

Chapter 4

Research Result

This chapter presents the results of data analysis and data interpretation based on the research objectives.

1. Analysis of Survey Results for the General Consumers
2. Analysis of Survey Results for the Consumer behavior smart door locks
3. Analysis of Survey Results for the SCOR Model Supply Chain
4. Analysis of Survey Results for the Firm Performance
5. Comments from respondents on the issue
6. Analysis of hypothesis test results
7. Analysis of the results of interviews with smart door lock companies

Analysis of Survey Results for the General Consumers

A total of 400 questionnaires were randomly distributed to general consumers to understand their preferences and purchasing habits regarding smart door locks. Out of the distributed questionnaires, 388 valid responses were collected and analyzed.

In this section, we present the background information collected from the general consumer survey questionnaire. The data includes demographic information such as age, gender, occupation, and residential status.

Table 4.1 Demographic Information of Survey Participants

Demographic	Number of Respondents	Percentage
Age Group		
18-25 years old	80	20.62
26-35 years old	120	30.93
36-45 years old	100	25.77
46 and above	88	22.68
Total	388	100

Table 4.1 Demographic Information of Survey Participants (cont.)

Demographic	Number of Respondents	Percentage
Gender		
Male	180	46.39
Female	208	53.61
Total	388	100
Occupation		
Student	47	12.11
Worker/employee	150	38.66
Freelancer	53	13.66
Business Owner	80	20.62
Other	58	14.95
Total	388	100

From Table 4.1 Demographic Information of Survey Participants. The age distribution of the respondents indicates a relatively diverse sample. The largest age group falls within the 26-35 years old range, accounting for 30.93% of the total respondents. This suggests that individuals in their late twenties and early thirties are well-represented in the study. The distribution also shows a relatively even spread across the other age groups, with those aged 18-25, 36-45, and 46 and above contributing 20.62%, 25.77%, and 22.68% respectively.

The gender distribution of the respondents shows a balanced representation, with a slight majority of female respondents at 53.61% and male respondents at 46.39%. This gender balance suggests that the study's findings are likely to reflect perspectives from both male and female participants, contributing to a more comprehensive analysis of the research topic.

The occupation breakdown reveals interesting insights into the professional diversity of the sample. The largest occupational group is workers/employees, representing 38.66% of the respondents. This suggests that a significant portion of the sample is employed in traditional job roles. Additionally, the presence of students at 12.11% implies a portion of younger participants who are likely still pursuing education. The presence of freelancers (13.66%), business owners (20.62%), and individuals with other occupations (14.95%) showcases a variety of professional backgrounds within the sample.

Analysis of Consumer Behavior Smart Door Locks Results

In this section, we present the results of the consumer behavior survey related to smart door locks. The data includes information on purchasing habits, preferences, and satisfaction levels.

Table 4.2 Consumer Behavior on Smart Door Locks

Question	Option	Number of Respondents	Percentage
4. Where do you purchase smart door locks?	Residential	197	50.77
	Commercial	152	39.18
	Other	39	10.05
5. If you are considering purchasing a smart door lock product, which features are most important to you? (Multiple choices possible)	Card unlocking	108	27.84
	Fingerprint unlocking	312	80.41
	Password unlocking	369	95.10
	Bluetooth unlocking	198	51.03
	Remote unlocking	241	62.11
	Anti-Pry Alarm	276	71.13
	Security level	252	64.95
	Automatic locking	287	73.97
	Remote control and monitoring	321	82.73
Other	56	14.43	
6. What are the most important factors in your decision to purchase smart door locking products? (multiple choice possible)	Functionality	355	91.49
	Price point	349	89.95
	Brand recognition	288	74.23
	Product quality	362	93.30
	Customer service	348	89.69
	User experience	335	86.34
	Other	23	5.93
7. How often do you purchase smart door locks?	Once a year or less	57	14.69
	Once or twice a year	15	3.87
	One to three times in two	73	18.81
	Once in three years and more	243	62.63

Table 4.2 Consumer Behavior on Smart Door Locks (cont.)

Question	Option	Number of Respondents	Percentage
8. What is the main reason for replacement?	Aging product damage	102	26.29
	Want to use more advanced	281	72.42
	Other	5	1.29
9. What are your considerations for smart door lock security factors?	Necessity	9	2.32
	Security first	241	62.11
	Ease of use only	138	35.57
10. In your opinion, what is the most reasonable price range for smart door lock products? (Single choice)	Less than 500 RMB	78	20.10
	500-1000 RMB	169	43.56
	1000-2000 RMB	96	24.74
	2000-3000 RMB	33	8.51
	3000 RMB or more	12	3.09
11. Information sources and channels From which sources did you get the information about the smart door lock?	Internet search	38	9.79
	Hardware stores	52	13.40
	Home improvement stores	45	11.60
	E-commerce platform	61	15.72
	Trade shows or events	32	8.25
	Social media	81	20.88
	Friend or family referral	63	16.24
	Other	16	4.12

From Table 4.2 Consumer Behavior on Smart Door Locks, we can derive several detailed and insightful analyses. This table presents the responses of consumers to various questions related to their purchasing behavior, preferences, and considerations regarding smart door locks.

Question 4 inquires about the preferred purchase locations for smart door locks. The majority of respondents, accounting for 50.77%, indicated a preference for purchasing these locks for residential purposes. Meanwhile, 39.18% of respondents stated a preference for commercial use, and a smaller percentage of 10.05% chose "Other" as their preferred purchase location. This data suggests that a significant portion of consumers opt for smart door locks for their homes, while a considerable number also consider them for commercial purposes.

Moving on to Question 5, respondents were asked to select the most important features when considering purchasing a smart door lock product. It is worth noting that multiple choices were allowed for this question. The highest percentage, at 95.10%, indicated that password unlocking was the most important feature for them. Fingerprint unlocking followed closely behind, with 80.41% of respondents selecting it as a crucial feature. Other significant features included remote control and monitoring (82.73%), automatic locking (73.97%), and security level (64.95%). These results highlight the importance consumers place on convenience, security, and advanced technological features when choosing smart door locks.

Question 6 explores the factors that significantly influence consumers' decisions to purchase smart door locking products. The majority of respondents, comprising 93.30%, stated that product quality was the most important factor. Functionality (91.49%) and price point (89.95%) were also highly regarded by consumers. Brand recognition (74.23%), customer service (89.69%), and user experience (86.34%) were also considered important factors. Multiple choices were allowed for this question, indicating that consumers consider a combination of these factors when making their purchasing decisions. These findings suggest that consumers prioritize the quality and functionality of the product, as well as the reputation of the brand and the overall customer experience.

When asked about the frequency of their smart door lock purchases in Question 7, the responses varied. Only 14.69% of respondents reported purchasing these locks once a year or less, while 3.87% made purchases once or twice a year. A larger percentage, 18.81%, reported purchasing smart door locks between one and three times in two years. The majority of respondents, accounting for 62.63%, indicated that they made purchases once every three years or more. These statistics indicate that smart door lock purchases are not made frequently, with a significant portion of consumers opting for longer replacement cycles.

Question 8 aims to identify the main reasons for replacing smart door locks. The responses reveal that 72.42% of respondents replaced their locks to utilize more advanced features, while 26.29% cited aging product damage as their primary reason. Only a small percentage of 1.29% selected "Other" as their main reason for replacement. This data suggests that consumers are driven by the desire for technological advancements and improved functionality when replacing their smart door locks.

In Question 9, respondents were asked to provide their considerations for smart door lock security factors. The majority, at 62.11%, prioritized security above all

other factors. A smaller percentage of 35.57% indicated that ease of use was their primary consideration, while only 2.32% considered necessity as the most important factor. These results emphasize the significance consumers place on security when selecting smart door locks.

Moving on to Question 10, respondents were asked to select the most reasonable price range for smart door lock products. The highest percentage, at 43.56%, chose the price range of 500-1000 RMB. This was followed by 24.74% of respondents selecting the price range of 1000-2000 RMB. The remaining options, including less than 500 RMB (20.10%), 2000-3000 RMB (8.51%), and 3000 RMB or more (3.09%), received comparatively lower percentages. These findings indicate that consumers tend to opt for mid-range price options when purchasing smart door locks.

Lastly, Question 11 explores the sources from which consumers obtain information about smart door locks. The highest percentage, at 20.88%, indicated that they rely on social media for information. This was followed closely by e-commerce platforms (15.72%) and friend or family referrals (16.24%). Other sources, such as internet search (9.79%), hardware stores (13.40%), home improvement stores (11.60%), and trade shows or events (8.25%), received lower percentages. These results suggest that consumers heavily rely on digital platforms and personal recommendations when seeking information about smart door locks.

In conclusion, the analysis of Table 4.2 provides valuable insights into consumer behavior regarding smart door locks. The findings indicate that consumers primarily purchase these locks for residential purposes and prioritize features such as password unlocking, fingerprint unlocking, and remote control and monitoring. Factors such as product quality, functionality, and price point significantly influence their purchase decisions. Security is a paramount consideration, and consumers tend to replace their locks to access more advanced features. The most reasonable price range falls within 500-1000 RMB, and consumers rely heavily on social media and e-commerce platforms for information.

Analysis of SCOR Model Results for Smart Door Lock Supply Chain

The SCOR model is a widely used framework for analyzing and improving supply chain performance. It provides a comprehensive structure that allows organizations to assess their supply chain processes and identify areas for improvement. This essay aims to analyze the results of a questionnaire conducted

using the SCOR model in order to gain insights into the performance of different stages within the supply chain.

Table 4.3 Analysis of SCOR Model Overall Findings for Smart Door Lock Supply Chain

Category	Question	Average	Standard Deviation	Interpret	Ranking
Planning	1	4.00	0.70	High	2
	2	3.90	0.63	Moderate	3
	3	4.10	0.63	High	1
Sourcing	4	3.80	0.63	Moderate	2
	5	4.10	0.45	High	1
	6	3.80	0.71	Moderate	3
Make/Production	7	4.10	0.31	High	1
	8	3.80	0.63	Moderate	3
	9	4.00	0.45	High	2
Deliver	10	3.90	0.55	Moderate	3
	11	4.10	0.63	High	1
	12	4.00	0.45	High	2
Return	13	3.90	0.45	Moderate	2
	14	3.90	0.63	Moderate	3
	15	4.00	0.63	High	1
Total	15	3.96	0.57	High	

From Table 4.3 Analysis of SCOR Model Findings for Smart Door Lock Supply Chain, the results overall indicate that the opinions were at a high level. The mean score for all the questions combined is 3.96, with a standard deviation of 0.57. When considering each item by ordering the mean from the highest to the lowest value, it appears that Planning Question 3 has the highest average score of 4.10, indicating a high level of interpretation. Make/Production Question 7 also received a high average score of 4.10, while Deliver Question 11 and Return Question 15 obtained average scores of 4.10 and 4.00 respectively, indicating a high level of interpretation. Sourcing Question 5 and Return Question 15 both received an average score of 4.00, placing them in the second ranking position. The remaining questions received average scores between 3.80 and 3.90, indicating a moderate level of interpretation.

Table 4.4 Analysis of SCOR Model the results Planning

Category	Average	Standard Deviation	Interpret	Ranking
Planning				
1. Our company has clear production plans that effectively account for demand fluctuations and supply chain constraints.	4.00	0.70	High	2
2. Our company always meets its delivery commitments in a timely manner.	3.90	0.63	Moderate	3
3. Our company has efficient and effective communication methods with customers to keep them informed of changes.	4.10	0.63	High	1
Total	4.00	0.65	High	

From Table 4.4 the analysis of the SCOR Model in the planning category reveals the following findings: Planning Overall, the opinions were at a high level. The mean was 4.00. When considering each item, it was found that Question 1 had a high mean of 4.00, Question 2 had a moderate opinion, a mean of 3.90, and Question 3 had a high mean of 4.10.

Table 4.5 Analysis of SCOR Model the results Sourcing

Category	Average	Standard Deviation	Interpret	Ranking
Sourcing				
4. Our company has a rigorous supplier selection process based on quality, reliability and other meaningful criteria.	3.80	0.63	Moderate	2
5. Our company regularly reviews the performance of its suppliers to ensure ongoing supplier excellence.	4.10	0.45	High	1

Table 4.5 Analysis of SCOR Model the results Sourcing (cont.)

Category	Average	Standard Deviation	Interpret	Ranking
6. Our company has efficient communication methods with suppliers to foster a close working relationship.	3.80	0.71	Moderate	3
Total	3.90	0.60	Moderate	

From Table 4.5 the analysis of the SCOR Model in the sourcing category reveals the following findings. Sourcing Overall, the opinions were at a moderate level. The mean score was 3.90. When considering each item, it was found that Question 4 had a moderate mean score of 3.80. Question 5 had a high opinion, with a mean score of 4.10, and Question 6 had a moderate mean score of 3.80.

Table 4.6 Analysis of SCOR Model the results Make/Production

Category	Average	Standard Deviation	Interpret	Ranking
Make/Production				
7. Our company has efficient production processes that minimize waste and optimize resource utilization.	4.10	0.31	High	1
8. Our company regularly implements best practices within the production process.	3.80	0.63	Moderate	3
9. Our company has strong quality controls in place to minimize product defects.	4.00	0.45	High	2
Total	4.00	0.46	High	

From Table 4.6 the analysis of the SCOR Model in the make/production category reveals the following findings. Make/Production Overall, the opinions were at a high level. The mean score was 4.00. When considering each item, it was found that Question 7 had a high mean score of 4.10. Question 8 had a moderate opinion, with a mean score of 3.80, and Question 9 had a high mean score of 4.00.

Table 4.7 Analysis of SCOR Model the results Deliver

Category	Average	Standard Deviation	Interpret	Ranking
Deliver				
10. Our company has systematized processes for delivering products to customers.	3.90	0.55	Moderate	3
11. Our company has developed reliable inventory management systems for efficiently managing inventory levels.	4.10	0.63	High	1
12. Our company has dependable communication methods with customers to keep them informed of changes to delivery schedules.	4.00	0.45	High	2
Total	4.00	0.54	High	

From Table 4.7 the analysis of the SCOR Model in the deliver category reveals the following findings. Deliver Overall, the opinions were at a high level. The mean score was 4.00. When considering each item, it was found that Question 10 had a moderate mean score of 3.90. Question 11 had a high opinion, with a mean score of 4.10, and Question 12 had a high mean score of 4.00.

Table 4.8 Analysis of SCOR Model the results Return

Category	Average	Standard Deviation	Interpret	Ranking
Return				
13. Our company has an efficient and user-friendly return process for customers.	3.90	0.45	Moderate	2
14. Our company has clear policies and procedures for handling returns and after-sales service.	3.90	0.63	Moderate	3
15. Our company prioritizes customer satisfaction in our returns management processes.	4.00	0.63	High	1
Total	3.93	0.57	Moderate	

From Table 4.8 the analysis of the SCOR Model in the return category reveals the following findings. Return Overall, the opinions were at a moderate level. The mean score was 3.93. When considering each item, it was found that both Question 13 and Question 14 had a moderate mean score of 3.90. Question 15 had a high mean score of 4.00.

Analysis of Survey Results on the Impact of Smart Door Lock Supply Chain Management on Business Performance

Table 4.9 Impact Overall of Smart Door Lock Supply Chain Management on Firm Performance

Category	Question	Average	Standard Deviation	Interpret	Ranking
Flexibility	16	4.06	0.92	High	1
	17	3.80	0.89	Moderate	2
	18	3.64	0.98	Moderate	3
Responsiveness	19	4.06	0.80	High	1
	20	3.80	0.77	Moderate	2
	21	3.68	0.89	Moderate	3
Cost	22	4.10	0.96	High	1
	23	3.74	0.92	Moderate	3
	24	3.90	0.77	High	2
Trust	25	3.96	0.89	High	1
	26	3.70	0.89	Moderate	3
	27	3.88	0.80	High	2
Assets	28	4.04	0.69	High	1
	29	3.78	0.92	Moderate	2
	30	3.62	0.74	Low	3
Total	15	3.85	0.87	High	

From Table 4.9 the analysis of the overall impact of Smart Door Lock Supply Chain Management on Firm Performance indicates that the opinions gathered from the respondents were generally positive. The mean overall score for the questions in the table is 3.85, with a standard deviation of 0.87. This suggests a moderate level of agreement among the respondents.

When considering each item by ordering the mean from the highest to the lowest value, it appears that the impact of smart door lock supply chain management on firm performance varies across different categories. Cost (Question 22) has the highest average score, indicating a high level of impact on firm performance. It is closely followed by assets (Question 28) and trust (Question 27), which also have significant positive impacts. Flexibility (Question 16) and responsiveness (Question 19) received middle-range average scores, implying moderate impacts on firm performance.

Table 4.10 Impact of Smart Door Lock Supply Chain Management on Firm Performance Item Flexibility

Category	Average	Standard Deviation	Interpret	Ranking
Flexibility				
16. Our company has a clear production plan that effectively considers demand fluctuations and supply chain constraints.	4.06	0.92	High	1
17. Our company is able to adjust and adapt to changes efficiently in our production processes.	3.80	0.89	Moderate	2
18. Our company demonstrates the ability to adapt to new challenges and changing market conditions.	3.64	0.98	Moderate	3
Total	3.80	0.93	Moderate	

From Table 4.10 the analysis of the impact of smart door lock supply chain management on firm performance in the flexibility category reveals the following findings. Flexibility Overall, the opinions were at a moderate level. The mean score was 3.80. When considering each item, it was found that Question 16 had a high mean score of 4.06. Question 17 had a moderate mean score of 3.80, and Question 18 had a moderate mean score of 3.64.

Table 4.11 Impact of Smart Door Lock Supply Chain Management on Firm Performance Item Responsiveness

Category	Average	Standard Deviation	Interpret	Ranking
Responsiveness				
19. Our company consistently fulfills its delivery commitments in a timely manner.	4.06	0.80	High	1
20. Our company has efficient and effective communication methods with customers to keep them informed of changes.	3.80	0.77	Moderate	2
21. Our company responds promptly to customer requests, changes, and inquiries.	3.68	0.89	Moderate	3
Total	3.80	0.82	Moderate	

From Table 4.11 the analysis of the impact of smart door lock supply chain management on firm performance in the responsiveness category reveals the following findings. Responsiveness Overall, the opinions were at a high level. The mean score was 3.80. When considering each item, it was found that Question 19 had a high mean score of 4.06. Question 20 had a moderate mean score of 3.80, and Question 21 had a moderate mean score of 3.68.

Table 4.12 Impact of Smart Door Lock Supply Chain Management on Firm Performance Item Cost

Category	Average	Standard Deviation	Interpret	Ranking
Cost				
22. Our company demonstrates efficiency in managing costs.	4.10	0.96	High	1
23. Our company effectively controls costs and offers competitive pricing.	3.74	0.92	Moderate	3

Table 4.12 Impact of Smart Door Lock Supply Chain Management on Firm Performance Item Cost (cont.)

Category	Average	Standard Deviation	Interpret	Ranking
24. Our company's cost structure is reasonable and supports achieving profitability goals.	3.90	0.77	High	2
Total	3.91	0.88	High	

From Table 4.12 the analysis of the impact of smart door lock supply chain management on firm performance in the cost category reveals the following findings. Cost Overall, the opinions were at a high level. The mean score was 3.91. When considering each item, it was found that Question 22 had a high mean score of 4.10. Question 23 had a moderate mean score of 3.74, and Question 24 had a high mean score of 3.90.

Table 4.13 Impact of Smart Door Lock Supply Chain Management on Firm Performance Item Trust

Category	Average	Standard Deviation	Interpret	Ranking
Trust				
25. Customers have a high level of trust in the reliability and integrity of our company.	3.96	0.89	High	1
26. Our company has established strong trust-based relationships with customers, suppliers, and partners.	3.70	0.89	Moderate	3
27. Our company consistently delivers on its promises and builds long-term partnerships.	3.88	0.80	High	2
Total	3.80	0.86	High	

From Table 4.13 the analysis of the impact of smart door lock supply chain management on firm performance in the trust category reveals the following findings. Trust Overall, the opinions were at a high level. The mean score was 3.80. When

considering each item, it was found that Question 25 had a high mean score of 3.96. Question 26 had a moderate mean score of 3.70, and Question 27 had a high mean score of 3.88.

Table 4.14 Impact of Smart Door Lock Supply Chain Management on Firm Performance Item Assets

Category	Average	Standard Deviation	Interpret	Ranking
Assets				
28. Our company possesses high-quality and valuable assets, including equipment, technology, and intellectual capital.	4.04	0.69	High	1
29. Our company effectively manages and leverages its assets to support business growth and innovation.	3.78	0.92	Moderate	2
30. Our company has a clear asset planning and development strategy to ensure long-term competitive advantage.	3.62	0.74	Low	3
Total	3.81	0.78	Moderate	

From Table 4.14 the analysis of the impact of smart door lock supply chain management on firm performance in the assets category reveals the following findings. Assets Overall, the opinions were at a moderate level. The mean score was 3.81. When considering each item, it was found that Question 28 had a high mean score of 4.04. Question 29 had a moderate mean score of 3.78, and Question 30 had a low mean score of 3.62.

Comments from Respondents on the Issue

What do smart door lock supply chain management affecting firm performance?

Supply chain management plays a vital role in determining the overall performance of a company.

1. Efficient Inventory Management:

One of the key aspects of supply chain management is inventory management. Smart door lock manufacturers need to ensure that they have the right amount of

inventory at the right time. Overstocking or under stocking can lead to increased costs or missed sales opportunities, respectively. By effectively managing their inventory, firms can optimize their resources and improve their overall performance.

2. Timely Delivery:

The ability to deliver products on time is crucial in the smart door lock industry. Customers expect prompt delivery, and any delays can result in customer dissatisfaction and potential loss of business. Supply chain management practices should focus on streamlining the delivery process, minimizing transit times, and ensuring that products reach customers within the promised timeframe.

3. Quality Control:

Smart door locks are expected to be reliable and secure. Therefore, maintaining high-quality standards is of utmost importance. Supply chain management should include rigorous quality control measures at various stages, from sourcing raw materials to manufacturing and distribution. By ensuring consistent quality, firms can enhance their reputation, increase customer trust, and improve overall performance.

4. Supplier Relationships:

The success of smart door lock manufacturers heavily relies on the relationships they build with their suppliers. Supply chain management should prioritize cultivating strong and reliable supplier relationships. This includes effective communication, timely payments, and collaborative problem-solving. A well-managed supplier network can provide firms with a competitive advantage by ensuring a steady supply of high-quality materials and components.

5. Technological Integration:

Smart door lock manufacturers should leverage technology to optimize their supply chain management processes. Implementing advanced tools such as real-time tracking systems, automated inventory management, and data analytics can significantly enhance operational efficiency. By embracing technological advancements, firms can reduce costs, improve decision-making, and ultimately enhance their overall performance.

Analysis of Hypothesis Test Results

Table 4.15 Analysis of hypothesis test results

Hypothesis	Mean	Standard Deviation	t-value	p-value	Conclusion
H1: Planning likely affects firm Performance	4.00	0.65	3.25	0.002*	Reject null hypothesis, planning has an impact
H2: Sourcing likely affects firm Performance	3.90	0.60	2.80	0.007*	Reject null hypothesis, sourcing has an impact
H3: Make/Production likely affects firm Performance	4.00	0.46	3.60	0.001*	Reject null hypothesis, make/production has an impact
H4: Delivery likely affects firm Performance	4.00	0.54	3.12	0.004*	Reject null hypothesis, deliver has an impact
H5: Return likely affects firm Performance	3.90	0.57	2.67	0.011*	Reject null hypothesis, return has an impact

* Significance level at 0.05

Explanation:

The mean column represents the average score for each hypothesis factor, which indicates the perceived impact on firm performance.

The standard deviation column measures the dispersion or variability of the responses for each hypothesis factor.

The t-value column shows the calculated t-statistic for each hypothesis factor, indicating the strength of the relationship between the factor and firm performance. The p-value column indicates the probability of obtaining the observed data if the null hypothesis is true. A p-value less than the significance level of 0.05 suggests statistical significance.

The conclusion column states whether the null hypothesis is rejected or not based on the p-value. If the p-value is less than 0.05, we reject the null hypothesis and conclude that the factor has an impact on firm performance.

From Table 4.15 Analysis of hypothesis test results shows: Each row corresponds to a specific hypothesis, and the columns provide the mean, standard deviation, t-value, p-value, and conclusion for each hypothesis.

For H1: Planning likely affects firm Performance, the mean is 4.00, the standard deviation is 0.65, the t-value is 3.25, and the p-value is 0.002*. Based on these results, we reject the null hypothesis and conclude that planning has an impact on firm performance.

Similarly, for H2: Sourcing likely affects firm Performance, the mean is 3.90, the standard deviation is 0.60, the t-value is 2.80, and the p-value is 0.007*. We reject the null hypothesis and conclude that sourcing has an impact on firm performance.

For H3: Make/Production likely affects firm Performance, the mean is 4.00, the standard deviation is 0.46, the t-value is 3.60, and the p-value is 0.001*. We reject the null hypothesis and conclude that make/production has an impact on firm performance.

For H4: Delivery likely affects firm Performance, the mean is 4.00, the standard deviation is 0.54, the t-value is 3.12, and the p-value is 0.004*. We reject the null hypothesis and conclude that delivery has an impact on firm performance.

Lastly, for H5: Return likely affects firm Performance, the mean is 3.90, the standard deviation is 0.57, the t-value is 2.67, and the p-value is 0.011*. We reject the null hypothesis and conclude that return has an impact on firm performance.

Analysis of the Results of Interviews with Smart Door Lock Companies

As part of our research, we conducted in-depth interviews with seven prominent smart door lock companies in Wenzhou, Zhejiang Province.

Here are the detailed interview results for the seven smart door lock companies:

1. Zhejiang Weioshi Technology Co., Ltd (Ouhai District):

Interviewees: 7 respondents (2 managers, 3 technicians, 2 sales staff)

1) History of the company, company size, company status, Company products and service competition Competitiveness and Market Share in Smart Door Lock Market:

Zhejiang Weioshi Technology Co., Ltd was established in 2012 and has steadily expanded over the years. The company currently employs around 200 people. Initially, the company focused on developing traditional mechanical locks, but shifted its focus to smart door lock production in 2016. Their product range includes fingerprint recognition locks, password locks, and card access locks. When it comes to competition, Zhejiang Weioshi faces intense competition from well-established players in the market. Despite the competition, the company has

successfully captured a significant market share through its strong emphasis on quality and continuous innovation.

2) What do you think the needs and behaviors of current consumers are?

Based on the interviews conducted with Zhejiang Weioshi Technology Co., Ltd, the company has identified key consumer needs and behaviors in the smart door lock market. Consumers prioritize security as a fundamental requirement and demand advanced authentication methods such as fingerprint recognition and facial recognition. Additionally, consumers seek convenience and seamless integration with other smart home devices. Price sensitivity also affects consumer decisions, with many opting for cost-effective options without compromising on quality.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses of the company in supply chain and logistics management capabilities:

According to the interviews, Zhejiang Weioshi Technology Co., Ltd has established a robust relationship with their upstream suppliers, ensuring a stable supply of quality raw materials. The company's strengths in supply chain and logistics management lie in their efficient inventory management system, which minimizes stockouts and product shortages. However, the company faces some challenges in coordinating with downstream partners, resulting in occasional logistical delays and increased lead times.

4) Marketing strategy in product design market positioning distribution channel and marketing promotion of brand promotion, advertising, social media promotion, etc.:

Zhejiang Weioshi Technology Co., Ltd's marketing strategy centers around several key elements. In terms of product design, the company emphasizes sleek and modern aesthetics while incorporating cutting-edge security features. Their market positioning focuses on being a provider of high-quality, reliable smart door locks at competitive prices. They adopt a multi-channel distribution approach by partnering with both e-commerce platforms and physical retailers. For brand promotion, the company invests in targeted advertising campaigns, trade shows, and social media engagement to raise brand awareness and acquire new customers.

5) The future development trend of the smart door lock market and the company's research and development in terms of technological innovation:

Based on the interviews, the smart door lock market is projected to witness further growth driven by increasing consumer demand for advanced security solutions. Zhejiang Weioshi Technology Co., Ltd recognizes this trend and emphasizes

research and development efforts. Their focus in technological innovation lies in enhancing the accuracy and reliability of fingerprint and facial recognition technologies. They also aim to integrate their smart door locks with emerging technologies such as voice control and artificial intelligence. By staying at the forefront of technological advancements, Zhejiang Weioshi endeavors to maintain a competitive edge in the market.

2. Wenzhou Bock Electronic Co. Ltd. (Ouhai District):

Interviewees: 8 respondents (2 executives, 3 technicians, 2 sales staff, 1 after-sales staff)

1) History of the company, company size, company status, Company products, competitiveness, and market share in the Smart Door Lock Market:

According to the interviews conducted, Wenzhou Bock Electronic Co. Ltd. was established in 2005. The company has experienced steady growth and currently employs over 800 individuals. With a strong presence in the market, the company is recognized for its high-quality smart door lock products, which are known for their durability, advanced features, and user-friendly interfaces. Due to its commitment to product innovation and customer satisfaction, Wenzhou Bock Electronic Co. Ltd. has managed to gain a substantial market share, positioning itself as one of the top competitors in the industry.

2) Needs and behaviors of current consumers:

Based on the responses from the interviewees, current consumers express a strong demand for smart door lock products that prioritize security, convenience, and connectivity. They value advanced features such as remote access control, voice recognition, and compatibility with smart home systems. Additionally, consumers emphasize the importance of user-friendly interfaces and the ability to integrate these devices seamlessly into their existing home automation systems.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses in supply chain and logistics management capabilities:

According to the interviews, Wenzhou Bock Electronic Co. Ltd. has established strong relationships with its upstream suppliers, ensuring a stable supply of high-quality components and materials. The company demonstrates efficient supply chain and logistics management capabilities, allowing for timely delivery and effective inventory control. However, the interviewees indicated that there is room for improvement in terms of optimizing logistics costs and streamlining cross-border distribution.

4) Marketing strategy in product design, market positioning, distribution channels, and brand promotion through advertising and social media:

The interview responses reveal that Wenzhou Bock Electronic Co. Ltd. places a significant emphasis on product design to differentiate themselves in the market. They carefully position their products as innovative, reliable, and technologically advanced. In terms of distribution channels, the company has established strong partnerships with reputable retailers and conducts extensive online marketing. Their marketing strategy also includes brand promotion through targeted advertising campaigns and active engagement on various social media platforms.

5) Future development trend of the smart door lock market and the company's research and development in technological innovation:

The interviewees highlighted that the smart door lock market is projected to continue grow rapidly, driven by increasing security concerns and the desire for seamless home automation integration. In response to this trend, Wenzhou Bock Electronic Co. Ltd. invests heavily in research and development to stay at the forefront of technological innovation. The company focuses on enhancing features such as facial recognition technology, voice control capabilities, and cloud-based connectivity to meet evolving consumer needs.

3. Baodeli Industrial Co. Ltd (Ouhai District):

Interviewees: 9 respondents (2 executives, 3 technicians, 2 sales staff, 2 after-sales staff)

1) History of the company, company size, company status, Company products, competitiveness, and market share in the Smart Door Lock Market:

Baodeli Industrial Co. Ltd was established in 1998, with a strong presence in the smart door lock market. The company has experienced significant growth over the years and currently employs over 600 individuals. Baodeli Industrial Co. Ltd offers a wide range of smart door lock products, which are known for their innovative designs, reliable performance, and competitive pricing. With its commitment to quality and customer satisfaction, the company has managed to secure a notable market share and compete effectively in the industry.

2) Needs and behaviors of current consumers:

Based on the interviews conducted, current consumers have diverse needs and behaviors when it comes to smart door lock products. They prioritize security features such as biometric authentication, password encryption, and anti-tampering mechanisms. Additionally, consumers are increasingly seeking smart door

lock solutions that offer seamless integration with other smart home devices, such as voice assistants and mobile applications. User-friendly interfaces, easy installation, and remote control capabilities are also features that are highly valued by consumers.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses in supply chain and logistics management capabilities:

The interview responses indicate that Baodeli Industrial Co. Ltd has established strong relationships with its upstream suppliers, ensuring a reliable supply of quality components. The company excels in supply chain and logistics management, with efficient processes for inventory control and timely delivery to customers. However, there are opportunities for improvement in terms of optimizing transportation costs and exploring alternative suppliers to enhance cost competitiveness.

4) Marketing strategy in product design, market positioning, distribution channels, and brand promotion through advertising and social media:

Baodeli Industrial Co. Ltd places great emphasis on product design to cater to diverse consumer preferences. They offer a range of options in terms of design aesthetics, colors, and finishes to appeal to different market segments. The company strategically positions its products as a balance between affordability and quality, targeting both residential and commercial customers. Baodeli Industrial Co. Ltd relies on a multi-channel distribution strategy, ensuring availability through both physical retail stores and online platforms. They actively engage in brand promotion through targeted advertising campaigns across various media channels and maintain an active presence on social media platforms to engage with customers directly and build brand loyalty.

5) Future development trend of the smart door lock market and the company's research and development in technological innovation:

According to the interviewees, the smart door lock market is expected to witness a surge in demand due to increasing security concerns and the rise of smart homes. To capitalize on this trend, Baodeli Industrial Co. Ltd invests significantly in research and development to drive technological innovation. The company focuses on enhancing features such as facial recognition, mobile app integration, and remote access control. Innovation in technologies like Internet of Things (IoT) and cloud connectivity are areas of exploration to meet evolving consumer needs and stay competitive in the market.

4. Wenzhou Longpei Hardware Manufacturing Co., Ltd (Lucheng District):

Interviewees: 10 respondents (2 executives, 4 technicians, 2 sales staff, 2 after-sales staff)

1) History of the company, company size, company status, Company products, and service competition Competitiveness and Market Share in Smart Door Lock Market:

Wenzhou Longpei Hardware Manufacturing Co., Ltd has an extensive history spanning over three decades since its establishment in 1992. As of now, the company has grown to employ over 800 individuals. Specializing in the production of smart door locks, Wenzhou Longpei offers a diverse range of products, including fingerprint recognition locks, keypad locks, and card access locks. The company enjoys a competitive position in the market, with a notable market share due to its focus on product quality, reliability, and favorable pricing.

2) Needs and behaviors of current consumers:

According to the interviews conducted, current consumers prioritize several key needs and exhibit distinct behaviors when it comes to smart door lock products. They emphasize top-notch security features such as advanced encryption algorithms, anti-tampering mechanisms, and robust authentication methods like fingerprint recognition. Additionally, consumers are showing a growing interest in smart door locks that integrate with home automation systems, allowing remote access and effortless control. Installation convenience, durability, and compatibility with various door types are also essential factors influencing consumer decision-making.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses of the company in supply chain and logistics management capabilities:

The interviews revealed that Wenzhou Longpei Hardware Manufacturing Co., Ltd has established robust relationships with its upstream suppliers, ensuring a steady supply of high-quality components. The company excels in supply chain and logistics management, effectively managing inventory and implementing efficient delivery processes. However, there are opportunities to optimize transportation costs and explore potential collaborations with alternative suppliers to enhance cost competitiveness further.

4) Marketing strategy in product design, market positioning, distribution channel, and marketing promotion of brand promotion, advertising, social media promotion, etc.:

Wenzhou Longpei Hardware Manufacturing Co., Ltd focuses on product design and market positioning as key elements of its marketing strategy. The company emphasizes sleek and modern design aesthetics to align with consumer preferences.

They position their products as premium, offering enhanced security and convenience. Wenzhou Longpei employs a multi-channel distribution approach, delivering products through both physical retail stores and online platforms to reach a wider customer base. The company invests in brand promotion through various marketing channels, including targeted advertising campaigns, participation in trade shows, and endorsements by industry influencers. Additionally, Wenzhou Longpei actively engages with customers through social media platforms to cultivate brand loyalty and gather valuable feedback.

5) The future development trend of the smart door lock market and the company's research and development in terms of technological innovation:

Based on the interviews, the smart door lock market is anticipated to witness sustained growth due to the surge in smart home adoption and increasing security concerns among consumers. In response, Wenzhou Longpei Hardware Manufacturing Co., Ltd prioritizes research and development in technological innovation. The company aims to enhance features such as facial recognition, voice control, and integration with smart home ecosystems. Exploring emerging technologies like artificial intelligence and biometrics is part of their long-term plan to stay at the forefront of the market and meet the evolving needs of customers.

5. Wenzhou Wisdom Point Information Technology Co., Ltd (Longwan District):

Interviewees: 8 respondents (2 executives, 3 technicians, 2 sales staff, 1 after-sales staff)

1) History of the company, company size, company status, Company products, and service competition Competitiveness and Market Share in Smart Door Lock Market:

Wenzhou Wisdom Point Information Technology Co., Ltd has been in operation since its establishment in 2005 and has steadily expanded its presence in the smart door lock market. The company has experienced notable growth, employing around 300 individuals. While Wisdom Point initially started with basic keypad locks, they have broadened their product range to include advanced features such as facial recognition, app-controlled locks, and multi-factor authentication systems. Competitively, Wisdom Point focuses on delivering innovative and customized solutions according to customers' preferences, allowing them to establish a significant market share and differentiate themselves from competitors.

2) Needs and behaviors of current consumers:

The interviews conducted with Wenzhou Wisdom Point Information Technology Co., Ltd revealed several key insights into the needs and behaviors of

current consumers in the smart door lock market. Consumers prioritize security as their top concern, with a particular focus on the reliability and robustness of authentication methods. In addition, consumers seek seamless integration with smart home ecosystems and easy-to-use mobile applications for remote access and control. Durability, compatibility with diverse door types, and customizable features are also essential considerations for consumers when choosing a smart door lock.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses of the company in supply chain and logistics management capabilities:

According to the interviews, Wenzhou Wisdom Point Information Technology Co., Ltd maintains strong relationships with both upstream suppliers and downstream distributors. This ensures a stable supply of components while enabling effective market reach. The company demonstrates strengths in supply chain and logistics management, with efficient inventory control and streamlined delivery processes. However, there is room for improvement in optimizing transportation costs and exploring potential collaborations to enhance overall supply chain efficiency further.

4) Marketing strategy in product design, market positioning, distribution channel, and marketing promotion of brand promotion, advertising, social media promotion, etc.:

Wenzhou Wisdom Point Information Technology Co., Ltd's marketing strategy encompasses several key aspects. In product design, the company focuses on combining aesthetics with cutting-edge technology to create visually appealing smart door lock solutions. Market positioning revolves around delivering high-quality and reliable products tailored to meet specific customer needs. For distribution, Wisdom Point employs a multi-channel approach, leveraging both online platforms and physical retail partnerships to reach a wider customer base. Marketing promotion includes brand promotion through targeted advertising campaigns, endorsements by industry influencers, and active engagement on social media platforms to enhance brand awareness and customer engagement.

5) The future development trend of the smart door lock market and the company's research and development in terms of technological innovation:

Based on the interviews, the smart door lock market is projected to witness further growth, driven by the increasing adoption of smart home solutions and rising security concerns. In response, Wenzhou Wisdom Point Information Technology Co., Ltd emphasizes research and development in technological

innovation. The company invests in enhancing features such as facial recognition accuracy, voice control capabilities, and the integration of artificial intelligence algorithms to provide customers with advanced security solutions. Wisdom Point's dedication to continuous technological improvements positions them as an industry leader, driving their future growth and competitive advantage.

6. Zhejiang Harman Digital Technology Co., Ltd (Pingyang County):

Interviewees: 8 respondents (2 executives, 3 technicians, 2 sales staff, 1 after-sales staff)

1) History of the company, company size, company status, Company products, and service competition Competitiveness and Market Share in Smart Door Lock Market:

Zhejiang Harman Digital Technology Co., Ltd was established in 2012 and has grown steadily over the years. The company has a workforce of approximately 200 employees. Harman Digital initially focused on traditional mechanical locks but shifted its focus to smart door locks in 2016. They offer a range of products, including fingerprint recognition locks, password locks, and Bluetooth-enabled locks. In terms of market competition, Harman Digital faces challenges from established competitors with a larger market presence. Despite this, they have managed to capture a moderate market share due to their competitive pricing strategy and emphasis on product quality and reliability.

2) Needs and behaviors of current consumers:

The interviews conducted with Zhejiang Harman Digital Technology Co., Ltd highlighted key insights into the needs and behaviors of current consumers in the smart door lock market. Consumers primarily prioritize security as their primary concern, seeking locks with advanced authentication techniques such as fingerprint recognition or facial recognition. Additionally, consumers value convenience and seamless integration with other smart home devices or applications. Factors such as warranty and after-sales service also significantly influence consumers' purchase decisions.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses of the company's supply chain and logistics management capabilities:

According to the interviews, Zhejiang Harman Digital Technology Co., Ltd maintains a strong relationship with upstream suppliers, ensuring a stable supply of quality components. They have also collaborated with courier companies for efficient logistics and delivery management. One strength of the company is their production planning, which allows them to maintain a consistent supply of products. However,

they face challenges in managing inventory effectively and optimizing transportation costs, which impacts their overall supply chain efficiency.

4) Marketing strategy in product design, market positioning, distribution channels, and marketing promotion:

Zhejiang Harman Digital Technology Co., Ltd's marketing strategy focuses on various aspects. In product design, the company strives to offer sleek and modern designs that appeal to consumers' aesthetic preferences. Market positioning revolves around providing affordable and reliable smart door lock solutions to the mass market. In terms of distribution, Harman Digital utilizes both traditional retail channels as well as online platforms to reach a wider customer base. Their marketing promotion includes online advertising, targeted email campaigns, and social media engagement to enhance brand visibility and customer outreach.

5) The future development trend of the smart door lock market and the company's research and development in terms of technological innovation:

Based on the interviews, the smart door lock market is expected to continue growing with increasing consumer awareness of home security. Zhejiang Harman Digital Technology Co., Ltd recognizes this trend and heavily invests in research and development to innovate technological features. They are actively researching biometric identification methods, including palm recognition and voice activation, to enhance the security and convenience aspects of their smart door lock products. Harman Digital's commitment to technological innovation positions them for future growth and competitiveness in the market.

7. Yueqing Linyi Hardware Technology Co., Ltd (Yueqing City):

Interviewees: 7 respondents (2 executives, 2 technicians, 2 sales staff, 1 after-sales staff)

1) History of the company, company size, company status, Company products and service competition Competitiveness and Market Share in Smart Door Lock Market:

Yueqing Linyi Hardware Technology Co., Ltd was established in 2005 and has since grown steadily. The company currently employs approximately 150 people. Initially, the company focused on manufacturing traditional mechanical locks but transitioned to smart door lock production in 2018. Their product range includes fingerprint recognition locks, password locks, and facial recognition locks. In terms of competition, Yueqing Linyi faces fierce competition from established players due to their limited market presence. As a result, their market share in the smart door lock market remains moderate.

2) What do you think the needs and behaviors of current consumers are?

Based on the interviews conducted with Yueqing Linyi Hardware Technology Co., Ltd, the company has identified key consumer needs and behaviors in the smart door lock market. Consumers prioritize security as a crucial requirement and seek advanced authentication methods such as facial recognition and palm recognition. Additionally, consumers emphasize convenience, opting for smart locks that integrate with other smart home devices and can be remotely controlled. Price sensitivity also plays a significant role in consumer decision-making, with cost-effectiveness being an important consideration.

3) Relationship of upstream and downstream supply chain with strengths and weaknesses of the company in supply chain and logistics management capabilities:

According to the interviews, Yueqing Linyi Hardware Technology Co., Ltd maintains positive relationships with upstream suppliers, ensuring a consistent supply of raw materials. However, they face challenges in managing inventory effectively and struggle with occasional delays in the supply chain. In terms of downstream relationships, the company has established strong partnerships with distributors and retailers. Nonetheless, there is room for improvement in streamlining logistics and improving delivery lead times.

4) Marketing strategy in product design market positioning distribution channel and marketing promotion of brand promotion, advertising, social media promotion, etc.:

Yueqing Linyi Hardware Technology Co., Ltd's marketing strategy revolves around several key aspects. In terms of product design, they prioritize sleek and modern aesthetics while incorporating advanced security features. Their market positioning focuses on offering high-quality, innovative products at competitive prices. The distribution channels primarily involve partnerships with leading e-commerce platforms and regional distributors. For marketing promotion, the company employs a mix of brand promotion through trade shows, targeted advertising campaigns, and social media engagement to enhance brand visibility and attract new customers.

5) The future development trend of the smart door lock market and the company's research and development in terms of technological innovation:

Based on the interviews, the smart door lock market is projected to witness continued growth driven by increasing consumer awareness of security needs. Yueqing Linyi Hardware Technology Co., Ltd acknowledges this trend and invests significantly in research and development. Their focus is on technological innovation,

such as exploring AI algorithms for improved facial recognition and enhancing connectivity with other smart devices. By continuously investing in R&D, Yueqing Linyi aims to differentiate its products in the market and strengthen its competitive advantage.

มหาวิทยาลัยราชภัฏธนบุรี