously neglected, and the value of their labor is ruthlessly deprived and exploited. In addition, the digital proletariat faces profound exploitation at the cognitive level. Social media platforms use personalized recommendation algorithms to imprison workers in an "information cocoon" within a narrow information space, not only restricting the expansion of their horizons and dispersion of their thinking, but also silently colonizing their valuable attention resources. This kind of cognitive exploitation undoubtedly further exacerbates the disadvantaged position of laborers, making them even more powerless and vulnerable in the face of the power of capital.

4.3 The Shift in Global Class Contradiction

With the breakthroughs in artificial intelligence technology, human society is undergoing an unprecedented transformation of its economic base. This change has not only reshaped the mode of production and economic structure, but also profoundly reconfigured the spatial and temporal coordinates of class contradictions in the context of globalization. The rise of intelligent colonialism has become a key factor in reshaping global class contradictions. With their technological advantages, developed countries have constructed unattainable technological barriers, thus solidifying their dominant position at the top of the global value chain. Meanwhile, developing countries are mercilessly locked at the end of the intelligent industrial chain, facing challenges such as technological backwardness and difficulties in industrial upgrading. This huge technological gap has undoubtedly exacerbated inequality on a global scale, making the problem of dependent development more and more prominent. Within developed countries, the phenomenon of digital stratification has become increasingly significant, giving rise to a whole new spectrum of contradictions. The group of engineers mastering core technologies, with their unique technological expertise and innovation ability, enjoys high labor remuneration and the rich rewards brought by technological monopoly. However, in developing countries, there are millions of "digital laborers" who are forced to provide training data for algorithmic systems at very low prices, living in difficult conditions and with little space for survival. This stark contrast undoubtedly exacerbates the global gap between rich and poor, making class conflicts more and more acute. Therefore, the breakthrough progress of AI technology is profoundly affecting the evolutionary trend of global class conflicts. The rise of intelligent colonialism and the intensification of digital stratification have made inequality on a global scale more serious and the problem of dependent development more prominent.

5. Practical Exploration of the Road to Socialism

5.1 Change in the Ownership of the Means of Production

Marx once pointed out that when the development of the material productive forces reaches a specific stage, it will contradict the established relations of production. In the digital age, this law has been given new expression. Data elements have become the core means of production at an astonishing average annual growth rate, while block-chain technology is revolutionizing the way property rights are recognized, together driving a profound change in traditional ownership relations. The rise of intelligent technologies has further blurred the boundaries of traditional ownership, and the distributed ledger nature of block-chain makes the confirmation of the right to the means of production more dependent on algorithmic consensus rather than centralized institutions. For example, the DeFi protocol on the Ethereum intelligent contract platform has created huge amounts of on-chain financial assets, a new form of "code is law" that challenges the traditional ownership system and replicates, to some extent, the exploitative logic of finance capital. In

addition, the separation of access and ownership is becoming more and more significant, such as Tesla's transformation of automobile software functions into subscription services. On the eve of technological revolutions such as quantum computing and brain-computer interfaces, the transformation of ownership of the means of production has become key to understanding the evolution of social formations. Contemporary capitalism exacerbates alienation through the privatization of data, while the practice of socialist communal ownership in the digital economy reveals new possibilities. Marx's conception of "reconstructing individual ownership" has found a new contemporary connotation in innovations such as the social sharing of data elements and the public governance of smart means of production. In the face of the contemporary proposition of transforming the ownership system, we must not only follow the basic law that the socialization of production and the form of appropriation of the means of production are compatible, but also creatively develop the forms of realization of public ownership. This is the inevitable way for mankind to transcend the logic of capital and move towards an association of free men. In this process, the exploration of a mode of ownership that meets the characteristics of the times will have a profound impact on the future evolution of social formations.

5.2 Distribution System Innovation

Artificial intelligence, as the core force of the current technological revolution, is reshaping the global mode of production and distribution pattern at an unprecedented speed. Under the framework of capitalism, the rapid development of AI technology has not only exacerbated the contradiction between capital and labor, but also led to a series of new problems, such as structural unemployment, increased polarization between rich and poor, and data monopoly. (Srnicek, Nick, 2023) Marx profoundly pointed out in Capital that the distribution system is a direct reflection of the relations of production. As the productive forces continue to leap forward, the relations of production are bound to face adjustments. Just as the industrial revolution gave birth to the factory system and wage labor system, the AI revolution is pushing the labor form to evolve in the direction of intelligent collaboration, which undoubtedly poses new challenges to the existing distribution system. It needs to actively explore the possibility of universal ownership of data resources, taking into account the Marxist principle of "socialization of the means of production". Through the implementation of measures such as data tax and revenue sharing, we can ensure the collective sharing of data, so that more people can benefit from the value of data. A good example is the EU's Data Governance Act, which requires enterprises to open up non-personal data to the public sector, providing institutional safeguards for the public utilization of data. In terms of distribution principles, the concepts of "adjusting according to demand" and "sharing according to contribution" should be introduced on the basis of "distribution according to labor". For example, an AI development fund can be set up to transform the dividends of technology into basic services for all people, so as to improve their quality of life. At the same time, we should also pay attention to the right to survival of replaced workers, such as Finland's pilot "universal basic income" is a useful attempt. In addition, the establishment of a mechanism for the participation of data elements in the distribution is also an important part of the innovative distribution system. The Chengdu Big Data Exchange Center allows personal data to be traded on a rights basis, which not only protects personal privacy, but also allows individuals to gain benefits from their own data.

5.3 Path to Comprehensive Human Development

Engels once emphasized that "the essence of man is the sum of all social relations." In the age of intelligence, we are faced with the new challenge of rebuilding the dialectical relationship of "human-technology-society". We need to free technology from the constraints of capital, so that it can truly become a bridge and link to expand the power of human nature. Taking China as an example, the significant increase in the density of industrial robots and the continuous progress of manufacturing automation level have greatly improved the production efficiency and created favorable conditions for shortening labor time. The four-day work system piloted in Sweden and the lifelong skills account established in Singapore are positive responses to the changes in employment patterns brought about by automation, aiming to support the career transition and personal development of workers. Against this backdrop, the shape of labor has also made a step-wise leap from manual labor to

mental labor to innovative labor. This requires us to restructure our education system to meet the needs of the new era. Finland has included AI ethics in the compulsory curriculum of primary and secondary schools, and China's 14th Five-Year Plan has clearly proposed to cultivate 2 million "AI + Industry" composite talents, all of which are important practices of educational innovation. As a matter of fact, AI is not an obstacle to the comprehensive development of human beings, but a "historical tool" to push human beings towards freedom and emancipation. The key lies in how to detach it from the logic of capital and embed it in the process of reconstructing socialist production relations. In order to do so, it needs to promote the development of a socially owned economy and focus on fostering a new type of worker with a critical consciousness and creative ability. Only in this way will we be able to truly realize what Marx described as "man's appropriation of his own comprehensive nature in a comprehensive way" in the era of intelligent civilization, opening a new chapter in human emancipation.

6. Conclusions

The artificial intelligence technology revolution is reshaping the socioeconomic structure at an unprecedented rate, with far-reaching and complex implications. In this process, if algorithms are over-commercialized and used as a tool for simply pursuing capital appreciation, they may exacerbate social inequality and class division, which to some extent reflects the risk of technological alienation. However, when technology is able to return to serving the overall well-being of society, intelligent machines are expected to become an important force in promoting labor efficiency and overall human development. Observing the practice of socialism with Chinese characteristics in the new era, as well as the strategies of other Western countries in dealing with the technological revolution, it can be found that through a series of innovative policies and practices, such as the optimization of the ownership structure of the means of production, the innovation of the distribution system, and the emphasis on the building of human capacity, society is actively exploring how to effectively manage and make use of the "double-edged sword" effect of the technological revolution. The society is actively exploring how to effectively manage and utilize the "double-edged sword" effect of the technological revolution. These efforts are aimed at balancing technological progress with social equity and ensuring social stability and sustainable development in a rapidly changing technological environment. These practices not only validate, to a certain extent, the insights of the principles of Marxist political economy on the relationship between technological progress and society, but also provide insights into how to actively respond to the challenges posed by technological change while grasping the opportunities it brings in the context of a new era through institutional innovation and strategic adjustments. Together, they promote the formation and development of a new form of human civilization and provide valuable experience for exploring a more equitable and sustainable development path. To summarize, the AI technology revolution has brought unprecedented challenges as well as nurtured great opportunities. The key lies in how we guide and shape the development path of the technology to ensure that it serves the common well-being and long-term interests of all humankind.

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Data-Driven User Experience Optimization: Practices and Insights from the E-Commerce Industry

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Abstract

In the fiercely competitive e-commerce market, user experience is a key factor that determines the success or failure of a platform. This paper takes the e-commerce platform of Shemanquban Supply Chain Co., Ltd. as the research object and explores how to optimize user experience through data analysis. The study focuses on the in-depth mining of user behavior data and proposes a multi-dimensional data-based user behavior analysis framework that can accurately identify the points for improving user experience. By optimizing page layout, interaction design, and employing technical means to shorten page loading time, the platform has significantly enhanced user satisfaction and page retention rate. Meanwhile, the implementation of a personalized recommendation system has increased user purchase conversion rate by 22%, significantly enhancing user stickiness. The results show that data-driven optimization strategies can significantly improve user experience and platform competitiveness, providing practical experience and theoretical support for user experience optimization in the e-commerce industry.

Keywords: data-driven, user experience optimization, e-commerce platform, user behavior analysis, page optimization, personalized services, conversion rate improvement, loading time optimization, A/B testing, data analysis framework, insights for the e-commerce industry, user satisfaction, interaction design

1. Introduction

1.1 Background

With the rapid development of Internet technology, the e-commerce industry has experienced explosive growth globally. However, intensified competition has posed unprecedented challenges for e-commerce enterprises. Against this backdrop, user experience has gradually become a decisive factor for the success or failure of e-commerce platforms. A good user experience can not only improve user satisfaction and loyalty but also effectively promote user conversion and word-of-mouth dissemination. Meanwhile, data-driven decision-making, as a scientific and efficient management approach, is increasingly valued by more and more e-commerce companies. By analyzing vast amounts of user data in depth, companies can accurately grasp user needs and thus continuously optimize user experience.

1.2 Research Purpose and Significance

This study aims to explore data-driven user experience optimization methods, taking the e-commerce platform of Shemanquban Supply Chain Co., Ltd. as a case to analyze its practical experience in data collection, analysis, and application, and to summarize a set of highly operational and theoretically sound optimization strategies. Through this study, it is hoped that insights and inspiration for user experience optimization can be provided to the e-commerce industry, helping more e-commerce companies enhance user experience and market competitiveness.

2. Literature Review

2.1 User Experience Theory

User experience refers to the subjective feelings and evaluations formed by users during the process of using a product or service, with its main components including usability, satisfaction, and loyalty. In the e-commerce field, research on user experience has gradually become a hot topic, with scholars exploring the factors influencing user experience and their optimization methods from different perspectives. However, existing studies are mostly qualitative analyses, lacking systematic quantitative research and practical applications.

2.2 Application of Data Analysis in E-Commerce

Data analysis is an important tool for modern e-commerce operations, mainly including descriptive analysis, diagnostic analysis, predictive analysis, and prescriptive analysis. In terms of user experience optimization, data analysis can help companies gain a deep understanding of user behavior patterns to formulate targeted improvement strategies. However, most e-commerce companies are still in the early stages of data analysis and have not fully utilized the value of data.

2.3 Limitations of Existing Research and Research Space

Despite existing research on user experience and the application of data analysis in e-commerce, there are some limitations. On the one hand, existing studies lack in-depth and broad data-driven optimization, with an absence of systematic theoretical frameworks and practical guidance. On the other hand, there are still gaps in user experience optimization research in the e-commerce industry, especially in the implementation and effect evaluation of data-driven optimization strategies. Therefore, this study aims to fill this gap and provide more practically valuable research findings for e-commerce companies.

3. Theoretical Framework of Data-Driven User Experience Optimization

Data-driven user experience optimization is a key strategy for modern e-commerce companies to enhance their competitiveness. This section will elaborate on the theoretical basis of data-driven decision-making, the multi-dimensional model of user experience optimization, and the process model of data-driven optimization to build a systematic theoretical framework to support the subsequent empirical research.

3.1 Theoretical Basis of Data-Driven Decision-Making

Data-driven decision-making is a decision-making model based on data analysis and evidence, emphasizing the revelation of hidden patterns and trends in complex phenomena through data to provide scientific basis for decision-making. Compared with traditional decision-making methods that rely on experience and intuition, data-driven decision-making has significant advantages: it is based on objective data, reducing the impact of subjective bias; it can dynamically adjust strategies to adapt to market changes; and its results can be verified and optimized through data analysis. In the e-commerce industry, data-driven decision-making can help companies accurately grasp user needs, optimize user experience, and thus enhance user satisfaction and platform competitiveness.

3.2 Theoretical Model of User Experience Optimization

User experience is a multi-dimensional concept that covers all aspects of user interaction with a product or service. A complete user experience model should include system-level aspects (such as performance, usability, and reliability), interaction-level aspects (such as navigation structure, button design, and feedback mechanisms), and emotional-level aspects (such as satisfaction, pleasure, and loyalty). Data-driven user experience optimization is realized through the following pathways: First, identify pain points in user experience through user behavior data (such as click-through rate, dwell time, and conversion rate) and feedback data (such as user reviews and ratings). Second,

based on the analysis results, determine the specific aspects that need optimization and formulate targeted strategies. Finally, verify the effectiveness of the optimization strategies through A/B testing and further adjust the optimization plan according to user feedback. This process emphasizes the objectivity of data and the scientific nature of analysis to ensure that optimization measures can accurately solve user problems and enhance overall experience.

3.3 Process Model of Data-Driven Optimization

The process of data-driven optimization is a systematic closed-loop process, including data collection, processing, analysis, application, and feedback mechanisms. First, data is collected through user behavior monitoring tools (such as Google Analytics and heat map tools) and user feedback channels (such as online surveys and customer service records). Second, the collected data is cleaned, organized, and transformed to ensure its accuracy and usability. Next, descriptive, diagnostic, and predictive analysis methods are used to extract key information from the data. Finally, based on the analysis results, optimization strategies are formulated and implemented, such as page layout adjustments, loading time optimization, and personalized recommendations. The feedback mechanism is a key link to ensure continuous improvement. By monitoring changes in user experience indicators in real-time, regularly collecting user feedback, and periodically evaluating the effectiveness of optimization, companies can continuously adjust optimization strategies to achieve continuous improvement in user experience.

4. Case Analysis of Shemanquban Supply Chain Co., Ltd. E-commerce Platform

Shemanquban Supply Chain Co., Ltd. (hereinafter referred to as "She Man Qu Ban") is a company focusing on e-commerce supply chain management, and its e-commerce platform has stood out in the fierce market competition. By adopting data-driven user experience optimization strategies, the platform has achieved significant business growth and user satisfaction improvement. This section will delve into how She Man Qu Ban optimizes user experience through data-driven methods, covering key aspects such as data collection and integration, user behavior analysis, page optimization, loading time optimization, and implementation of personalized services, and demonstrate the optimization effects through actual data and case studies.

4.1 Company and Platform Background

Founded in 2022, She Man Qu Ban is a high-tech enterprise integrating e-commerce operations, supply chain integration, and data analysis. Its e-commerce platform mainly sells home furnishings, fashion accessories, and health products, targeting mid-to-high-end consumer groups both domestically and internationally. The platform adopts a B2C model, combining big data analysis and artificial intelligence technologies to provide users with personalized shopping experiences. The user base of She Man Qu Ban is mainly composed of young white-collar workers and the middle class, who have high demands for product quality, shopping convenience, and personalized services. To meet these needs, She Man Qu Ban has invested substantial resources in user experience optimization, continuously enhancing the platform's competitiveness through data-driven methods.

4.2 Practices of Data-Driven Optimization

4.2.1 Data Collection and Integration: Building a Comprehensive Data Ecosystem

Data is the foundation for optimizing user experience. She Man Qu Ban has built a comprehensive data ecosystem to collect user data from multiple dimensions. The platform not only collects user behavior data (such as page views, clicks, and dwell time) and transaction data (such as purchase frequency, amount, and categories) but also obtains user preferences and emotional tendencies through user feedback channels (such as online surveys and customer service consultation records) and social media platforms (such as WeChat and Weibo). In addition, third-party tools (such as Google Analytics and heat map tools) are utilized to further enrich the data sources.

Data integration and cleaning are crucial steps to ensure data quality. She Man Qu Ban employs data warehouse technology to centrally store and manage data from different sources. Using ETL (Extract, Transform, Load) tools, the platform cleans, deduplicates, and standardizes the data to ensure its accuracy and consistency. For example, by removing invalid and duplicate data, the platform can more accurately analyze user behavior patterns.

Table 1. Data Sources and Integration

Data Source	Data Type	Monthly Data Volume	Monthly Cleaned Data Volume
User Behavior Data	Page views, clicks, dwell time	5 million	4.5 million
Transaction Data	Purchase frequency, amount, categories	2 million	1.8 million
User Feedback Data	Online surveys, customer service records	50,000	45,000
Third-Party Tools	Google Analytics, heat maps	3 million	2.7 million

Through this process, She Man Qu Ban has not only accumulated a vast amount of user data but also laid a solid foundation for subsequent in-depth analysis and optimization.

4.2.2 User Behavior Analysis Framework: Accurately Identifying Points for Improvement in User Experience

To accurately identify points for improvement in user experience, She Man Qu Ban has developed a multi-dimensional user behavior analysis framework. This framework integrates methods such as user path analysis, heat map analysis, and funnel modeling to comprehensively assess user behavior on the platform.

- **User Path Analysis** revealed that users spent an unusually long time on certain pages, indicating potential design issues or unclear information. For example, data showed that the average dwell time on the product detail page was 120 seconds, significantly higher than other pages. Upon in-depth analysis, it was found that the information architecture of the product detail page was overly complex, requiring users to scroll multiple times to find key information. Based on this finding, She Man Qu Ban optimized the product detail page by placing important information (such as product features, price, and reviews) at the top of the page, significantly reducing user operational costs.
- **Heat Map Analysis** uncovered user click and scroll behaviors on the page. The analysis showed that users paid more attention to promotional activities and recommended products at the top of the page, while the content at the bottom received less attention. Consequently, She Man Qu Ban adjusted the page layout, placing important information and recommended products in more conspicuous positions. They also optimized the visual design by adopting a cleaner interface style and clearer fonts, enhancing the overall visual experience for users.
- **Funnel Modeling Analysis** was used to evaluate the conversion process from browsing to purchasing. Data indicated a low conversion rate at the shopping cart stage, at only 25%, suggesting that the shopping cart page might have complex operations or unclear information. By optimizing the interaction design of the shopping cart page and adding clear prompts and convenient operation buttons, the platform increased the shopping cart conversion rate to 38%. This improvement not only enhanced user experience but also directly boosted sales. (Zimeo, E., Oliva, G., Baldi, F., & Caracciolo, A., 2013)

Table 2. User Behavior Analysis Results

Analysis Method	Problem Identified	Optimization Measures	Optimization Effect
User Path Analysis	Long dwell time on product detail page	Optimized information architecture, placed important information at the top of the page	20% reduction in page dwell time
Heat Map	Low attention to content at the bottom	Adjusted page layout, optimized	15% increase in user

Analysis	of the page	visual design	click-through rate
Funnel Modeling Analysis	Low conversion rate at the shopping cart stage	Optimized shopping cart page interaction design	13% increase in shopping cart conversion rate

4.2.3 Page Optimization Practices: Comprehensive Improvements from Layout to Interaction

Based on the results of user behavior analysis, She Man Qu Ban implemented a series of page optimization measures, covering comprehensive improvements in page layout and interaction design.

In terms of **page layout optimization**, the platform adjusted the information architecture by placing the most relevant content at the top of the page, reducing the number of times users needed to scroll. They also optimized the visual design by adopting a cleaner interface style and clearer fonts, enhancing the overall visual experience. For example, by placing the product recommendation module in a more conspicuous position on the homepage, users could quickly find products of interest, significantly increasing the page's attractiveness and user engagement.

Regarding **interaction design optimization**, the platform improved button design by increasing the clickable area, making it more suitable for mobile operations. They also enhanced the navigation bar design by adding search functionality and category filtering options, helping users find desired products more quickly. For instance, by optimizing the classification logic of the navigation bar, users could more intuitively locate target products, reducing search time and improving shopping efficiency.

To verify the optimization effects, She Man Qu Ban employed **A/B testing**. By comparing two different page layouts, the platform found that the optimized page reduced user dwell time by 20% and increased conversion rates by 15%. These results fully demonstrated the effectiveness of the optimization measures, providing a scientific basis for continuous improvement. (Srivastava, A., 2021)

Table 3. Page Optimization Effect Evaluation

Optimization Content	**Before Optimization**	**After Optimization**	**Improvement**
Page Dwell Time (seconds)	120	96	-20%
Page Conversion Rate (%)	12	16	+33.3%
User Satisfaction (%)	75	88	+17.3%

4.2.4 Loading Time Optimization: Technical Means and Performance Improvement

Page loading speed directly affects user experience. She Man Qu Ban employed various technical means to optimize loading times. First, the platform deployed a **Content Delivery Network (CDN)**, caching static resources on servers closer to users, significantly reducing loading times. Second, images were optimized by adopting the WebP format instead of traditional JPEG and PNG formats, increasing image loading speed by 40%. Additionally, page code was compressed and merged to reduce HTTP request counts and improve page response speed.

The performance optimization results showed that the platform's average page loading time was reduced from 3.5 seconds to 2.3 seconds, and user satisfaction increased by 20%. This improvement not only enhanced user experience but also significantly reduced user churn rates. By optimizing loading times through technical means, She Man Qu Ban successfully alleviated user anxiety during page loading, improving the overall shopping experience.

4.2.5 Implementation of Personalized Services: Enhancing User Stickiness and Conversion Rates

To further enhance user experience, She Man Qu Ban developed a personalized recommendation system, employing collaborative filtering and content-based recommendation algorithms to suggest products that align with users' interests and purchase histories. For example, the system would recommend related product

combinations based on users' browsing and purchasing of home furnishings. Through personalized recommendations, users could quickly find products of interest, improving their shopping experience.

The platform also adjusted the homepage layout according to user preferences, featuring products and promotions that users might be interested in. For instance, for users who frequently purchased health products, the platform would highlight relevant health products and promotional activities on the homepage. Through these personalized services, users felt more valued and understood by the platform, significantly enhancing user stickiness.

Table 4. Personalized Services Effect Evaluation

Indicator	Before Optimization	After Optimization	Improvement
User Purchase Conversion Rate (%)	12	16	+33.3%
User Stickiness (Average Weekly Visits)	3	4.5	+50.0%
User Satisfaction (%)	75	88	+17.3%

4.3 Optimization Effect Evaluation and Analysis

To comprehensively evaluate the optimization effects, She Man Qu Ban conducted data analysis from multiple dimensions. User satisfaction survey results showed that user satisfaction with the shopping experience increased from 75% to 88%. Page retention rate increased by 15%, and the bounce rate decreased from 30% to 20%. User purchase conversion rate increased from 12% to 16%, and repurchase rate increased from 25% to 35%. These data fully demonstrated the effectiveness of the data-driven optimization strategies. (Ekşioğlu, M., Varol, S., & Duman, Y., 2015)

By analyzing user reviews and social media feedback, the platform found that users highly praised the optimized page layout and personalized recommendations. Meanwhile, the platform's market performance also improved, with monthly sales growth reaching 20% and user growth rate reaching 18%. These results indicated that data-driven optimization not only enhanced user experience but also directly promoted business growth.

Table 5. Comprehensive Optimization Effect Evaluation

Indicator	Before Optimization	After Optimization	Improvement
Page Loading Time (seconds)	3.5	2.3	-34.3%
User Satisfaction (%)	75	88	+17.3%
Page Retention Rate (%)	65	80	+23.1%
Bounce Rate (%)	30	20	-33.3%
Purchase Conversion Rate (%)	12	16	+33.3%
Repurchase Rate (%)	25	35	+40.0%
Monthly Sales Growth Rate (%)	-	20	-
User Growth Rate (%)	-	18	-

From the above data, it can be seen that data-driven optimization strategies have achieved significant results in enhancing user experience and business growth. She Man Qu Ban has successfully improved the platform's competitiveness and user satisfaction through precise data analysis and optimization practices.

5. Insights and Strategy Recommendations for Data-Driven Optimization

5.1 Insights from Data-Driven Optimization

1) Necessity and Advantages of Data-Driven Optimization

In the e-commerce industry, user experience is a decisive factor for the success or failure of a platform. Data-driven optimization strategies,

through scientific analysis of user behavior and preferences, can accurately identify problems and provide solutions. Compared with traditional decision-making methods that rely on experience and intuition, data-driven optimization has significant advantages: it is based on objective data, reducing the impact of subjective bias; it can dynamically adjust strategies to adapt to market changes; and its results can be verified and optimized through data analysis. In the fiercely competitive e-commerce market, data-driven optimization can not only enhance user experience but also strengthen the platform's market competitiveness.

2) Importance of Multi-Dimensional Data Analysis

User experience is a multi-dimensional concept, covering various aspects such as system performance, interaction design, and emotional experience. Through multi-dimensional data analysis, e-commerce companies can gain a comprehensive understanding of user needs and behavior patterns. For example, user path analysis can reveal the user's behavior process on the platform, heat map analysis can show the user's attention to page elements, and funnel modeling analysis can evaluate the conversion process from browsing to purchasing. Multi-dimensional data analysis can not only help companies accurately identify problems but also provide targeted optimization suggestions, thereby continuously improving user experience.

3) Necessity of Continuous Optimization and Feedback Mechanisms

User experience optimization is an ongoing process that requires continuous collection of user feedback and adjustments. By establishing feedback mechanisms, companies can promptly understand user satisfaction with optimization measures and further improve them based on feedback. For example, through user satisfaction surveys, online reviews, and customer service consultation records, companies can collect real user feedback to identify potential problems and adjust optimization strategies in a timely manner. Continuous optimization and feedback mechanisms not only enhance user experience but also strengthen users' trust and loyalty to the platform.

5.2 Strategy Recommendations for Data-Driven Optimization

1) Best Practices for Data Collection and Management

Data is the foundation for optimizing user experience, so data collection and management are crucial. E-commerce companies should use multiple data sources, including user behavior data, transaction data, and feedback data, and utilize third-party tools (such as Google Analytics and heat map tools) to further enrich data sources. Data integration and cleaning are key steps to ensure data quality. Companies should use data warehouse technology to centrally store and manage data from different sources and use ETL tools to clean, deduplicate, and standardize the data. In addition, companies should also establish data security mechanisms to protect user privacy and data security.

2) Methods for User Behavior Analysis Optimization

User behavior analysis is the core link in optimizing user experience. Companies should develop a multi-dimensional user behavior analysis framework, integrating methods such as user path analysis, heat map analysis, and funnel modeling, to comprehensively assess user behavior on the platform. By analyzing user behavior data, companies can accurately identify points for improving user experience and formulate targeted optimization strategies. For example, by identifying long dwell times on the product detail page through user path analysis, companies can optimize the page's information architecture by placing important information in more conspicuous positions, thereby reducing user operational costs.

3) Improvement Strategies for Page and Interaction Design

Page layout and interaction design directly affect user experience. Companies should optimize page layout and interaction design based on user behavior analysis results. For example, by adjusting the page layout to place the most relevant content at the top, reducing the number of times users need to scroll; optimizing the visual design by adopting a cleaner interface style and clearer fonts to enhance the visual experience. In terms of interaction design, companies should increase the clickable area of buttons to make them more suitable for mobile operations; enhance the navigation bar design by adding search functionality and category filtering options to

help users find desired products more quickly.

4) Technical Means for Loading Time Optimization

Page loading speed is an important indicator of user experience. Companies should use various technical means to optimize loading times, including deploying a Content Delivery Network (CDN), optimizing images (such as using the WebP format instead of traditional JPEG and PNG formats), and compressing and merging page code to reduce HTTP request counts. Through these technical means, companies can significantly improve page loading speed, reduce user waiting time, and thereby enhance user experience.

5.3 Future Development Trends and Challenges in the E-Commerce Industry

1) Data Privacy and Security Issues

With the widespread application of data-driven optimization, data privacy and security issues are becoming increasingly prominent. E-commerce companies need to establish comprehensive data security mechanisms to protect user privacy and data security. For example, companies should use encryption technology to protect user data and establish data access permission management mechanisms to prevent data leakage and misuse. At the same time, companies should also comply with relevant laws and regulations, such as the Cybersecurity Law and the Data Protection Law, to ensure the legality and compliance of data usage.

2) Application Prospects of New Technologies (e.g., Artificial Intelligence and Big Data)

Artificial intelligence and big data technologies offer new opportunities for the e-commerce industry. Through artificial intelligence technology, companies can achieve more accurate user behavior prediction and personalized recommendations. Through big data technology, companies can process and analyze vast amounts of user data to achieve more accurate market positioning and user demand analysis. In the future, e-commerce companies should actively explore the application of artificial intelligence and big data technologies to enhance user experience and operational efficiency.

3) User Experience Optimization in Cross-Border E-commerce

Cross-border e-commerce is an important development direction for the e-commerce industry, but user experience optimization in this area faces many challenges. Users in different countries and regions have different cultural backgrounds and consumption habits. Companies need to optimize page layout, language settings, and payment methods based on local market characteristics. In addition, cross-border e-commerce also faces issues such as logistics delivery, after-sales service, and tariffs. Companies need to optimize cross-border logistics delivery processes and improve after-sales service quality through data-driven methods to enhance user experience.

6. Conclusions

6.1 Research Summary

This paper takes the e-commerce platform of Shemanquban Supply Chain Co., Ltd. as the research object and deeply explores data-driven user experience optimization strategies. The results show that through data collection and integration, user behavior analysis, page optimization, loading time optimization, and implementation of personalized services, e-commerce companies can significantly enhance user experience and platform competitiveness. Data-driven optimization not only improves user satisfaction and conversion rates but also strengthens users' trust and loyalty to the platform.

6.2 Research Limitations and Future Outlook

Despite the achievements of this study, there are still some limitations. For example, the research sample scope is limited, mainly focusing on the e-commerce platform of Shemanquban Supply Chain Co., Ltd., which may not fully reflect the current status of the entire e-commerce industry. In addition, the data sources mainly rely on internal company data and third-party tools, which may have data limitations. Future research can further expand the sample scope to include more types of e-commerce platforms. At the same time, exploring the application of new technologies (such as artificial intelligence and big data) in user experience optimization can provide more comprehensive theoretical support and practical guidance for e-commerce companies.

6.3 Significance for the E-Commerce Industry

Data-driven optimization strategies play an important role in the development of the

e-commerce industry. Through precise data analysis and optimization practices, e-commerce companies can better meet user needs, enhance user experience, and thereby strengthen market competitiveness. The research findings of this paper not only provide practical experience and theoretical support for e-commerce companies but also offer new ideas and methods for user experience optimization in the e-commerce industry. In the future, with the continuous development of artificial intelligence and big data technologies, e-commerce companies should actively explore the application of new technologies to enhance user experience and operational efficiency and promote the sustainable development of the e-commerce industry.

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Navigating the Era of the Feeling Economy: Labor Market Shifts, Industrial Structure Transformations, and Strategic Policy Interventions

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Abstract

Against the backdrop of the rapid development of AI, this study delves into how the "Feeling Economy" reshapes the labor market, industries, and consumer markets, and what challenges it brings. The main results highlight that the labor market is evolving from a "Thinking Economy" to a "Feeling Economy". Demand for data analysis and basic computation is decreasing, while high-cognitive tasks are on the rise. This shift transforms industries via human-AI collaboration, hyper-personalization, and emotional branding. Consumer markets increasingly prioritize emotional connections. Nevertheless, challenges such as structural unemployment and data privacy issues surface. Thus, the government should conduct skills training, safeguard privacy, and regulate AI, and suppliers should enhance emotional value.

Keywords: labor market, economic industrial structure, consumer market

1. Introduction

Feeling economy is an era with an economy system where emotional value and soft skills are prioritized and employment is mostly attributed to feeling tasks. Current economic system is experiencing a shift from thinking economy to feeling economy, which is at its preliminary stage and involves a change in people's social roles. For example, the use of service robot Connie in Hilton hotel illustrates the increasing need for emotional values provided by robots. Specifically, individuals would turn to products with emotional values; firms that deal with feeling tasks would stand out as more job vacancies occur; and government, on the other hand, may enact laws to protect privacy and

prevent piracy while still competing for cutting-edge techniques.

1.1 Thesis Statement

The labor market is evolving due to AI, shifting focus from repetitive tasks to high cognitive roles that require empathy, creativity, and strategic thinking. This transformation impacts various sectors. The consumer market is evolving from a focus on utility and cost to emotional value and personalized services, with AI enhancing customer interactions in traditional industries and driving growth in emerging sectors like mental health tech. Nevertheless, the feeling economy presents challenges such as structural unemployment, data privacy risks, and legal disputes. To address these, governments can implement policies like skills training, privacy protection laws, and clarifying AI responsibilities. These measures aim to enhance data security, boost public trust, and establish a stable market environment, though they may require significant funding and time for effective implementation.

2. Changes of Labor Market

With the rapid development of the AI (Artificial Intelligence), a profound change has occurred in the mode and content of human's work. AI has almost possessed the capability to dispose most of the tasks that managed by the human labor in the nowadays. Thinking Economy, which includes the tasks required science, technology, engineering, and mathematics skills. Freeing from most logical and mechanical works, the world start marching to the age of Feeling economy, and the priority of humans works gradually shifts from repeated and computational tasks to high cognitive tasks that need the involvement of human empathy, emotional intelligence, communication skills, leadership, and interpersonal relationships.

2.1 Emotionally Driven Tasks

Human labor is irreplaceable in the works that require emotional responses. Attaching importance to the consumers' mental experiences, these jobs involve addressing complex human emotions and providing personalized support (Georgieff & Hyee, 2022). In the fields of high-end medical care, luxury goods sales, and private consultants, etc., users need not only the product or service itself, but also emotional recognition and personalized attention. At the same time, the field of mental health requires professionals to have an in-depth understanding of the patient's emotional state, living background, cultural differences, etc. AI can only be used as a tool to help but cannot give humans real emotional support and understanding (White, Katherine, Rishad Habib, & David J. Hardisty, 2019: 22).

2.2 'High-Level' Routine Tasks

As AI reduces conventional tasks, the demand for human labor that can manage 'high-level' routine tasks becomes greater. As AI exposure increases, the possibility of performing teaching and training tasks, which are defined as 'high-level' routine tasks, boosted in a higher percentage, which is larger than the initial change in the possibility of performing the task between 2006 and 2018 (Gathmann, Grimm, & Winkler, 2024). Professions that involve intricate decision-making and problem-solving, such as management, scientific research, and technical trades, require a depth of understanding and adaptability that AI has yet to achieve.

2.3 Strategic and Creational Construction

Jobs in fields like marketing, product development, and strategic planning demand creativity, innovation, and the ability to devise unique solutions—areas where human intuition and experience are paramount. For instance, whether it is industrial design, graphic design, or music and literature creation, AI can only provide a general inspiration framework but not specific creative details and conceptual construction (White, Katherine, Rishad Habib, & David J. Hardisty, 2019: 22). Based on such findings, a prediction about the future global labor market in the age of Feeling Economy can be inferred.

2.4 Comparative Analysis

Figure 1 and Figure 2 show the change of labor market with different skills requirements. From the demand perspective, the demand for labor forces that specifies at data analysis and basic computation will decrease. On the other hand, the labor skilled in 'high-level' routine tasks, strategic and creational construction, and emotionally driven tasks, which can be identified as high cognitive tasks, will be intensively demanded. On the supply side, the supply of labor skilled in high cognitive tasks, a substitute for the previous kind of labor in production in the labor market, will eventually increase. Vice versa, the increase in the demand for the second type of labor will lead to a

decrease in the supply of data analysis and basic computation labor. Consequently, there will be a growth in the structural unemployment because people cannot timely change their analytic and computation skills that will be eliminated by AI to high cognitive skills. Also, the labor may even be discouraged and feel difficult to change the content of their works, leading to a decrease in the labor participation rate.

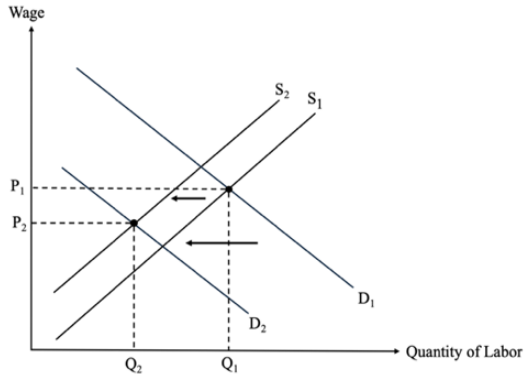

Figure 1. The labor market of data analysis and basic computation

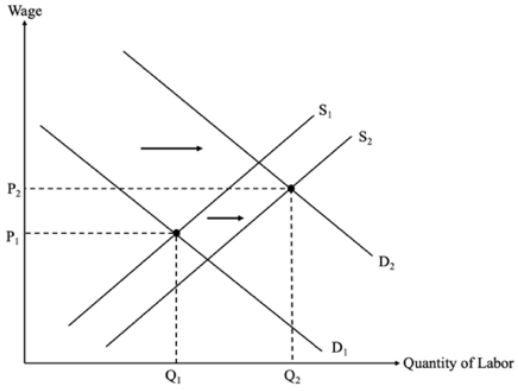

Figure 2. The labor market of high-level routine tasks, strategy, creativity, and emotional work

3. Changes of Economic Industrial Structure

Feeling economy will bring revolutionary changes to industrial structure. First, human-machine collaboration would be standardized in production process, during which AI handles analytical tasks and humans focus on creativity and emotional needs. This specialization provides companies with larger profit margin given the lower costs and ensures the longevity of a company. Second, real-time adaptation allows for hyper-personalization and shorter production cycles to meet instant emotional demands. Third, supply chains would be rationalized by emotional data for optimization. For instance, appliance makers may invest some of their inputs and materials into improving their products to meet customers' pain points. To be more specific, the first industry primarily involves physical and repetitive tasks performed by workers like agriculture and mining. Labors are forced to focus on areas where human perspective is still invaluable. For example, AI tools like soil health monitors are being used by farmers to focus on higher efficiency (McKinsey Global Institute) and storytelling branding like Patagonia's "Earth-Friendly Wool" campaign is adopted to highlight eco-friendly practices (Patagonia). The secondary industry deals with mass production, which includes manufacturing and designing. The impacts on this industry are mainly manifest in the increasing demand for some customized goods. For example, automakers like Mini Cooper use AI-driven design tools for personal experience, fostering emotional attachment (Accenture). For the third industry, the most obvious ones are in psychological counseling and entertainment. For example, AI handles diagnostics, while doctors at institutions like Cleveland Clinic use empathy metrics to improve patient interactions (Cleveland Clinic).

4. Impact on Consumer Market

The focus of customers in the feeling economy are changing from utility value to emotional value (Carrie, 2024). As the emphasis of emotional value has been rising, customers are wishing for more emotional connection with the services they are offered, like empathy and human touches. For some industries that highly rely on human resources, this could be easily adjusted, in contrary, automation may cause a little problem. As shown in Figure 3, the x-axis and the y-axis would be emotional value provided, and the cost (primarily labor costs). During feeling economy, customers crave for emotional value and that resulted in the increase in demand, increasing the cost of labor.

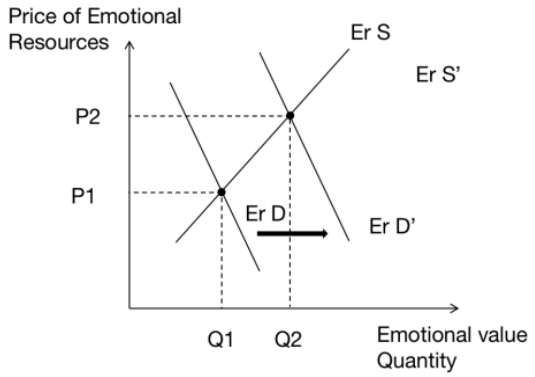

Figure 3. Market demand of emotional value

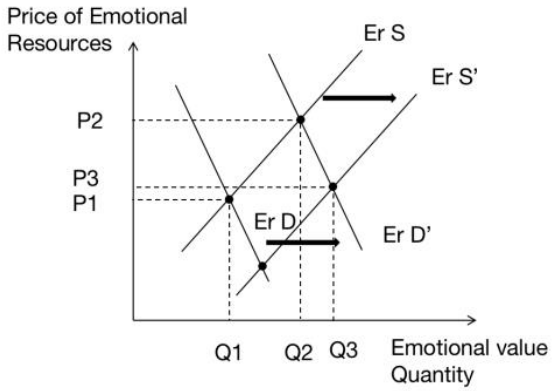

Figure 4. Change of market with emotional value

5. Impact on Traditional Industries and Emerging Industries

5.1 Impact on Traditional Industries

In traditional industries, AI is reshaping the interactions between supplier side and consumer side, making it more human-like. With the calculation and analytic abilities that AIs have, they can easily carry out and summarize customers' preferences and information and provide possible solutions to human workers that can target their "weaknesses" and make them feel satisfied. Upon that, upgrading the chat box system is also a strategy that has been adapted by some companies. With the support of AI behind it, some chat boxes have also been equipped with human-mimicked voice, creating a sense of comfortableness for customers using it.

5.2 Rise of Emerging Industries

From the perspective of emerging market, the mental health and wellness tech industry are rising fast. For example, there are apps popping out for monitor the stability of mental wellness like Moodpath and Wysa. In addition, devices with new functions are coming out quick, watches now can not only measure physical status, but also psychological states through biometric data. In all ways, new emerging industries are putting customers' preferences and emotional importance as their products' priority. Figure 4 implies that not only the demands are increasing, but the supplies are also increasing as well. Although the equilibrium price is uncertain, there is one thing to be sure about, the quantity of emotional value offered to the public must be increasing, following up the trend of the feeling economy.

6. Policy Recommendations and Cost-Benefit Analysis

In the era of feeling economy, with the rapid development of artificial intelligence technology and the rise of emotion-driven consumption, multiple levels of society are undergoing profound changes, which has also resulted in a series of problems and challenges.

6.1 Structural Unemployment

Firstly, structural unemployment caused by skills mismatch will intensify, especially those groups that cannot adapt to new high-skill industries and may fall into long-term unemployment. Therefore, the government can adopt supply-side policies, provide some skills training, and provide personalized counseling for workers with different backgrounds and different emotional perceptions. At the same time, the government can encourage companies to use AI to promote corporate transformation by providing subsidies and tax reduction policies. And the government should promote innovative reforms and reduce production costs. The advantage of this kind of policy is that it can fundamentally solve the problem (Wang, 2024). However, it depends on whether the government has enough funds for training.

6.2 Privacy Concern

Secondly, companies use big data and artificial intelligence technology to extensively collect and analyze users' emotional data to conduct precise personalized marketing. Although this approach improves the consumer experience, it also increases the risk of data leakage and may even violate personal privacy rights (Wang & Li, 2021). Therefore, the government should protect the privacy rights of consumers through laws,

such as EU's Digital Services Act (DSA) (European Commission, 2025), which can also enhance public trust in the emotional economic model and maintain the normal order of the market. The authoritative implementation of the law enables companies to strictly abide by it and protects consumer rights and interests to a certain extent. But at the same time, there is an indirect conflict between consumer rights and the development of technology companies. There is a conflict between the rights and interests and the development prospects of the enterprise, and the formulation and implementation of laws and regulations also take time.

6.3 Misuse of AI

Thirdly, once AI is being misused, legal disputes in the market will increase. At the same time, people's ability to screen information will be reduced, and creativity and critical thinking skills will gradually deteriorate (Qiliang Yuan, 2023; World Bank, 2017). Therefore, the government should continue to deepen the traceability and transparency of AI systems and implement hybrid decision-making in certain key areas. In the long run, it can produce positive benefits in improving the security, transparency, and fairness of AI technology, and help establish a more stable market environment. But it also adds additional burdens of development, oversight, review and accountability.

7. Conclusion

In conclusion, the advent of Feeling Economy signifies a shift in global economic systems: While it fosters innovation and personalized consumer experiences, it also exacerbates structural unemployment, threatens data privacy, and complicates legal landscapes. Governments must implement strict policies, including training for displaced workers, robust privacy protection laws, and regulations for AI applications. Without these regulations and measures, feeling economy is nothing but an utopia. The future hinges on balancing innovation with empathy, creating economies where emotional and economic value bind together sustainably.

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